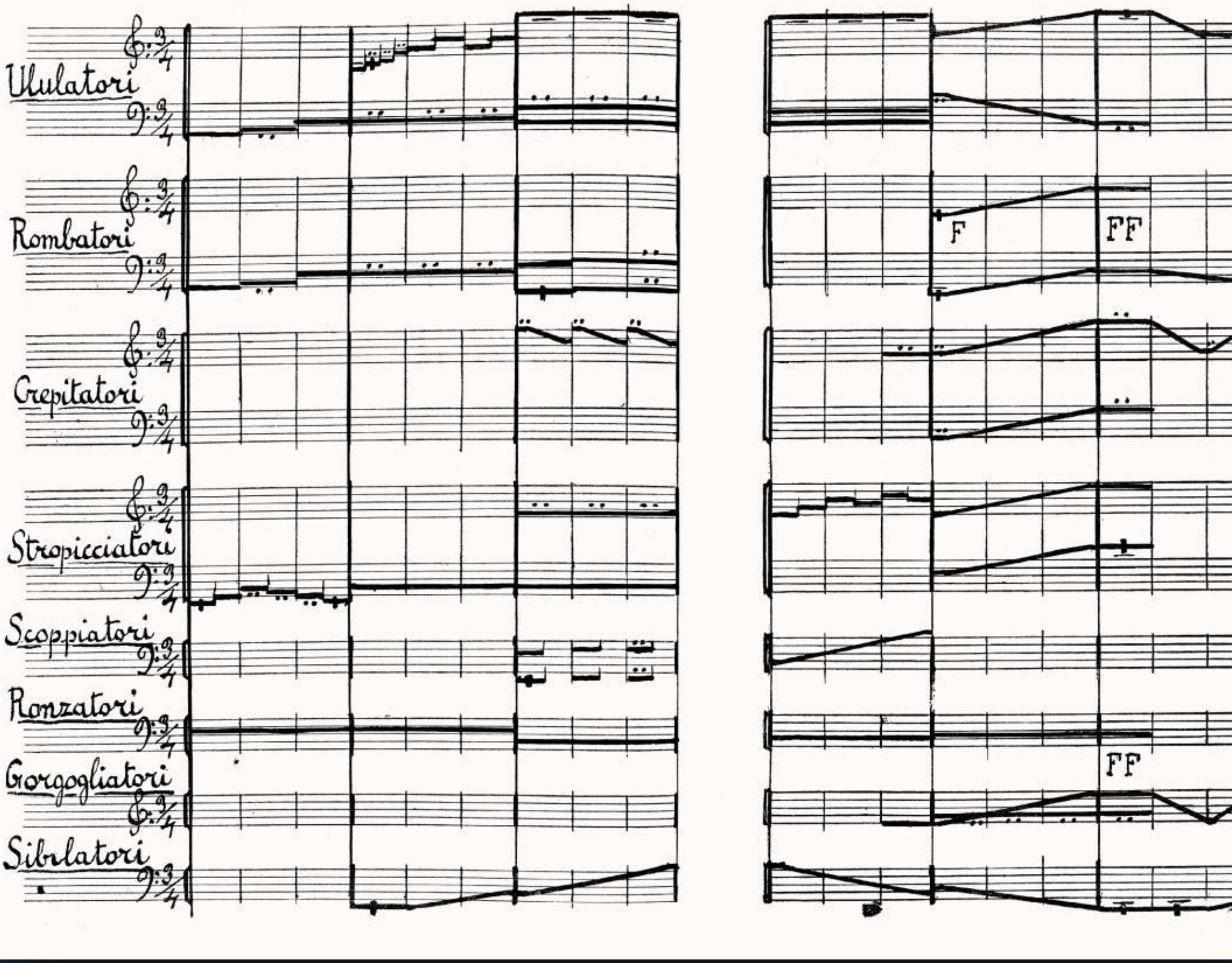
DISONATA



ART
IN SOUND
UP TO 1980

MUSEO NACIONAL CENTRO DE ARTE REINA SOFIA

DISONATA

SOUND
IN ART
UP TO 1980

The convergence of sound and vision in the late nineteenth century opened the door to a series of hybrid artistic creations that continued to evolve over almost a hundred years and that, even today, do not conform to conventional disciplinary categories. During this period, sound phenomena became a constant source of inspiration and a tool used extensively by many artists dedicated to the renewal of artistic practice. It became clear that art must be connected to everyday things, that it must be produced in the moment and in conjunction with the "context," with the surroundings, with space and time. And given that sound is precisely one of the things that is always around us in all circumstances, this development was a step toward the start of the essential autonomy of sound.

The debate around sound in the twentieth-century visual arts was a true revolution, because the aural "experience" involves an element of provocation, a disruption of the existing patterns of the established order.

Sound thus became a principle of action, a living space for the construction of meaning, a space in which spectators were not just passive receivers but also, potentially, active subjects.

Disonata: Art in Sound up to 1980 looks at the origins of sound art as something different from music, something with a much broader scope for action because it places value on experimentation, breaks disciplinary shackles, and opens the door to new hybrid genres.

In a survey ranging from the emergence of the avant-garde, with its many branches and offshoots, to the early 1980s, the exhibition brings together a large selection of artworks and projects that explore this boundary-crossing artistic practice. It is a showcase that shows us a lesser-known side of the visual arts and confirms that, in art, all our senses are equally involved in the perceptual experience.

As part of this overview of sound art, the exhibition critically examines a series of singular case studies and experiences, from the programmatic defense of noise by the

Futurist movement, to the Dada and Lettrist investigations into orality in poetry, or the conceptual sound actions that artists linked to the Fluxus movement carried out in the 1960s and 1970s.

The sound documents, films, paintings, scores, musical sculptures, photographs, and materials of various kinds that make up this exhibition lead us deep into the fertile field of experimental artistic creation.

I would like to highlight the research and selection work done by the curator Maike Aden, and to thank the Museo Reina Sofía for the effort required in these difficult times to successfully execute an exhibition project as exciting and innovative as *Disonata*.

José Manuel Rodríguez Uribes
Minister of Culture and Sport

Through a selection of artworks and experiences that go beyond the predefined categories of modern and contemporary art, *Disonata: Art in Sound up to 1980* offers a survey of the history of experimentation with sound material spanning from the late nineteenth century to 1980. As the processes by which music broke out of its confines continued to evolve, sound became a constituent element of many works in the visual arts field, giving rise to the emergence of hybrid (music/sound) artistic devices with enormous transformative potential precisely due to their structural ambiguity.

The origins of sound art are inextricable from the technological, media, and ideological revolutions that took place at the dawn of the nineteenth century. The Western/classical music system was being profoundly challenged and, along with it, so too was the symbolic and conceptual apparatus that had been set up to legitimize it, elevating it to the pinnacle of the hierarchy of musical forms. Max Weber, one of the first thinkers to examine the process that generated this hegemonic narrative, warned that in its eagerness to transform music into a highly codified artistic discipline, European musical culture had ended up becoming stagnant.

The desire to break the shackles of the rules and constraints on visual and sound creation was a central concern for the artists featured in this exhibition. These musicians, visual artists, and poets saw their work as an interdisciplinary practice and, motivated by an emancipatory aspiration, experimented with all kinds of sounds, from almost total silence to deafening noise. With a view to allowing the selected works to be approached from various perspectives, they have been organized around some key moments in the history of sound-based artistic creation, in a way that the exhibition's curator Maike Aden describes as a "disonata": the exhibition version of a sound piece that, unlike a classical sonata, lacks a definite form. The space of tension thus generated—which ties in with notions such as Brechtian "estrangement" and the Russian formalist Viktor Shklovsky's

"defamiliarization"—makes it possible to disrupt the automatism of perception.

One of these key moments was clearly the emergence of Futurism. In its controversial founding manifesto published in 1909, Filippo Tommaso Marinetti already emphasized noise as the spearhead of the movement's plan for radical renewal. In the years that followed, Luigi Russolo contributed to this project with his so-called *intonarumori*—a family of musical instruments that generated different kinds of noises (roaring, crackling, buzzing, whispering, etc.)—and with the creation of a new musical notation system (based on a single note-line) that sought to broaden the expressive potential of the traditional instruments that Futurist musician Francesco Balilla Pratella played in his concerts.

Futurism also played a part in another key aspect of the ongoing expansion of the scope of sound: experimentation with the sounds made by the body and the acoustic-phonatory dimension of language. In Russia in the early 1910s, various groups of poets emerged and devoted themselves to exploring the acoustic and rhythmic potential of words and letters in themselves. This type of experimentation was also carried out by artists linked to the Cabaret Voltaire and the Dada movement, such as Hugo Ball, Tristan Tzara, Kurt Schwitters, and Raoul Hausmann. The call for anti-discursive poetry focusing on orality that would shatter the imperative of linguistic signification, as Antonin Artaud demanded, was taken up years later by Lettrists and Ultra-Lettrists, for whom poems transcribed on a page more or less fulfilled the role of a score.

After World War II, the emergence and development of more sophisticated and accessible technological tools opened up a new era in artistic experimentation with sound material. A key figure during this new period was French composer and engineer Pierre Schaeffer, who laid the foundations of what he called *musique concrète*. In doing so, he exponentially increased the combinatorial potential of electronically generated tones and rhythms in compositions that exist only as recordings, with no prior score or notation. Henri Chopin and other poets linked to Lettrism,

such as Gil J Wolman and François Dufrêne, also took advantage of the new recording and editing possibilities of magnetic tape, giving rise to a new field of poetic experimentation that combined orality and sound technology.

From the late 1950s, a hard-to-categorize group of artists—including Jean Dubuffet and Asger Jorn—who rebelled against the musical hierarchies of skills and knowledge brought about another milestone in this history of the expansion of the scope of sound. Their impulsive, incisive works (which could, in a sense, be considered a foretaste of punk) often incorporated chance and error as productive elements. This genealogy of artists tied in with Fluxus circles (George Brecht, Nam June Paik, Dieter Roth, or, in Spain, the Zaj collective), artists who, shedding their classical musical training and questioning the notion of authorship and of the artwork as a finished whole, adopted principles like randomness, simplicity, and indetermination as core aspects of their performative projects.

The works based on acoustic material by most of the artists included in *Disonata: Art in Sound up to 1980* are markedly metalinguistic in nature and draw attention to their own context. As such, they raise the need for critical reflection on how context influences their own gestation and realization. By highlighting this aspect, the exhibition seeks to contribute to dismantling the deep-seated prejudice that music did not undergo a conceptual turn like the visual arts. A prejudice that overlooks the strong presence of self-referentiality in experimental sound art practices throughout the twentieth century, particularly from the 1960s on, with projects such as Robert Morris's *Box with the Sound of Its Own Making* (1961), and Ulysses Carrión's *45 revoluciones por minuto* (45 Revolutions per Minute, 1977), in which the construction and functioning of the works themselves become "audible."

Works such as the ones mentioned above, which were still influenced by the aspirations of the utopian project of the avant-garde, are the tail end of the expansion of the sound space from the early twentieth century up to the 1980s. A period

coinciding with the crisis of the idea of modernity, when artistic experimentation with acoustic media took a very different course. This exhibition allows us to (re)discover the directions taken by sound-based artistic creation in the twentieth century and to recognize that the conversion of the vast universe of sound into material for artistic creation led to the redefinition of music, the visual arts, and poetry. But in addition, by radically challenging the hegemony of the visual, it has also helped to transform our way of understanding reality, which, as Maike Aden points out, "we perceive and interpret to a great extent acoustically."

Manuel Borja-Villel
Director, Museo Nacional
Centro de Arte Reina Sofía

LISTEN!

THE WORLD IS SOUND!

A Century
of Artistic
Experiments with
Acoustic Material

Maike Aden

The care of the governors should be directed to preserve music … from innovation; alter the songs of a country … and you will soon end by altering its laws. The change appears innocent at first, and begins in play; but the evil soon becomes serious, working secretly upon the characters of individuals, then upon social and commercial relations, and lastly upon the institutions of a state; and there is ruin and confusion everywhere.

—Plato, *Republic*[1]

In 1907, the composer Ferruccio Busoni wrote his visionary volume *Entwurf einer neuen Ästhetik der Tonkunst* (*Sketch of a New Esthetic of Music*).[2] He considered that the time had come for a radical renewal of conventional sound systems, temperament, notation forms, and orchestration, in order to expand the fettered forms of the "architectonic, acoustic and esthetic dogmas"[3] of the European music system that he regarded as totally underdeveloped and overwhelmed with rules. Such statements heralded the sudden emergence of a heretofore excluded reality that shattered the pretention of an orderly harmony in this world.

Harmony is rarely as innocent as it might appear. It is often ensnared in political ideology and opinions. As a tonal concept in Western classical music, harmony had its origins in the invention by the property owners and the so-called educated middle

classes of the eighteenth century of the concept of "art appreciation" as a key to the rather hermetic world of music.[4] In the service of this class, harmony became the instrument of an ethnocentric narrative that maintained it at the top of the hierarchy, subjugating all other forms and styles of music.[5] The new professional field of music historians and critics that emerged in this environment invented and applied to harmony constructs such as "progressive," "truthful," "spiritual," and "divine," ensuring that it was purified of all that the middle classes had left behind them on their path to wealth and power in terms of contradiction, violence, or misery. In his unfinished, posthumously published musical study *Die rationalen und soziologischen Grundlagen der Musik* (*The Rational and Sociological Foundations of Music*),[6] Max Weber was one of the first to decode the promise of worldly redemption for these repercussions offered by the cold, rational annexation of the world by music that was entirely detached from everyday life. Using a wide variety of concrete examples, he eruditely analyzed how, during the course of its transformation into serious music, the once diverse European musical culture abolished anything that contravened its purposeful use. Indeed, it appears that the variety of possible notation systems, types of tone, orchestration, and performance rituals was ever more strictly regulated.[7] The judgment of what was aesthetically acceptable, according to Weber, became increasingly narrow. Eventually these developments, influenced by extra-musical dictums, led to conformity and to a dulling of melodic audition. Nowhere was this so manifest as in the middle-class symbol par excellence, the piano.[8]

Ferruccio Busoni declared that the task of liberating the musical art was "a huge responsibility."[9] But his declarations, like those of his contemporaries, that music had been used to tame, paralyze, and discipline, also seem to suggest that he would take pleasure in making this effort.

Disonata: Sound in Art up to 1980

The exhibition *Disonata: Sound in Art up to 1980* imparts a comprehensive overview of the history of experimentation involving acoustic materials, taking into account the period from the late nineteenth century to the mid-1980s. Such experiments were characteristic of the artistic transformations of new auditory and visual experiences carried out in the light of the technological, media, and ideological revolutions of the dawning twentieth century. They marked the beginning of a conquest of the depleted Western classical music system, which had lost all connection with reality. Its corset of rules, which had become too tight, burst open to liberate tone, sound, and noise. Acoustic phenomena and events became malleable materials to be manipulated technically and vocally. Not only musicians but also visual artists and poets launched experiments involving sounds of all kinds, ranging from near-silence to ear-splitting crashes, and their investigations revolutionized perceptions of all these creative domains. It was as if, at the beginning of the twentieth century, a kind of membrane in their ears that had previously blocked out the noise of this world was dissolved. From then on, they took not only

visual phenomena into consideration but also unseen yet powerful acoustic phenomena. What is more, acoustic manifestations became malleable material to be manipulated technically and vocally like a sculpture in space. These acoustic breakthroughs changed not only our comprehension of music, visual art, and poetry but also our comprehension of our reality, which we perceive and interpret to a great extent acoustically.

In the mid-1980s, acoustic means of expression branched out in hitherto unimagined directions, pushing aside ideas of the self-contained artwork, the authenticity of the medium, and the autonomy of art and music. The self-perception of the independent artist as a kind of living antithesis to social discourse and rituals was likewise undermined, but still upheld. The associated concept of a dynamic of innovation, conversely, was qualified and revised in line with the crisis discourse that surrounded ecology and economy in the early 1980s.[10] The culminating point of this exhibition is the accompanying break with the ideology of perpetual newness and originality in art. Strategies for interacting with acoustic material since the 1980s will be dealt with in the exhibition *Audiosphere: Sound Experimentation 1980–2020*, in which the Museo Reina Sofía opens the next chapter in its artistic confrontation with sound phenomena.

“Disonata”

All those embarking today on an expedition into this almost century-long history of the expansion of sound space, which is also a history of expanded thought space, discover a fascinating universe of

highly heterogeneous and complex sound languages. Anyone attempting to classify these transboundary manifestations might assign them to the categories of synesthesia, image, object, action, situation, poetry, installation, architecture, film, mechanics, electroacoustic, concept, documentation, repetition, collage, deconstruction, inter-, trans-, or multimedia. Epoch-making festivals, exhibitions, and books over the last forty years have generated interest in such individual themes. But tone, sound, and noise deploy their multifarious riches precisely in the inconsistent intermediate spaces, or within intermittent boundaries that transcend such restrictive definitions. To limit them to a few theories or themes, or to reduce them to a linear narrative or to a common denominator, does not do them justice. Unless, that is, we accept a certain arbitrariness, which would mask the differentiating facets of their acoustic specificities. There is a great risk that the individual works would be downgraded to illustrative objects of a structure with which they have very little to do.

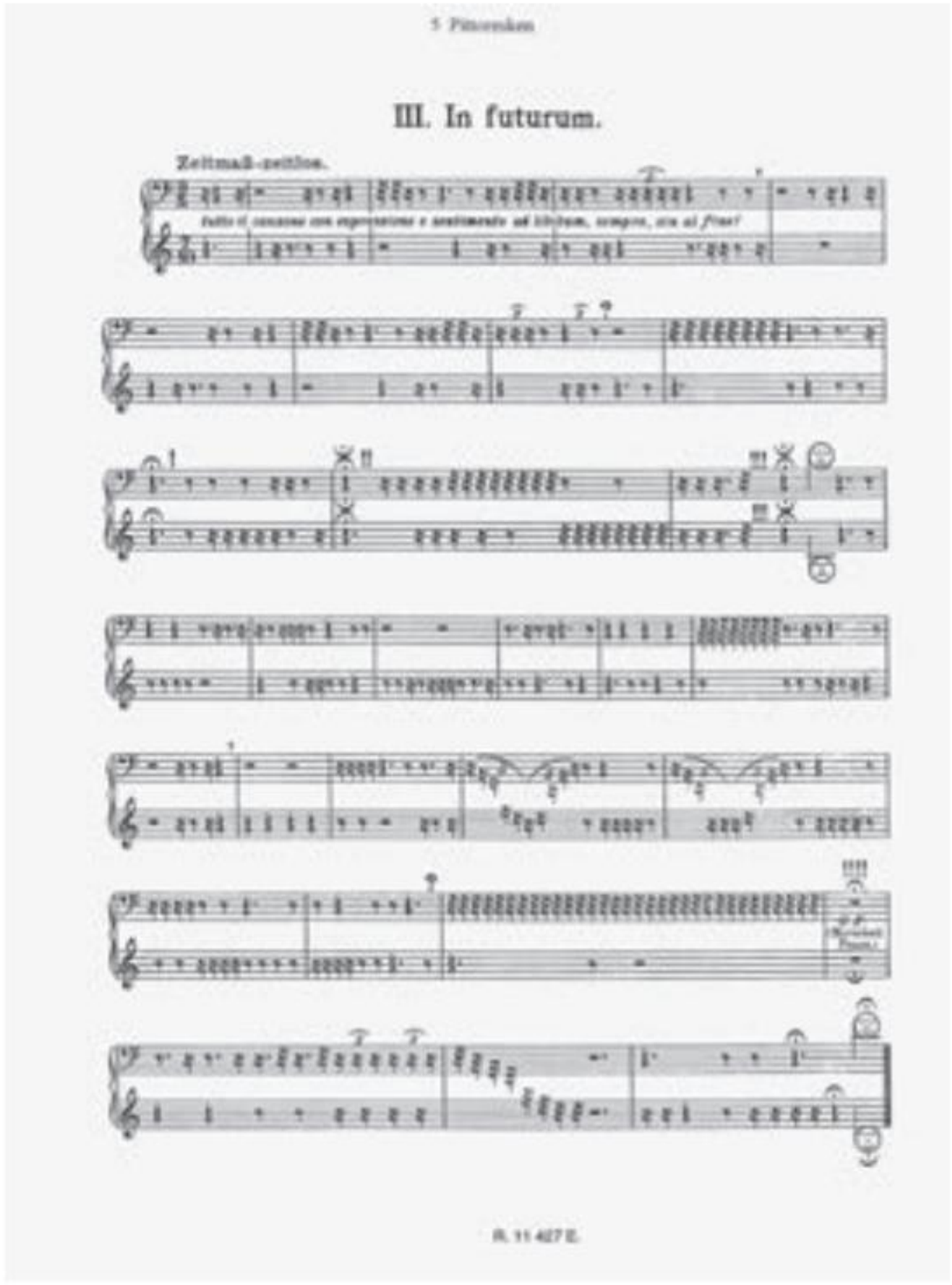
Taking into account the essentially unclassifiable nature of the multidimensional positions represented, this comprehensive show proposes more than a twentieth-century sound compendium forced into compliance with a nomenclature. On the contrary, the importance of the individual nuances of these positions is emphasized, trusting in the exceptional strength of the objects, pictures, score, sculptures, documents, and films. Rather than being displayed according to designated themes or organized hierarchies, the sound works are aligned according to a chronological process. The different sections, which reflect the spatial organization of the museum, permit

a contextualization that make perceptible not only the similarities between the works that participate in this dialogue but also and above all their specificities. The exhibition is to be understood as a "disonata," a sound piece that frustrates any expectation of a perfectly composed form. Disonatas are heard as sonorous resonant spaces whose vibrations, in all their nuances, unfold with full intensity if we allow them to seize hold of us and to reverberate within us.

This chronological process is described below with reference to certain individual works. The multiplicity of works on display is not easily represented, but the following examples permit an insight into and an overview of the perspectives offered by the exhibition on this all-encompassing art with sound.

"In futurum"

The earliest work in the exhibition is the *Album Primo-Avrilesque* (April Foolish Album, 1897) by the poet Alphonse Allais, a conceptual artist's book avant la lettre involving a series of monochrome artworks with its acoustic counterpart *Marche funèbre composée pour les funérailles d'un grand homme sourd* (Funeral March for the Obsequies of a Great Deaf Man). In this work, Alphonse Allais notated silence as staves that were intentionally left empty. It is true that classical composers always include pauses as specifically inserted moments of silence, but the extension of sound language to an individual silent piece was then unknown. This theme has since recurred regularly in various new guises, and not only after 1952 when John Cage presented his famous *4′33″*. In 1919, Erwin



Erwin Schulhoff, *In futurum* (*Fünf Pittoresken, III*) (In the Future [from Five Pittoresques, III]), 1919

Schulhoff composed a music of silence with his piece *In futurum*, bringing to the auditors' attention that which was literally unheard of.

Schulhoff liked to conceive of his music as "music of the future" (*Zukunftsmusik*).[11] A similar concern pursued Ferruccio Busoni, who in his pioneering text wrote of "thrilling silence" that is "*in itself music*" (s e l b s t M u s i k).[12] In order to broaden harmonic regulation and vocal leading, he designed an extravagant musical cosmos with scales of up to 113 steps. His perspective on the musical and sound-

experimental possibilities offered by electronically generated sound is visionary. He picked up on perspectives for innovation in the use of media in music that instrument builders had already contemplated in 1886: the "unrestricted generation of sound through electricity"![13] Shortly thereafter, new mechanical and electromechanical instruments effectively made it possible for composers to transpose microtonal music into their compositions.[14]

One courageous renovator of established musical rules was the composer Erik Satie. Without making a distinction between serious music and light music, and without any compelling logic, he combined and repeated the elements of Gregorian, Neo-Greek, and salon music in random sequences, thus obtaining a sort of immobile, directionless, ambiguous "situational music"[15] that was free from metrical emphasis, melodic development, tension between consonance and dissonance, and expressive agogics. He conceived of his "furniture music" (*musique d'ameublement*) as background music, thus anticipating ambient music. In his composition for the stage spectacle *Parade* (1916–17), he integrated, on the initiative of Jean Cocteau, everyday sounds such as the clinking of bottles, a typewriter, a fog horn, an electric doorbell, revolver shots, and two sirens. It is highly likely that Jean Cocteau was inspired by the Italian Futurists.[16]

This was a movement within which, interestingly, it was not only musicians but also and above all visual artists and poets who were the driving force behind the overthrow of the established music system. They opened their eyes and ears to the sounds and noises of the everyday reality of big cities, of industry, or of the slaughter in the wars that they glorified.

The Art of Noise

In 1909, the Futurist Filippo Tommaso Marinetti published his legendary founding Futurist manifesto on the front page of the Parisian newspaper *Le Figaro*.[17] He declared noise to be the vector of the combat against the enemy to be destroyed: traditionalism. By this he meant above all the strictly rational positivism of the nineteenth century, which Romanticism, Symbolism, Impressionism, Cubism, etcetera had already opposed. The Futurist belief in the destruction of the old order through technology, speed, and progress was certainly alluring—even if the tone of parts of this and all subsequent Futurist Manifestos is insupportably totalitarian, sexist, racist, and glorifying of war. Artists, musicians, architects, writers, and filmmakers throughout Europe and as far as Latin America and Asia responded enthusiastically and were inspired to launch the so-called avant-garde. Marinetti's main contribution to the movement was in his capacity as impresario. It was not only his virtuoso handling of language, his striking poetic paintings, and his audacious tone, but also the organization and financing of Futurist exhibitions, open debates, and poetic performances, as well as the issuing and dissemination of Futurist publications that kindled enthusiasm for the movement. In "Il manifesto dei musicisti futuristi" ("Manifesto of Futurist Musicians"),[18] by the Italian musician Francesco Balilla Pratella, published in 1911 (in which Marinetti was a background collaborator), music schools, conservatories, and academies were declared to be deserts. In his "Manifesto tecnico della musica futurista" ("Futurist Music: Technical Manifesto"),[19] published a short time thereafter, he

suggested concrete musical remedies for renewal. These included micro-intervals, the use of untempered scales, polyphony, and a polyrhythm with simultaneous superimpositions. In terms of content, it was somewhat reminiscent of the writings of Ferruccio Busoni, so it was not quite as revolutionary as its highly eloquent register might lead one to believe. Absolutely revolutionary, however, was the Futurists' adoption of the musicalization of noise as a performance practice two years later.

In the 1910s and 1920s, Luigi Russolo, who was originally a painter, developed together with Ugo Piatti various instruments that he named "intonarumori" (noise-makers). His intention was to broaden the limited expressive potential of traditional instruments in Pratella's Futurist concerts. As he expressed it in his own manifesto, he wished to surmount "the monotony of the sensations and the stupid and religious swooning of the audience, drunk on experiencing for the thousandth time, with almost Buddhist patience, with elegant and fashionable ecstasy." "We will have fun," he wrote, "imagining our orchestration of department stores' sliding doors, the hubbub of the crowds, the different roars of railroad stations, iron foundries, textile mills, printing houses, power plants and subways."[20]

His instruments produced rumbles, bangs, whistles, snores, snorts, whispers, murmurs, buzzes, crackles, cracks, and creaks. New noise generators, some of which even exploited electroacoustics, were invented simultaneously in various parts of the world.[21] But Russolo conquered classical concert halls in Europe. Obviously he provoked hostility among those who regarded noise in the musical art as barbaric.[22] Self-proclaimed "saviors of music," such as the

historicizing composer Hans Pfitzner, campaigned with the argument of "Futurist peril" against these musical "subversives,"[23] and incidentally also against Ferruccio Busoni, who could not be accused of having any connection with the Futurists. Others, conversely, celebrated the concerts with enthusiasm and were influenced by certain aspects of them, and include Arthur Honegger, Maurice Ravel, Igor Stravinsky, or Tristan Tzara.

Piet Mondrian's analysis of the intonarumori after attending a concert in 1921 was highly critical, however. He concluded that this music merely appeared under a new guise but would actually be "old" as long as it was not conceived of as a "constructive art" but simply imitated the sounds of nature, and, as Russolo himself stated, played only "diatonic and chromatic melodies in all possible tones of the scale and in all rhythms."[24]

Creative Reutilization of Technical Media

Recognizing both the efforts of the Futurists and Mondrian's criticisms, László Moholy-Nagy made his own proposals from the early 1920s on for a "restructuring of sound" (see "New Form in Music"). He called for an artistic calibration of manual methods and modern technical means in order to eliminate reproduction, which "can be regarded for the most part as mere virtuosity."[25] The individual should instead "be educated to the *real* reception or creation of music."[26] Concretely, he encouraged to generate "new, hitherto unknown sounds and tonal relations"[27]

in order to find “[an own] special language” leading to “improvisations”[28] realized by engraving grooves onto the then most advanced recording technique, phonograph records (at the time made of wax). It is worth noting that Thomas Edison had already conceived the idea of using phonographs for the creative manipulation of recorded material in the 1870s. During demonstrations, he mixed and superimposed recordings, varied playback speed, added sound effects, and even played recordings backwards.[29] Moholy-Nagy’s ideas concerning the use of mass media technology are nevertheless pioneering. For example, twelve years prior to the appearance of Walter Benjamin’s legendary 1935 essay “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit” (“The Work of Art in the Age of Mechanical Reproduction”), he anticipated the dissemination of auditory art in the form of reproduced copies, independently of performers.[30] Unlike later critics of industrial reproduction techniques such as Theodor Adorno,[31] or even later Jacques Attali,[32] he did not bemoan the disappearance of the live performance experience, but recognized its emancipatory potential. Later, at the Bauhaus, he conducted several “experimental-laboratorial”[33] series of experiments using nails and drills on phonograph records to develop his own “groove script alphabet” and a “graphic and mechanical scale.” Some of these were transmitted orally, but no recordings exist. This fate was shared by many artists who integrated phonographs and phonograph records into their performances, for example in theater productions at the Bauhaus or the Dada spectacles in the Cabaret Voltaire.[34] In 1930, the composers Paul Hindemith

and Ernst Toch also used phonograph records as instruments in three *Originalwerke für Schallplatten* (Original Works for Disc). They played passages of music live on several turntables and manipulated them during playback with changes of speed and direction.[35]

Samples and Collages as Writing Systems

During the twentieth century, more and more artists became interested in using isolated sounds as samples in electronic compositions. An example presented in the exhibition is the sound film *Enthusiasm: Symphony of the Donbass* (1931) by Dziga Vertov. Vertov regarded this film as a noise symphony, composing it programmatically as a four-movement symphony developing themes and refrains of a musical narration. He was not interested in using imitative instruments, instead employing a specially constructed portable sound-on-film device to record the noises of modern life in the big city, of industry, of ports, of train stations, and so on. He later manipulated the soundtrack by means of montage and speed variations. Walter Ruttmann worked in a similar manner for his imageless film *Wochenende* (Weekend, 1930). He, too, recorded the sounds of the modern big city using film sound technology, subsequently fragmenting them and reassembling them into a half-narrative sound collage. Both Vertov and Ruttmann were almost twenty years ahead of the aesthetic of concrete music. In Ruttmann's work, technical recording even replaced preconstructed graphically notated composition.

Dziga Vertov, *Enthusiasm: Symphony of the Donbass*, 1931

Dyr-bul-shchyl

A technique of a completely different kind, using the body as an instrument, offered diverse possibilities for experimenting with the sounds and noises of language. A young generation of poets from Moscow and Saint Petersburg had already attempted, a few years before the appearance of Marinetti's founding manifesto, to exploit spoken sounds above and beyond their role as conveyors of meaning.[36] From the 1910s on, groups such as the Ego-Futurists, the Mezzanine of Poetry, the Centrifuge, the Company 41°, and the Hylaea group (later Cubo-Futurists) in Russia identified with Futurist concepts and radicalized their own experiments. They dedicated their investigations to the exploration of the sound and rhythm of words and letters "as such."[37]

Their first and best known manifesto was published in 1912 under the title “Slap in the Face of Public Taste.” It contained sentences like “We are enthralled by new themes: superfluousness, meaninglessness, and the secret of powerful insignificance are celebrated by us.”[38] The poets eliminated all the elements that are usually crucial for logical language structure: punctuation, adverbs, adjectives, verbal conjugation, and syntax. They wrote poems such as *Dyr-bul-shchyl* (Aleksei Kruchenykh), invented experimental artificial languages such as the transrational Zaum language (Velimir Khlebnikov and Aleksei Kruchenykh), and the cosmic Star Language (Velimir Khlebnikov),[39] languages that would, by being “wild, flaming, explosive,” break the “manacles of everyday speech.” They aspired to contact “a world ‘beyond the mind state.’”[40] In their remarkable performances they declaimed verses, read manifestos and essays, gave concerts involving noise, and exchanged verbal and physical violence with the audiences. The frontiers of the stage space extended into life.[41] These poets also produced musical scores and poems that reveal a profound interest in the pictorial aspects of language. Written by hand, and therefore created by the body, they contain deliberate irregularities.

In Italy, the Futurist homeland of his oeuvre, Filippo Tommaso Marinetti also published an acoustic document, or rather a voice partition. In 1914, following on from his “Parole in libertà” (Words in Freedom, 1912),[42] he issued the artist’s book *Zang Tumb Tumb. Adrianopoli Ottobre 1912. Parole in libertà*. It consists in a visualization of his auditory impressions during the First Balkan War. The onomatopoeic typography and layout concretize the phonetic and acoustic aspects of battle,

including the sounds of rifle shots and explosions. These text images, vaguely reminiscent of the work of Stéphane Mallarmé, rupture the linear reading of ordered words and letters within the page space, which instead gives way to a dense, pictorial choreography.

Dada

Approaches of this kind received new but anti-militaristic impetus in 1916, when Hugo Ball and Emmy Hennings, along with Hans Arp, Richard Huelsenbeck, Marcel Janco, Sophie Taeuber, and Tristan Tzara, among others, founded the Cabaret Voltaire in Zurich. This became the cradle of the Dada movement, which had been preceded by similar movements in Russia and the United States,[43] and would be followed by offshoots in several cities in Western and Eastern Europe. Dada, a revolt against the laughable conventionality of a rationally determined world and language, was founded from the outset on the blurring of boundaries between forms, genres, and professions. Accordingly, the artists integrated literature, music, recitation, cabaret, dance, and visual art into their stage productions, of which the bases were movement, sound, and noise. Among their most significant creations were the purely phonetic sound poems (also referred to as syllabic, tone, or noise poems) that Hugo Ball, dressed in a bishop's costume that made movement impossible and standing in front of a music stand, declaimed on several occasions in the Cabaret Voltaire.[44] Out of these performances evolved Richard Huelsenbeck's desolate noise poems accompanied by large bass drums and Tristan Tzara's simultaneous poems.

From 1918 on, the "Dadasoph" Raoul Hausmann, a connoisseur of the Russian and Italian Futurists,[45] transformed noise poetry into a destructive and subversive "lettrist-optophonetic" poetry with the aim of bringing language, which he perceived as having become artificial, back to the creatureliness of human vocalization.[46] His poster poems, developed in parallel, constitute a kind of musical score for this poetry. Differing from Marinetti's work, his notation is the result of a typography composed randomly by the typesetter, described as "a great *écriture automatique*, automatic writing with question marks, exclamation marks, and even a pointer."[47]

The integration of chance into the creative process as an alternative to ostensibly well-calculated and deliberate composition and interpretation was a theme that already interested Marcel Duchamp in 1913 when he used its potential in his piece for three voices *Erratum Musical*. He wrote three times twenty-five notes individually on cards. Each set of cards was placed inside a hat and the cards removed one by one at random. The cards, or rather notes, were then sung or played following the order in which they had been taken out of the hat.

That the history of acoustic experimentation is also a media history is corroborated in Raoul Hausmann's attempts, in his capacity as an artist-engineer, to invent technical apparatuses to unite sound and image. Arndt Niebisch reviews these experiments in his text "Sounding Images | Visual Sounds: On the Development of Multisensorial Art," placing them in the context of previous and subsequent technical media projects.

Dodecaphonists

Raoul Hausmann was for a time in close contact with the Merz artist Kurt Schwitters, and they inspired one another mutually. Schwitters interpreted some of Hausmann's poster poems in his *Sonate in Urlauten*, created between 1922 and 1932. The piece's structural similarity to a classical sonnet provoked scathing criticism from Hausmann,[48] although others like Hans Arp acknowledged the contemporaneity of the "Ursonate": "The sounds he made were superhuman, seductive, siren-like; they might have sparked a new theory, like the twelve-tone system."[49] Using a method similar to that employed in his collages, Schwitters assimilated in this ambitious language experiment fragments from the world of advertising, children's poetry, or popular music, liberating them from their original functions within the profane language system. The "Urlaute" are suspended beyond traditional semantics as entirely autonomous entities in an intermediary space between language and noise, speech and singing, writing and image. Both the scores[50] and the early sound documents[51] illustrate this vividly.

New Intermedial Fusions

This summary of the first decades of the twentieth century up until this point has demonstrated the inventiveness of artists, poets, and musicians in their forays into new acoustic worlds beyond established musical, literary, and spoken language. But while their artistic strategies were varied and contrasting, the media

available to them for the execution of these strategies were limited. They adopted, transformed, and extended all the techniques at their disposal, but ultimately two techniques predominated when it came to the production of heretofore unexplored sound phenomena: machines, defined by technology; and the voice, defined by the body. These two approaches existed in parallel, although together they might form a whole that was very much like a new and independent sound entity. With the wide availability and user-friendliness of new technical storage and editing media, and specifically multitrack magnetic tape devices beginning in the 1950s, significantly closer relationships between different media could come into being. Body and technology, acoustics and writing, sound and space, invention and outcome, and other aspects of sound production could become equiprimordial. Just when it seemed that no expansion or growth of these already extremely borderless sound experiments was feasible, it became possible for produced or found sound to be recorded, filtered, cut into pieces, combined, collaged, layered, given rhythm, and, thus distorted, wrought into abstract sound. This was the dawning of a new era of experimentation.

Electroacoustic Experiments

As demonstrated by the examples of Dziga Vertov and Walter Ruttmann, technological sound collages of noise recordings had already been produced before the invention of tape recorders. The eclectically inspired engineer Pierre Schaeffer had initially experimented with wax records before the availability of magnetic tape.

In 1936, he began an extensive series of experiments involving fragments of everyday sounds, phonetic sounds, and music. Like a DJ, he manipulated sound samples on the turntable using speed variation, locked groove playback, reverse playback, fragmentation, and superposition, elevating his compositions into a class of their own in terms of aesthetic singularity, textures, and rhythms. Suppressing associations and references to the origins of his “objets sonores,” he laid the foundations for what he later named *musique concrète*. When an electroacoustic radio studio with the latest magnetic tape technology became available in the early 1950s, the tone of his works became purer and more defined. In collaboration with the musician Pierre Henry and the Groupe de Recherche de Musique Concrète (later Groupe de Recherches Musicales), among others, he extended the possible combinations of electronically produced tones and rhythm into infinity. Composition, as in the work of Moholy-Nagy and Ruttmann, now existed as an independent entity without pre-existing notations or score. Schaeffer considered this an act of emancipation from the dictates of the Schönberg school.[52] During this period, numerous recording studios emerged in cities throughout the world. In most of these schools, however, the tradition of composed music was merely applied to electroacoustically generated sounds, resulting in so-called serial music.

The Electronic Poeticizing of the Space

One of the composers who experimented in Pierre Schaeffer’s Paris studio in the 1950s was Edgar Varèse,

Studio of the Groupe des Recherches Musicales in Paris, 1962

who knew Erik Satie and Ferruccio Busoni, and who, from the beginning of his career in the 1910s, found it "difficult or impossible to express oneself through existing media."[53] He thereafter strove to "enrich" "our musical alphabet."[54] The youthful experiments of Hermann von Helmholtz had already furnished him with arguments for integrating the entire range of sounds into his music. He no longer called his compositions "music" but rather "organized sound."[55] He also incorporated the first electronic instruments into his pieces, such as the Theremin, introduced by the Russian engineer Lev Termen (Leon Theremin) in Paris in 1927, or the musician Maurice Martenot's *ondes*

musicales (“musical waves”). In 1954, his “Déserts,” produced in Schaeffer’s Studio, provoked one of the most impressive scandals in music history (the piece was frenetically acclaimed in other countries[56]). After having composed this visionary piece, the Parisian recording studios refused to let Varèse work there again. When he was asked by the architect Le Corbusier to compose a sound work for the temporary pavilion, initiated by the electronics company Philips for the first postwar World’s Fair in 1958 in Brussels, he realized it in the Philips studio in the Netherlands. The result was the site-specific *Poème électronique*. By means of 425 loudspeakers coordinated using telephone technology it created a spatial sound route in accordance with the layout of the pavilion. It was part of a multimedia spectacle for the visitors that intended to illuminate the “story of all humankind.” Its images followed a concept of juxtapositions of the intuitive vs. the rational, the emotional vs. the logical, the primitive vs. the advanced, and so on. Varèse’s music reflected this with contrasts of meaningful, concrete sounds vs. synthesized, abstract sounds.[57] More complex than this rather restrictive approach was basically Xenakis’s multicentric pavilion architecture and also his cloudlike composition *Concret PH*, which was played at its entrance and exit.

In the 1930s, Varèse had planned a joint project with Antonin Artaud. The latter interestingly described already the interaction between action, voices, movements, and lighting as a dynamization of space through sound.[58]

Hieroglyphs of the Body

Artaud's seminal work *Le Théâtre et son double* is a critique of the phony and asphyxiating "respect for what has been written, formulated, or painted, what has been given form."[59] He confronted the narrow functioning of conventional discourses of civilized society and high culture with what he named "hieroglyphs."[60] He referred to, among other forerunners, the poets of Lettrism and Ultra-Lettrism, the Beat Generation, sound poetry and action poetry. New technical editing possibilities offered by magnetic tape facilitated complex and intense sound experiments based on the physicality of speech.[61] Now, the limits of the body could be transcended. Language was definitively surpassed in favor of sound and noise. This process is examined more closely in this catalogue by Christina De Simone for the physical aspect and Arndt Niebisch for the technical one.

Ingenious Dilettantes

The appropriation and manipulation of magnetic tapes also offered artists infinite potential to blast away the boundaries of musical conventions. Jean Dubuffet, known for his criticism of the "organized boredom" of the sterile "arts culturels," used this approach as a weapon against the imperative of competence, which was nothing but "unnecessary theoretical knowledge" that "generates cascades of notes so that we can hear what we do not feel."[62] He made music on indigenous flutes and plucked string instruments with the

Maghrebis in the Algerian Sahara. In the early 1960s with Asger Jorn (and later others), he improvised sounds, sometimes using the voice, sometimes employing homemade, non-European, traditional, popular, or classical instruments and curious noise generators that were so "frayed" and "dirty," as he put it, that any attempt at musical theory became effectively impossible. Asger Jorn had already reflected twenty years previously that the ability to play false notes was generally "one of the greatest musical tours de force."[63] He called their joint production *Musique phénoménale* (1961), released on four records, "chaosmic."[64]

Subsequently, both artists technically manipulated their improvised experiments. At the time of recording, they already consciously integrated over- and undermodulation. They then edited the recorded material using speed variations, distortions, overlap, layering, and montage. The listening experience was constantly interrupted by "abrupt cuts—which in the first tapes were at times carried out with adhesive tape—sudden beginnings, truncated conclusions."[65] The sound material itself was a productive creative element and no attempt was made to disguise the manipulations of the magnetic tape, as if the unprocessed origins of the sound pieces had to be exposed. In the same way that the two artists crystallized the forms in their visual works with dense, paste-like paint application and the integration of substantial materials into their paintings, so their music was the consequence of numerous interventions in the domain of the raw material of recording technology.[66]

Jean Dubuffet and Asger Jorn belong to the category of artist that did not acquire an appellation until the 1980s, invented with reference to the punk,

Asger Jorn and Jean Dubuffet, *Musique phénoménale*, Edizioni del Cavallino, Venice, 1961

Jean Dubuffet, *Musical Experiences*, Finnadar Records, New York, 1961

noise, and techno scenes, but which had existed long before: the "ingenious dilettante" (*Geniale Dilletanten*).[67] Alongside these two artists, I would also include Karel Appel, some artists from the Fluxus milieu, Dieter Roth, Joseph Beuys, the punks, and the Bruitists. They counteracted with virtuosity the musical hierarchies of competence and expertise and considered the supposedly false to be "more than right."[68]

Karel Appel is known for maltreating and besmearing his canvases with rhythmical strokes applied with trowels, scrubbing brushes, paintbrushes, and fingers. He carried out similar feats in the acoustic domain in his "Musique barbare," striking a kettledrum with concentrated vehemence while shouting repeatedly "I do not paint, I hit!" Ed van der Elsken's photos show the passion and the fury, the liberation, and the desperation of the artist during the enactment of this music. Appel exploited the technical editing possibilities offered by the recording tape to intensify the dynamic of his performance.

George Brecht, *Music Is What You Are Listening To At This Moment*, 1989

“Music is what you are listening to at this moment”[69]

The artists in the ambit of the heterogeneous Fluxus network were less flamboyant.[70] Many (Yoko Ono, Nam June Paik, Al Hansen, Ben Patterson, or Joe Jones, for example) had had classical music training. Many (George Brecht, La Monte Young, Al Hansen, Dick Higgins, Jackson Mac Low, Toshi Ichiyanagi, Yoko Ono, Allan Kaprow, or George Maciunas) had attended John Cage’s courses at the New School of Social Research in New York. In this respect, the term “ingenious dilettantes” might appear ill chosen. But the way in which these artists undermined their acquired knowledge with consciously calculated insufficiency in order to thwart the classical concept

of the work of art as an individual manifestation of a carefully composed whole, instead making principles like aleatoricity, absence of intention, simplicity, uncertainty, or indiscriminateness the themes of their work, can only be described as ingenious. Often they parodied specialized musical vocabulary. Their first manifestations in 1962 were already described as "International Festival[s] of the Newest Music." Fourteen concerts were staged under their auspices, called "symphonies" or "sonatas." A grand piano was rendered sonorous without using the keys. They smashed instruments to pieces (as the Vienna group had already done in 1959), corresponding either to a pre-planned "composition" or to a Situationist action. Not only what one heard but also what happened had now become music.

Of all these artists, George Brecht was the master of the minimalist gesture. Like many others in the movement, he wrote verbal event scores (partitions) for micro-events, isolating everyday occurrences that he considered to be "an extension of music."[71] He succeeded in making the ostensibly meaningless, the unnoticed, and the absurd in our everyday lives stand out. Trivial details of the musical life such as handshakes between performers, the bow of the pianist or the conductor, or the positioning of a vase of flowers on the piano became major considerations for him. In his legendary *Drip Music* (1959–62), he declared that the sound of dripping water was a concert.

Nam June Paik combined Eastern philosophy and Western avant-garde. His sources of inspiration included John Cage's incorporations of everyday noises and random operations, Schaeffer's or Stockhausen's electronic musical compositions, K. O. Götz's electronic

paintings, and Wolf Vostell's dé-coll/age techniques. Paik's interactive work-in-progress total event *Exposition of Music—Electronic Television* (1963), which extended over several days, has become legendary. It consisted in various experimental configurations that took up the entire house of his Wuppertal gallery owner: the head of a slaughtered ox above the entrance, a display mannequin in the bathtub (both appropriations of Surrealist tendencies), thirteen dissected or demolished pianos, relics of his actions, mechanical sound objects, record installations as well as television sets, some of which could be supplied with music or distorted pictures by the public.[72] The conversion of passive, receptive media into instruments that could be played remained a major theme in his work in the wake of this action.

Nam June Paik, Toshi Ichiyanagi, and Yoko Ono helped transmit the ideas of Fluxus to the musicologist Mieko Shiomi, founder in 1960 of Ongaku, an experimental music group for performance and concrete music in Tokyo. Her *Spatial Poems*, executed over a period of ten years beginning in 1965, were pioneering works of mail art.

The project consisted in a series of nine events in which Mieko Shiomi invited artists from all over the world to write down a word on a specific theme and to leave it in a place of their own choosing. She regarded this action as a way to transform the entire world "into a stage" and, using postal communication, "to perform the same event with people in many countries, each implementing the piece in his or her own way."[73]

The musician Joe Jones, who had studied with John Cage and Earle Brown, began in 1962 to collect old equipment and parts with which he constructed music

machines. These were extraordinary sound sculptures, or rather entire sound orchestras of self-constructed objects and classical instruments, sometimes in the form of musical boats, solar music canopies, or pedal vehicles. Suspended, certain motorized music devices seemed to dance all by themselves. In 1969, he created a musical installation in the window of his music shop that passersby could play using a keyboard situated on the exterior. His compositions are poetic pieces, like sound tapestries, full of playful nonchalance. Their nature lies somewhere between unpredictable improvisation and mechanical rhythmics and they are constantly interrupted by surprising pauses, rhythm changes, superimpositions, and variations.

The artist, poet, and inventor Robert Filliou also collaborated with the Fluxus artists. Inspired among other things by Buddhist philosophy, the anti-capitalist

Mieko (Chieko) Shiomi,
Spatial Poem No. 1, Word Poem, 1965

principles of John Stuart Mill, or the experimental pedagogy of Célestin Freinet, his multiform oeuvre makes manifest the paradoxes of rational logic and knowledge. He dreamed of the "invention of a musical instrument," called the "harmonisatorium."[74] His publication *Musical Economy No. 5* (1980–83) included three pages of drawings of music stands which hold sheet music bearing the names of plants, descriptions of different professions, or terms from the classical theory of elements. Like the eponymous installation (*Musical Economy*, ca. 1971) in which everyday objects were attached to music stands, these pages represent a subtle, rich, creative harmony that stands in radical opposition to the political economy and its capitalistic principles of efficiency and profitability.

Nichtmusik,
Nochnichtmusik,
Nichtmehrmusik

Dieter Roth was for a while also in more or less close contact with some of the artists connected with the Fluxus movement. Actually, he was a kind of countermodel to these artists, who elevated unspectacular purism and laconic minimalism to the status of doctrines. He imposed as a concept the radical destruction of the boundaries of space and time, producing works based on the principle of "quantity not quality," and his music too was a relentless, unselective accumulation of sensations that he allowed to happen rather than planned. Maybe it was because it was so easy for him to achieve perfect, concise results that he sought the opposite in his art. Nothing was

discarded. From mind-boggling excess through delicate sensitivity and amusing absurdity to unbearable boredom or miserable seediness, everything—and all that lay between—was documented. In 1973, this self-proclaimed "lover of classical music and … [its] would-be destroyer,"[75] along with artists associated with Vienna Actionism, created the music label Selten Gehörte Musik (Seldom Heard Music). They gave a number of concerts, which they released mostly uncut on records. With their collection of classical instruments, the artists' collective made audible a kind of "Nichtmusik, Nochnichtmusik, Nichtmehrmusik" (Not music, not yet music, no longer music),[76] along with discussions about their observations.

The artists also sought to nullify their competence and expertise with the help of alcohol so that they could "take advantage of the tension between what is aspired to (sound, for example) and the outcome of the effort,"[77] as one of the participants, Oswald Wiener, expressed it. Another participant, Gerhard Rühm, regarded these experiments as an investigative manner of rendering audible the functions of thinking and of making associations.[78] In any case, these amorphous concerts without boundaries were radical cures for all forms of normative constraint, even though—and possibly because—their titles parodied classical denominations, for example *Trauermarsch*, *Elfenreigen*, *Höllenfahrt*, *Romenthalquartett*, *Quadrupelkonzert*, *Splittersonate*, *Abschöpfsymphonie*, *Novembersymphonie*, *Bagatellen*, *R adio Sonate*, *Hundelieder* (Funeral March, Fairy Song, Descent into Hell, Romenthal Quartet, Quadruple Concert, Shattered Sonata, Siphon Symphony, November Symphony, Bagatelles, R adio Sonata, Dog Song). The outcome

of such incongruity can be astonishingly fascinating. A decade prior to these experiments, Dieter Roth had already incorporated the theme of music into his visual work. His multipart snare picture *Relief mit zwei Trompeten* (Relief with Two Trumpets, 1962) resembles the vestiges of an attempt to bring together music and painting. The production of actual pictures integrating musical elements began in the 1970s. Such objects grew into ever more luxuriantly proliferating accumulations of overlapping and intersecting pictures, paint, keyboard and string instruments, recording and playback devices, along with loud speakers and stocks of cassettes for visitors. Visitors are invited to play these works. The *Keller-Duo* (Cellar Duet, 1980–89), which he built spontaneously with his son Björn in the basement of the Kunstmuseum Luzern, conveys this inordinate desire for construction and play.

“Democracy must be sung”[79]

It would be audacious to call Joseph Beuys’s work ingeniously dilettantish, but there is hardly a better way to describe his involvement with music. In 1963, he began to collaborate with Fluxus artists and they inspired his first actions, into which he also integrated music. In the late 1960s, he detached himself from Fluxus but remained in close contact with Nam June Paik and Henning Christiansen and played concerts with them. The latter also composed the music for his actions. He considered music, like words and thoughts, to be a sculptural material. But the opposite was equally true: “One hears sculpture … before one sees it.”[80] As a

child he learned to play the piano, but he claimed that the less one practiced, the better the sound. Upright pianos and grand pianos are nevertheless important elements in his art, both as objects that he filled with materials, decorated with other objects, or sewed into felt, and as musical instruments in his performances with Christiansen or Paik. These concerts complied with his concept of anti-art, standing in opposition to classical music, which was consumed "like pork."[81] During such actions, he played pianos or violins and employed tapes of feedback and sound collages of everyday noise, voices, birdsong, siren howls, and electronic sounds, many including unintelligible guttural noises, wails, and screams.

That "the acoustic and sound element"[82] is a central aspect of his art is also true in the figurative sense if we take into account his comment on the hostility provoked by his uncompromising political positions: "Democracy must be sung."[83] He proved that it was unsingable in 1982 with his protest song "Sonne statt Reagan" (Sunshine not Reagan) [a play on words with *Regen*, the German word for "rain"—Trans.] protesting against the United States' rearmament policy. Likewise, the litany *Ja Ja Ja Ja Ja, Nee Nee Nee Nee Nee* (1968) performed with Christiansen and Johannes Stüttgen might be melodious and rhythmic but is anything but "masterly." The magnetic tape recording was issued as a multiple in a felt case. Felt, which along with fat and copper was a central material in Beuys's work, protected and warmed the sound document in conformity with his symbolic universe, retained its creative energies, and conveyed it into the intangible silence. Silence is a constantly recurring element in the work of Beuys, who was an admirer

Joseph Beuys, *Siberian Symphony*, performed during Festum Fluxorum/Fluxus/Musik und Antimusik/Das Instrumentale Theater, Staatliche Kunstakademie, Düsseldorf, February 2, 1963

of John Cage. For the multiple piece *Das Schweigen* (The Silence, 1973), he wrapped three copies of the eponymous cinema film directed by Ingmar Bergmann (1962), not in felt, but in zinc. He thus altered the film in three ways: he effectively immured its visual and auditory potential (silenced it); he retained its energies; while, on the other hand, he allowed them, via the metaphorical conductive capacities of the zinc, to leak out in new, abstract forms. Beuys also suggests this possibility with the pairs of words that he attached on metal plates to each of the film spools: “1 Hustenanfall – Gletscher+” (Coughing Fit—Glacier+), “2 Zwerge – Animalisierung” (Dwarves—Animalization), “3 Vergangenheit – Vegetabilisierung” (Past—Vegetablization), “4 Panzer – Mechanisierung” (Tank—

Mechanization), “5 Wir sind frei – Geysir+” (We are free Geyser+). These words seem to reflect the coldness and the menacing atmosphere of this film, dominated by the themes of illness and absence of communication, but also the possibility of a liberation therefrom as a result of the creative transformation of its energies to the point of eruption, as if from a geyser.

Self-Constructed and Self-Operated Noise

The idea that there was no conceptualism in music as there had been in the visual arts because sound is as such purely sensory is an oft-repeated preconception.[84] Also current is the contradicting viewpoint that music, and in particular Western classical music, is conceptual per se, because it exists as a notated idea and because its regulation system, based on mathematical calculation,[85] constitutes, so to speak, “a machine that makes the art.”[86] Such confusion arises from the impossibility of establishing a normative canon of Conceptual Art. This was already true of its historical manifestations in the 1960s in the works of Henry Flynt,[87] and is even more so today, since the emergence of a so-called New Conceptualism, which claims to be the catalyst of a “Gehalt-aesthetic turn” (*gehaltsästhetischen Wende*).[88] Conceptual art, music, and poetry are generic terms that are too vague to be used within the framework of this exhibition. One of the dimensions attributed to these forms, however, that of reflecting the institutional and sociopolitical conditions of their emergence and definition along with their codes and their modes of operating and functioning,

should be highlighted as a central characteristic of many of the works. As the pieces described above demonstrate, this aspect is fundamental to almost all of the artistic confrontations with acoustic material shown in this exhibition. The artists wanted to act at a critical distance from the institutional environment. Opposition, subversion, and resistance were not only actualized in their practices but also reflected in their writings and speeches. Such commentaries, programs, and discussions extended the boundaries of traditional artistic approaches to embrace description, communication, and criticism. What the artists called the liberation of sound (see above) was not automatically accompanied by an unconscious diving into sound, as a frequently encountered preconception would have us believe. The lofty argument that "sound missed the conceptual turn"[89] is completely false and is based on a level of sound art that did not surpass the magnification of atmospheric soundscapes. It is countered by the numerous works in which processes of construction, functioning, and operation are integral elements. To hear and contemplate them is to confront the questions: via what media and materials, with what energies, and against what resistance does their sound emerge, and what are the consequences of these conditions on the way it is received?

One of the best vehicles for such reflections is the self-referential work *Voice from the Loudspeaker (Tape-art 1)* (1975) by Vladan Radovanović. Allowing the loudspeaker to speak for itself, as it were—"you can hear me / this voice is in you / this voice is in the loudspeaker /this voice has nothing to do with the loudspeaker / this voice is where the loudspeaker is / this voice is where you are / this voice

is reaching your ears"—he makes manifest the position of the voice, the acoustic qualities of the words, and the functioning of the loudspeaker.

Robert Morris's *Box with the Sound of Its Own Making* (1961) is another essentially auto-reflective work. Sounds of hammering, sawing, and grinding issue from a simple cube of walnut wood. Neither the title nor the three-and-a-half-hour audio component of the work permit us to give this object an auratic charge, rather they emphasize the lengthy and perhaps even boring process of the production of art.

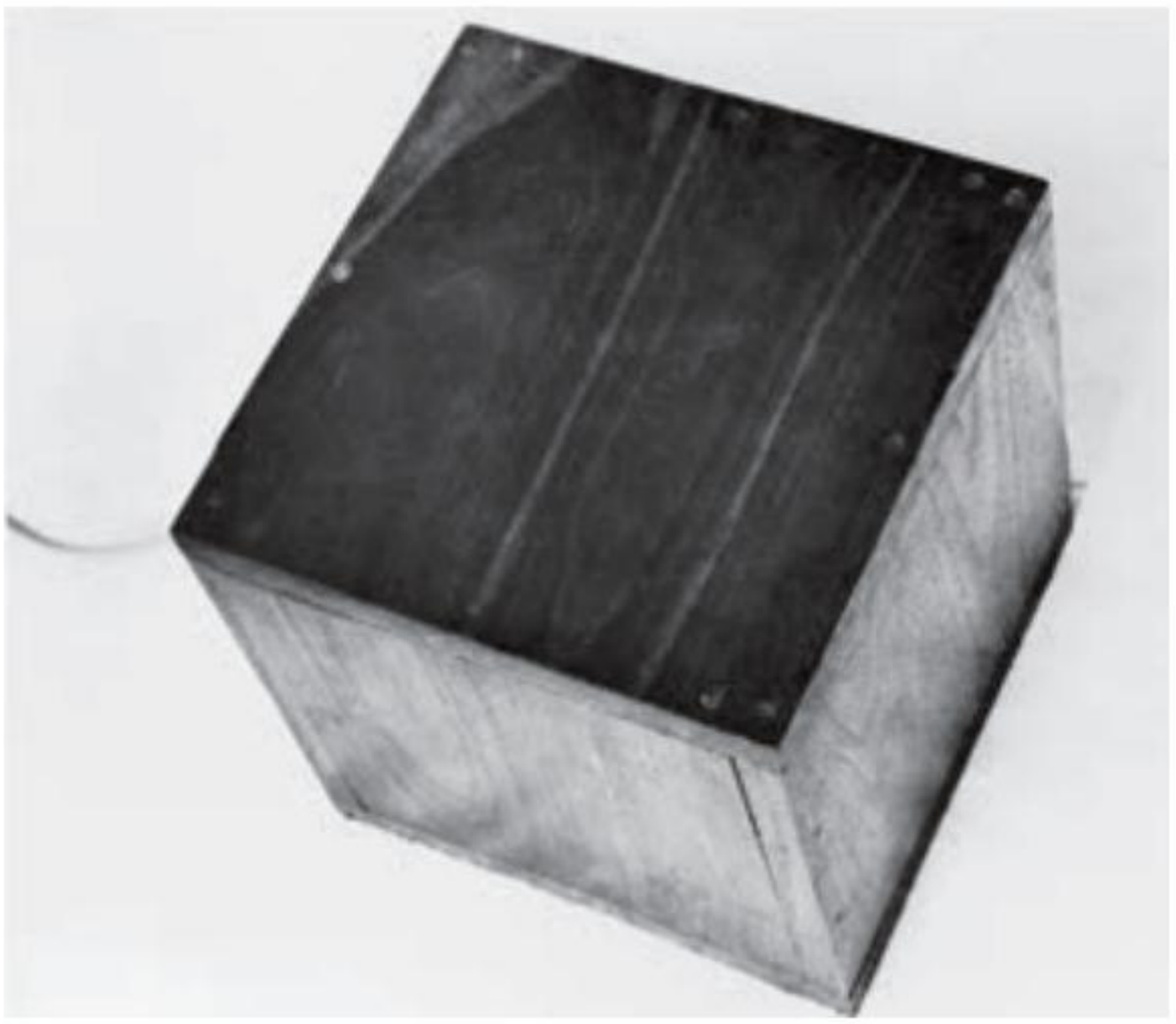
Ulises Carrión's piece *45 revoluciones por minuto* (45 Revolutions per Minute, 1977) was described as "the grooviest track ever created within the context of conceptual art."[90] It clearly reflects Carrión's passion for the meticulous exploration, comprehension, and rendering audible in record form of the process of generating music. Meanwhile, Guy Schraenen's film elucidates in visual form the simple rule brought to light in Carrión's piece.

Wende >80< (Turning Point >80<, 1980–81) by Hanne Darboven comprises eleven LP records and 416 pages of reproduced musical scores, tree studies, and text-photo combinations with extracts from political and literary writings. The work reflects two turning points (*Wenden*) in the year 1980: the political turning point represented by the overthrow of the Social Democrat government in West Germany; and an artistic turning point in Darboven's own work, when this trained piano player turned to musical composition.[91] She transformed numbers determined by time intervals into notes and had these transcribed into playable musical scores by a professional musician. Just a few notes of the composition suffice for us to understand the

essential ideas that underlie it. Thus emerges the "total abstraction of art," which she regarded as the "ultimate purpose of [her] work."[92]

In the early 1970s, Katalin Ladik created a series of collages from sheet music, dressmaking patterns, and pages from glossy magazines: all elements associated with womanly activities. She used these as scores, improvising on the ambiguous associations between the visual, semantic, and sound levels in her performances of sound poetry. Thus she had at her disposal a wide range of sounds that Henri Chopin called a "verbophonic orchestra."[93] Katalin Ladik's pictorial and performative works are not sound for sound's sake. Within the sound poetry community, they were perceived as reflecting the dictates of the conventional pictorial and linguistic norms of the totalitarian system

Robert Morris, *Box with the Sound of Its Own Making*, 1961



of the time and also as a possible positioning beyond such structures, where there was "an alternative to the contemporary realities of politics and religion."[94]

"No false tone"[95]

The exhibition culminates in a panorama of the loud, explosive, but celebrated incursions into the art and music systems of a reality that was otherwise used to regulation and repression. As an exaggerated repudiation of the "cultural subconscious" of Western accomplishments, some aspiring to be "no [longer] music,"[96] these incursions attacked the stability, tradition, and security and thus were perceived by some as a "tear in the social fabric."[97] Some even saw them as representing the dissolution of the avant-garde.

Katalin Ladik, *phonopoetica,*
Galerija Studentskog kulturnog centra, Belgrade, 1976

In the mid-1960s, Andy Warhol dynamited narrow concepts of musical culture with his multimedia *Exploding Plastic Inevitable* (*EPI*) spectacles (1966–67). These were, at the time, performances of the superlative, medleys of psychedelic slide and film projections, sadomasochism-inspired dance interludes, flickering strobe-light flashes, and the screeching guitar amplifiers, hammering percussion attacks, and driving bass rhythms of the Velvet Underground. The performances were designed to maximize physical and emotional sensation. Intellectual attempts to explain the phenomenon according to academic categories are scarcely adequate to define these complex happenings. Such approaches either vilify them as consumerist and passive, or glorify them as aesthetically pleasing rock lightshows. Neither does justice to the *EPI*.

With almost twenty years' hindsight, Dan Graham broke away from such superficial perspectives. His video documentary *Rock My Religion* (1982–84) is a collage of film material, quotations, and commentaries, including the juxtaposition of the physical and emotional rituals of rock music with scenes of Native American and Puritan religious dances. He thus suggests that there is a close relationship between rock music and religion. Rock is construed as a secularized religion with the potential to bring about a collective transcendental experience. Patti Smith, a central figure in the documentary, inspires in Dan Graham the theory that rock is a particular form of revolutionary politics that has replaced the endeavors of the artistic avant-garde to transcend convention.[98] Consequently, it is now mass culture that represents the repressed "other" of the artistic cutting edge. High and popular culture can no longer be categorically separated.

Raymond Pettibon's universe addresses this very question—and provides a completely different answer. An artist of the US West Coast scene, equally influenced by the popular culture of the Hollywood industry and by its counter- and subcultures, he makes reference in his text-image composites to the motifs of mass culture and emphasizes its underside, the inherent repression, failure, violence, and solitude. Interestingly, his work is consistently associated with the post-punk and hardcore scene, although he always stresses that while he has illustrated record sleeves, flyers, and posters (Panic, Black Flag, Sonic Youth, Foo Fighters, Minutemen, or Saccharine Trust), this aesthetic has not leaked into his art.[99] Since the idea has become established that rock is the new avant-garde, nobody seems to want to believe that there are still ways for trash and punk, but also for the overlooked aspects of culture, to be transcended with pen and paper. His recurring alter ego Vavoom shows that Pettibon believes this to be possible, standing atop a majestic mountain and shifting the elements in his capacity as artist-creator. As the caption states, here there can be "no false tone!"

Since sound was liberated more than a hundred years ago from the tight corset of music, criteria for categorically differentiating false notes from true notes have been completely shaken up. The vast universe of the audible has been transformed into an artistic material. Artists have experimented with all of its enthralling dimensions: from the low whispers of barely perceptible sound to eruptions of pandemonium that go beyond the already explored channels. They open our ears to a superlatively rich acoustic world that, by challenging the hegemony of the visual,

has rehabilitated our experience of listening to our environment. It is evident that silence, tone, sound, and noise are closely connected with our world of ideas. Martin Heidegger spoke of a constitutively functioning "listening thinking." This is not structured according to "the reason that has been extolled for centuries,"[100] but rather takes the form of empathy, respect, perception, devotion, affection, and imaginativeness in relation to what appears. It does not define ambiguous reality schematically, according to a narrow meaning, but manifests itself as an exploratory movement that "remain[s] underway."[101] The innumerable exciting experiments with tone and un-tone in art that have been conducted since the early twentieth century are today as relevant as ever. They can still incite us to question and to listen to what can give us matter for thought: the multifarious vibrations in the resonant spaces between ourselves and the world. A world that is sound.

1
Plato, *Republic*, in *The Dialogues of Plato*, vol. 2, trans. Benjamin Jowett (London: Oxford University Press), 38.

2
Ferruccio Busoni, *Entwurf einer neuen Ästhetik der Tonkunst* (Trieste: Schmidl, 1907); Eng.: *Sketch of a New Esthetic of Music*, trans. Theodore Baker (New York: G. Schirmer, 1911).

3
Ibid., 32; Eng.: 34.

4
The model of citizenship that developed with the evolution of the capitalist market economy in the eighteenth century represents the narrow stratum of civil servants and the propertied classes (judges, lawyers, professors, the clergy, teachers, and journalists, as well as salespeople, industrialists, bankers, managers, doctors), whose "belief in effort as the impetus for the individual life path and high esteem for education in its most varied facets" has been established. See Gunilla-Friederike Budde, "Musik in Bürgerhäusern," in *Le concert et son public. Mutations de la vie musicale en Europe de 1780 à 1914 (France, Allemagne, Angleterre)*, ed. Hans Erich Bödeker et al. (Paris: Éditions de la Maison des Sciences de l'homme, 2002), 428.

5
See Frank Hentschel, *Bürgerliche Ideologie und Musik. Politik der Musikgeschichtsschreibung in Deutschland 1776–1871* (Frankfurt am Main: Campus, 2006), 307.

6
Max Weber, *The Rational and Sociological Foundations of Music*, trans. Don Martindale (Carbondale: Southern Illinois University Press, 1978).

7
See Peter Schleuning, *Der Bürger erhebt sich. Geschichte der deutschen Musik im 18. Jahrhundert* (Stuttgart: Metzler, 2000).

8
See ibid., pp. 90ff. This instrument owed its success to a reliable ordering system that removes all impure sounds, which means that it sounds acceptable in a relatively short time. Moreover, to play it became the type of behavior that perfectly represented a "stereotype of good manners." So the piano was especially suitable for the musical training conceded to women. The "fair sex," sometimes also referred to as the "second sex," could play with grace and decorum while retaining a refined immobility and contributing to the sensorial recreation of male family members. The very immobility of the instrument ensured its continued use in the home (see Louise Otto-Peters, cited in Eva Rieger, *Frau, Musik und Männerherrschaft. Zum Ausschluss der Frau aus der deutschen Musikpädagogik, Musikwissenschaft und Musikausübung* [Frankfurt am Main et al.: Ullstein, 1981], 89). Criticism and mockery of this piece of furniture were already rife from the beginning of the nineteenth century. The music critic Eduard Hanslick referred in 1884 to a "piano epidemic" (Eduard Hanslick, "Ein Brief über die 'Clavierseuche,'" *Gartenlaube*, ed. Ernst Ziel, no. 35 [1884]: 572–75). And Heinrich Heine wrote in 1843 of being obliged to tolerate a "terrible artistic pleasure" involving piano music (Heinrich Heine, "The Musical Season of 1943," in *The Salon: Or, Letters on Art, Music, Popular Life and Politics*, [London: W. Heinemann, 1893], 374).

9
Busoni, *Entwurf einer neuen Ästhetik*, 35; Eng.: *Sketch of a New Esthetic*, 22.

10
See Andreas Reckwitz, "Vom Künstlermythos zur Normalisierung kreativer Prozesse: Der Beitrag des Kunstfeldes zur Genese des Kreativsubjekts," in *What's Next? Kunst nach der Krise*, ed. Johannes M. Hedinger and Torsten Meyer (Berlin: Kulturverlag Kadmos, 2013), 465.

11
Erwin Schulhoff, "[Werkstatt der Zeit. Ein Manifest]" (1919), in *Schriften*, ed. Tobias Widmaier (Hamburg: Von Bockel, 1995), 9.

12
Busoni, *Entwurf einer neuen Ästhetik*, 32; Eng.: *Sketch of a New Esthetic*, 23 (emphasis in original).

13
In *Zeitschrift für Instrumentenbau*, November 1, 1887, 46, cited in *Für Augen und Ohren. Von der Spieluhr zum akustischen Environment. Objekte, Installationen, Performances*, ed. René Block et al., exh. cat. Akademie der Künste ([West] Berlin: Akademie der Künste, 1980), 47.

14
See René Block, "Die Summer aller Klänge ist grau," in *Für Augen und Ohren*, ed. Block et al., 103–46.

15
Grete Wehmeyer, *Erik Satie* (Reinbek bei Hamburg: Rowohlt, 1998), 46ff.

16
See ibid., 93.

17
Filippo Tommaso Marinetti, "Le Manifeste du futurisme," *Le Figaro*, February 20, 1909.

18
Francesco Balilla Pratella, "Manifesto dei musicisti futuristi," in *I Manifesti del futurismo*, ed. F. T. Marinetti (Florence: Edizioni di Lacerba, 1914), 38–45; Eng.: "Manifesto of Futurist Musicians," in *Futurism: An Anthology*, ed. Lawrence Rainey et al. (New Haven: Yale University Press, 2009), 75–80.

19
Francesco Balilla Pratella, "Futurist Music: Technical Manifesto," in *Futurism: An Anthology*, 80–84.

20
Luigi Russolo, *L'Arte dei rumori* (Milan: n.p., 1913); Eng.: *The Art of Noise*, trans. Robert Filliou (New York: Something Else Press, 1967), 7.

21
See Andrey Smirnov, *Sound in Z: Experiments in Sound and Electronic Music in Early 20th-Century Russia* (London: Koenig, 2013).

22
See Daniele Lombardi, "Luigi Russolo und die Musikalisierung des Geräuschs," in *Futurismus: Kunst, Technik, Geschwindigkeit und Innovation zu Beginn des 20. Jahrhunderts*, ed. Irene Chytraeus-Auerbach and Georg Maag (Münster : LIT-Verlag, 2017), 77ff.

23
See Hans Pfitzner, "Futuristengefahr," in *Gesammelte Schriften*, vol. 1 (Augsburg: Filser, 1926), 185–223.

24
Luigi Russolo, cited in Piet Mondrian, "Die neue Gestaltung in der Musik und die futuristischen italienischen Bruitisten," *De Stijl* 6, no. 1 (March 1921): 1–9, 19–25; Eng.: "The Manifestation of Neo-Plasticism in Music and the Italian Futurists' *Bruiteurs*," in *The New Art—The New Life: The Collected Writings of Piet Mondrian*, ed. and trans. Harry Holtzman and Martin S. James (London: Thames and Hudson, 1986), 154.

25
László Moholy-Nagy, "Produktion – Reproduktion," *De Stijl* 5, no. 7 (1922): 98; Eng.: "Production—Reproduction," in *Moholy-Nagy*, ed. Krisztina Passuth (New York: Thames and Hudson, 1985), 289.

26
László Moholy-Nagy, "Neue Gestaltung in der Musik: Möglichkeiten des Grammophons," *Der Sturm* 14, no. 7 (1923): 104; Eng.: "New Form in Music: Potentialities of the Phonograph," in *Moholy-Nagy*, ed. Krisztina Passuth (New York: Thames and Hudson, 1985), 291.

27
Moholy-Nagy, "Produktion – Reproduktion," 99; Eng.: "Production—Reproduction," 289.

28
Moholy-Nagy, "Neue Gestaltung in der Musik," 106; Eng.: "New Form in Music," 291.

29
See Matthew Rubery, "Thomas Edison's Poetry Machine," April 23, 2014, *19: Interdisciplinary Studies in the Long Nineteenth Century*, no. 18, http://doi.org/10.16995/ntn.678.

30
See Moholy-Nagy, "Neue Gestaltung in der Musik," 104; Eng.: "New Form in Music," 291.

31
Theodor W. Adorno, "Über den Fetischcharakter in der Musik und die Regression des Hörens," *Zeitschrift für Sozialforschung* 7, no. 3 (1938): 321–56; Eng.: "On the Fetish-Character in Music and the Regression in Listening," in *The Essential Frankfurt School Reader*, ed. Andrew Arato and Eike Gebhardt (New York: Continuum, 1977), 270–99.

32
See Jacques Attali, *Bruits. Essai sur l'économie politique de la musique* (Paris: Presses universitaires de France, 1977); Eng.: *Noise: The Political Economy of Music*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1985).

33
See Moholy-Nagy, "Produktion – Reproduktion," 99; Eng.: "Production—Reproduction," 289.

34
See Anke J. Hübel, *Vom Salon ins Leben: Jazz, Populärkultur und die Neuerfindung des Künstlers* (Bielefeld: Transcript, 2015), 124ff.

35
See Mark Katz, "Hindemith, Toch, and *Grammophonmusik*," *Journal of Musicological Research* 20, no. 2 (2001), https://doi.org/10.1080/01411890108574786.

36
See Anna Lawton, ed., *Russian Futurism through Its Manifestoes, 1912–1928* (Ithaca, NY and London: Cornell University Press, 1988), 49.

37
See Aleksei Kruchenykh and Velimir Khlebnikov, "The Word as Such," "The Letter as Such," and "Declaration of the Word as Such," Moscow, 1913, partially reprinted in ibid., 57–62, 63–64, and 67–68.

38
David Burliuk, Elena Guru, Nicholas Burliuk, Vladimir Mayakovsky, Katherine Nizen, Victor Khlebnikov, Benedict Livshits, A. Kruchenykh, "Untitled," in *Russian Futurism*, ed. Lawton, 54.

39
So termed for the first time in Aleksei Kruchenykh and Velimir Khlebnikov, "Declaration of the Word as Such," Moscow, 1913, partially reprinted in *Russian Futurism*, ed. Lawton, 57–62.

40
Alexei Kruchenykh, cited in Gerry Souter, *Malevich* (New York: Parkstone International, 2008), 85.

41
See Lawton, *Russian Futurism*, 15.

42
See Filippo Tommaso Marinetti, "Distruzione della sintassi – Immaginazione senza fili – Parole in libertà" (May 11 1913), in *I Manifesti del futurismo*, ed. Marinetti, 133–46.

43
Possibly without knowing it, Dada already had a kind of precursor in Russia in the form of the Nitschewoken, ca. 1912–13, as well as in New York, ca. 1915, in the circle of Francis Picabia and Marcel Duchamp.

44
Whether Hugo Ball was inspired by his Futurist Russian predecessors is not clear. That he knew about Italian Futurism is evident in his diary entry of July 9, 1915: "Marinetti sends me *Parole in Libertà*... They are just letters of the alphabet on a page; you can roll such a poem like a map. The syntax has come apart. The letters are scattered and assembled again in a rough-and-ready way. There is no language any more." (Hugo Ball, *Flight Out of Time: A Dada Diary*, trans. Ann Raimes [Berkeley et al.: University of California Press, 1996], 25.) He published "Dune" from Marinetti's "Parole in libertà" alongside contributions from Guillaume Apollinaire, Hans Arp, Hugo Ball, Francesco Cangiullo, Blaise Cendrars, Emmy Hennings, Jakob van Hoddis, Richard Huelsenbeck, Marcel Janco, Wassily Kandinsky, Amedeo Modigliani, Max Oppenheimer, Pablo Picasso, Otto van Rees, Marcel Słodki, and Tristan Tzara in the sole issue (no. 1) of the eponymous journal published by Raoul Hausmann in Zurich, *Cabaret Voltaire*, June 1916.

45
Raoul Hausmann, "Zur Geschichte des Lautgedichtes," in *Am Anfang war Dada*, ed. Karl Riha and Günter Kämpf (Giessen: Anabas, 1980), 44.

46
Ibid., 33.

47
Raoul Hausmann, "Ein Porträtversuch," in *Am Anfang war Dada*, ed. Riha and Kämpf, 189.

48
See Reinhard Döhl, "*Fümms bö wö tää zää Uu...*" *Zu Kurt Schwitters: Sonate in Urlauten*, Radio essay, WDR III, April 13, 1993.

49
Hans Arp, cited in Werner Schmalenbach, *Kurt Schwitters* (New York: H. N. Abrams, 1970), 216.

50
Schwitters published this complex partition in an edition printed in Hannover by the typographer Jan Tschichold, *Merz* 24 (1932).

51
When, where, and with whom the first sound document was recorded is not known. The oft-quoted statement that Kurt Schwitters was expressly recorded by the Stuttgarter Rundfunk on May 5, 1932, has yet to be proven. There is much to suggest that the first recording was of a performance by his son Ernst Schwitters.

52
Pierre Schaeffer, interview by Tim Hodgkinson, *Recommended Records Quarterly* 2, no. 1 (1987).

53
Edgar Varèse, cited in Wolfgang Schreiber, "Vaterfigur der radikalen Nachkriegsavantgarde," *Deutschlandfunk*, November 6, 2015, https://www.deutschlandfunk.de/komponist-edgard-varese-vaterfigur-der-radikalen.871.de.html?dram:article_id=335993.

54
"Our musical alphabet must be enriched." *New York Telegraph*, March 1916, reprinted in Louise Varèse, *A Looking Glass Diary*, vol. 1: *1883–1928* (New York: W.W. Norton and Co., 1972), 123.

55
First mentioned in Edgar Varèse, "Le son organisé pour le film sonore" (1940), in *Écrits* (Paris: Christian Bourgois, 1983), 109.

56
Varèse commented, "On peut dire que, jusqu'à nos jours, la France a eu de grands musiciens. Mais elle n'a jamais eu de public musical." (One could say that, up to today, France has had great musicians. But France has never had a musical audience.) From a radio interview with Georges Charbonnier, ORTF, Paris, March–April 1955; re-released on CD: Edgard Varèse, *Création de "Déserts". Entretiens avec Georges Charbonnier* (Bry-sur-Marne: Institut National de l'Audiovisuel, 2007).

57
See Gascia Ouzounian, "Visualizing Acoustic Space," in "Musique *in situ*," *Circuit* 17, no. 3 (2007): 50–53.

58
See Antonin Artaud, "Il n'y a plus de firmament," in *Œuvres complètes*, ed. Paule Thévenin, vol. 2 (Paris: Gallimard, 1976), 91; Eng.: "There Is No More Firmament," in *Collected Works*, trans. Victor Corti, vol. 2 (London: John Calder, 1999), 79.

59
Antonin Artaud, *Le Théâtre et son double* (Paris: Gallimard, 1938), 79; Eng.: *The Theater and Its Double*, trans. Mary Caroline Richards (New York: Grove Press, 1958), 74.

60
Ibid., 11; Eng.: 61.

61
See Michael Lentz, "Musik? Poesie? Eigentlich...: Laut Poesie Musik nach 1945," *Neue Zeitschrift für Musik* 157, no. 2 (1996): 55.

62
Jean Dubuffet (1945), cited in Fondation Jean Dubuffet, "Dubuffet Musician," https://www.dubuffetfondation.com/focus.php?menu=37&lang=en.

63
Asger Jorn, *Heringe in Acryl. Heftige Gedanken zu Kunst und Gesellschaft* (1941), ed. Roberto Orth (Hamburg: Nautilus, 1993), 14.

64
Asger Jorn, text accompanying the recording *Musique phénoménale* (Venice: Galleria del Cavallino, 1961), n.p.

65
Andreas Wagner, "Jean Dubuffets *Musique phénoménale* und *Expériences musicales*," part 1 of "Ein Künstler auf der Suche nach einer anderen Musik," *Dissonance*, no. 85 (March 2004): 8.

66
Ibid., 9.

67
The expression is based on the originally and deliberately misspelled title of a music festival, "Geniale Dilletanten," organized in 1981 in the Berlin Tempodrom with punk, post-punk, noise, and techno groups, experimental rock bands, and groups of artists from West Berlin. In 1996, Wolfgang Müller, then a member of Die Tödliche Doris, adopted the title for his book about 1980s subculture.

68
Blixa Bargeld, front man of Einstürzende Neubauten and other groups, in Wolfgang

Müller, *Geniale Dilletanten* (Berlin: Merve, 1982), 7.

69
George Brecht, *Music Is What You Are Listening To At This Moment*, 1986 (Artist's postcard).

70
Ken Friedman, "Fluxus: A Laboratory of Ideas," in *Fluxus and the Essential Qualities of Life*, ed. Jacquelynn Baas (Chicago: University of Chicago Press, 2011), 35.

71
George Brecht, interviewed by Irmeline Lebeer, cited in Liz Kotz, "Post-Cagean Aesthetics and the 'Event' Score," *October* 95 (2001): 72.

72
Media Art Net, "Nam June Paik: Exposition of Music—Electronic Television," 2005, http://www.medienkunstnetz.de/works/exposition-of-music/video/1/.

73
See Dieter Daniels, "Vier Fragen an Mieko Shiomi," *Kunstforum International*, no. 115 (1991): 212–13.

74
Robert Filliou, from an interview with Georg Jappe, Kunstakademie Hamburg, 1984, http://www.donguy-expo.com/Filliou_b.html.

75
Dieter Roth, "Interview by Irmelin Lebeer-Hossmann," in *Dieter Roth: Collected Interviews*, ed. Barbara Wien, trans. Ishbell Flett (London: Hansjörg Mayer, 2002), p. 79.

76
Friedhelm Döhl, cited in Michael Kunkel, "'Und hoch das Amarteurenvolk!' Die Dieter Roth-Akten der Musik Akademie Basel," *Dissonance*, no. 123 (September 2013): 18.

77
Oswald Wiener, Program booklet for Berlin concert, 1974, typescript, unpaginated.

78
Gerhard Rühm, in conversation with Matthias Haldemann, Michel Roth, and Flurina and Gianni Paravicini, Cologne, September 11, 2013, https://vimeo.com/104283393.

79
Gerhard Theewen, "Joseph Beuys und der Humor," *Kunstforum International*, no. 120 (1992): 115.

80
Joseph Beuys, in conversation with Hagen Lieberknecht, in *Joseph Beuys: Zeichnungen 1947–59* (Cologne: Schirmer, 1972), 13.

81
Joseph Beuys, interviewed by Georg Jappe, cited in Jürgen Geisenberger, *Joseph Beuys und die Musik* (Marburg: Tectum, 1999), 134.

82
Joseph Beuys, cited in ibid., jacket blurb.

83
Joseph Beuys, cited in Theewen, "Beuys und der Humor," 114.

84
See, for example, Seth Kim-Cohen, *In the Blink of an Ear: Toward a Non-Cochlear Sonic Art* (London and New York: Bloomsbury, 2009).

85
See Diedrich Diederichsen, "Konzeptuelle Musik, konzeptuelle Popmusik," *Pop. Kultur und Kritik*, no. 5 (2014): 130.

86
Sol LeWitt, "Paragraphs on Conceptual Art," *Artforum* 5, no. 10 (June 1967): 80.

87
See Henry Flynt, "Conceptual Art," in *An Anthology*, ed. La Monte Young and Jackson Mac Low (New York 1963), n.p.

88
See Harry Lehmann, *Gehaltsästhetik. Eine Kunstphilosophie* (Paderborn: Wilhelm Fink, 2016); and Harry Lehmann, "Conceptual Music and the Gehalt-Aesthetic Turn," lecture at the 47th Internationale Ferienkurse für Neue Musik, Darmstadt, August 5, 2014, https://www.youtube.com/watch?v=OXsc8_KOViU.

89
See Kim-Cohen, *In the Blink of an Ear*, xx.

90
Boomkat, review of Ulises Carrión, *The Poet's Tongue*, 2012 (LP), https://boomkat.com/products/the-poet-s-tongue.

91
Kirsten Darboven, Hanne Darboven's mother, in an interview, cited in Florentine Gallwas, "Hanne Darboven," Hanne Darboven Stiftung, Hamburg, n.d., https://www.poolhaus-blankenese.de/projekte/darboven-hanne-loersch-phillip/.

92
Ibid.

93
Henri Chopin, *Poésie sonore internationale* (Paris: Jean-Michel Place, 1979), 254.

94
See Emese Kürti, *Screaming Hole: Poetry Sound and Action as Intermedia Practice in the Work of Katalin Ladik* (Budapest: acb ResearchLab, 2017), 101. Kürti here quotes Bob Cobbing.

95
Raymond Pettibon, cited in Michael Stoeber, "Raymond Pettibon," *Kunstforum International*, no. 185 (2007): 332.

96
Masami Akita and Russell Haswell, *Satanstornade* (Warp Records, 2002), n.p.

97
Attali, *Bruits*, 203.

98
See Dan Graham's eponymous text "Rock My Religion" (1981), on which the video documentary is based, in *Rock My Religion: Writings and Projects, 1965–1990*, ed. Brian Wallis (Cambridge, MA: MIT Press, 1994), 94.

99
Raymond Pettibon, in conversation with Ulrich Loock, "Das musikalische Element in meiner Arbeit hat nichts mit Rock-Musik zu tun," *Kunstforum International*, no. 134 (1996): 207.

100
Martin Heidegger, *Holzwege* (1950), in *Gesamtausgabe*, vol. 5: *Holzwege (1935–1946)*, ed. Friedrich-Wilhelm von Herrmann, 2nd ed. (Frankfurt am Main: Klostermann, 2002), 267; Eng.: *Off the Beaten Track*, trans. Julian Young and Kenneth Haynes (Cambridge: Cambridge University Press, 2002), 199.

101
Martin Heidegger, *Was heißt Denken?*, in *Gesamtausgabe*, vol. 8: *Was heißt Denken? (1951–1952)*, ed. Paola-Ludovika Coriando (Frankfurt am Main: Klostermann, 2002), 15, 50; Eng.: *What Is Called Thinking?*, trans. J. Glenn Gray (New York: Harper & Row, 1968), 19, 45.

DES SOUTENEURS, ENCORE DANS LA FORCE DE L'AGE ET LE VENTRE DANS L'HERBE,
BUVANT DE L'ABSINTHE

COMBAT DE NÈGRES DANS UNE CAVE, PENDANT LA NUIT
(Reproduction du célèbre tableau)

Alphonse Allais
Album Primo-Avrilesque,
Paul Ollendorff, Paris, 1897

STUPEUR DE JEUNES RECRUES APERCEVANT POUR LA PREMIÈRE FOIS TON AZUR.
O MÉDITERRANÉE !

RÉCOLTE DE LA TOMATE PAR DES CARDINAUX APOPLECTIQUES
AU BORD DE LA MER ROUGE
(Mer d'autrefois bientôt.)

INDIFFERENZA

DI 2 ROTONDITÀ SOSPESE

SOLE + PALLONE

FRENATI

fratelli d'Italia — abissi di luce — spasimi di tramonto

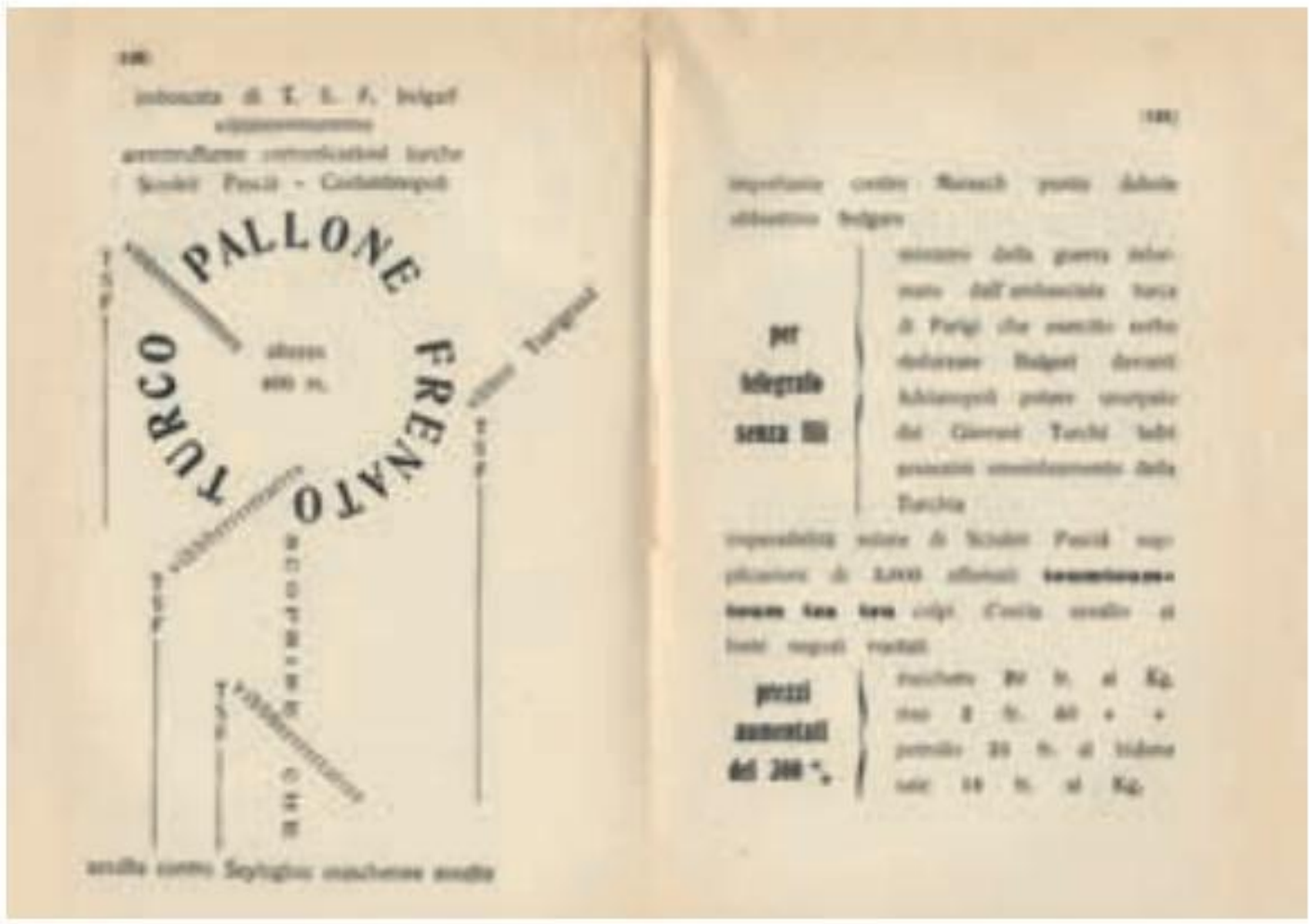
villaggi turchi incendiati

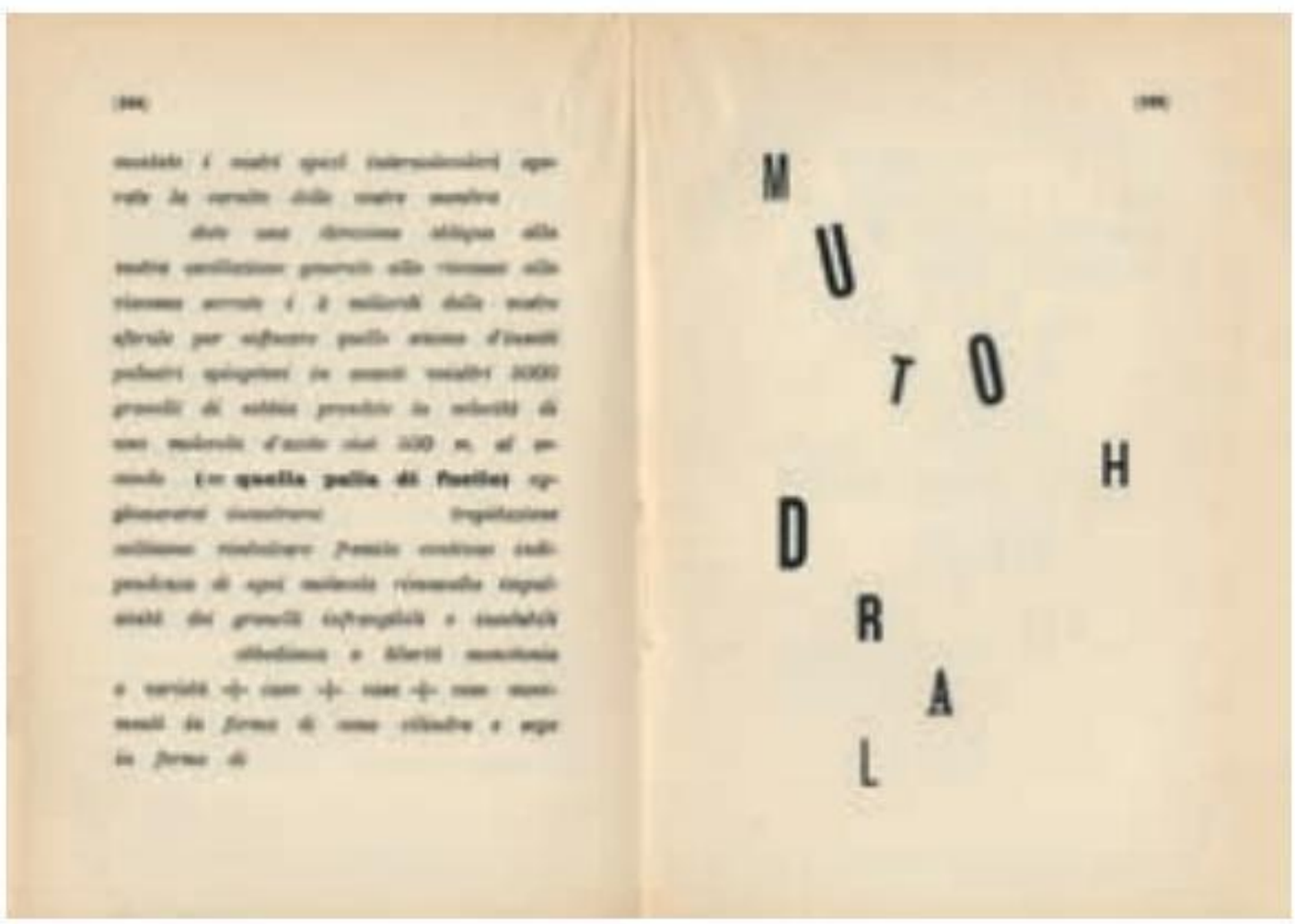
grande T

+ navi di marinai

(Manifesto futurista dell'occupazione bulgara di Adrianopoli fatto con 6,30 di area)

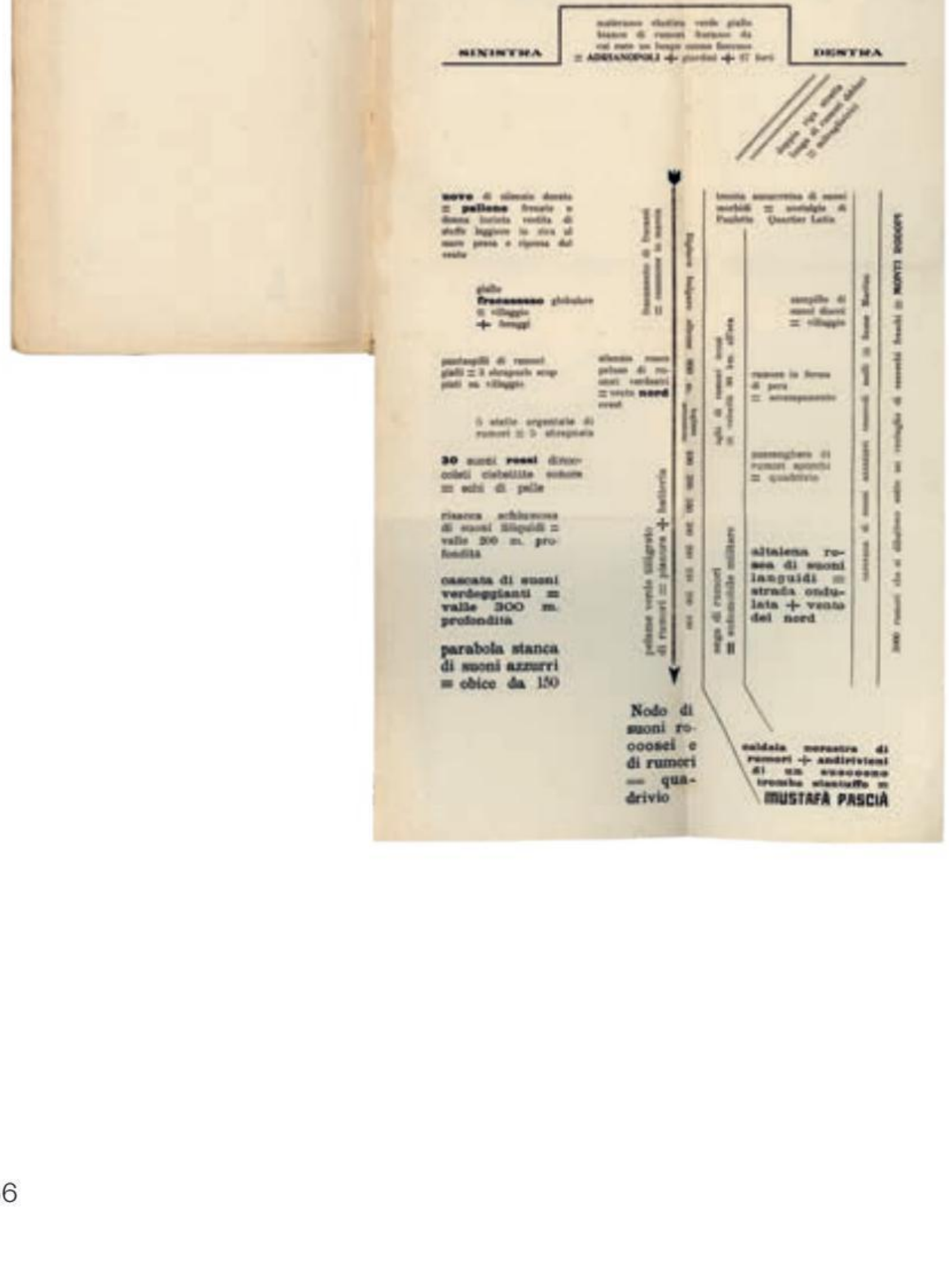
Filippo Tommaso Marinetti
Zang Tumb Tumb. Adrianopoli Ottobre 1912. Parole in libertà
Edizioni Futuriste di "Poesia,"
Milan, 1914

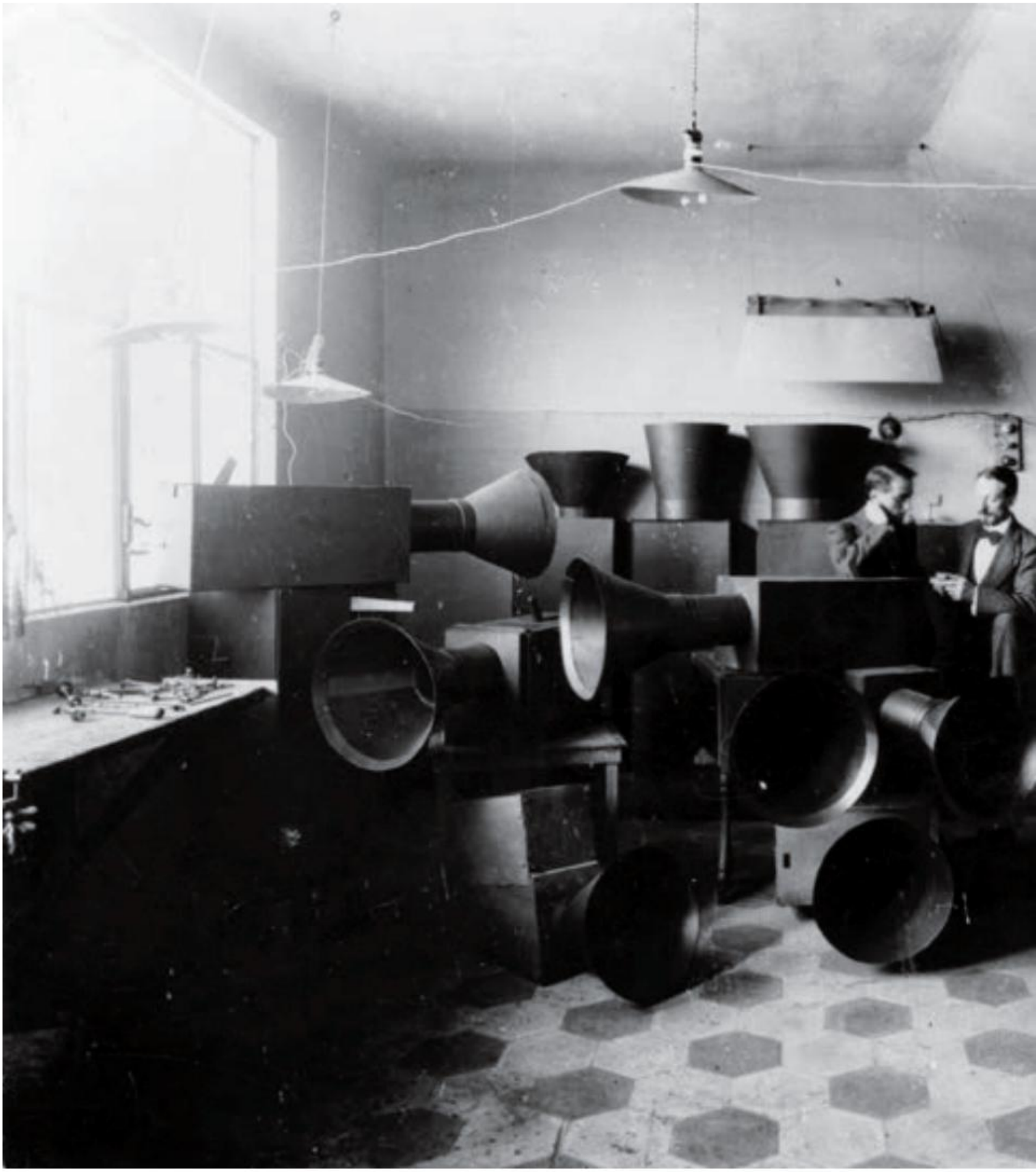

PALLONE
TURCO
FRENATO


MUTO
IDRAL

CARTA SINCRONA

dei suoni rumori colori immagini odori speranze voleri energie nostalgie tracciata dall'aviatore Y. M.





Luigi Russolo and Ugo Piatti in the “intonarumori” laboratory in Milan, 1913

Filippo Tommaso Marinetti
Les mots en liberté futuristes,
Edizioni Futuriste di "Poesia,"
Milan, 1919

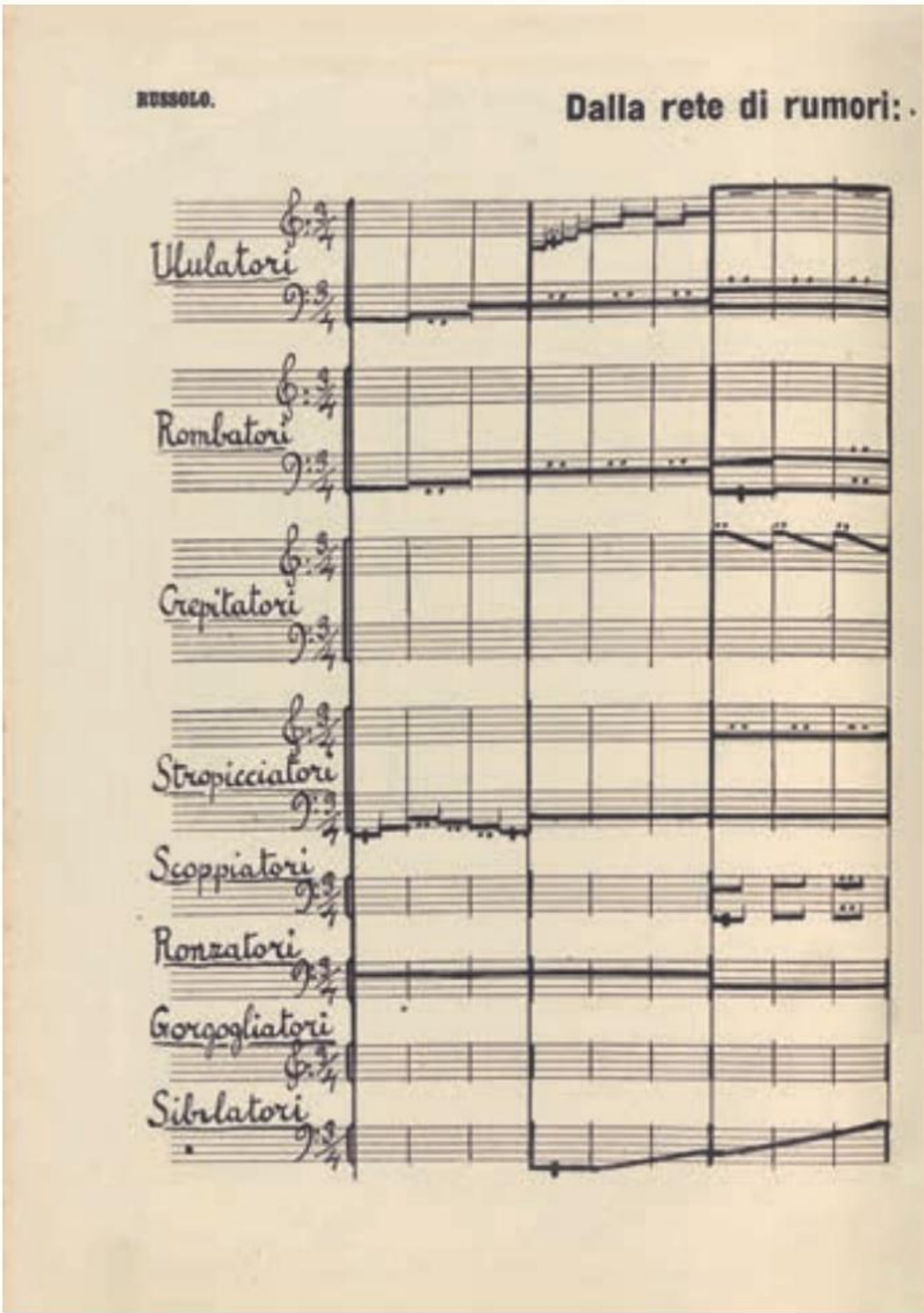

FRANCE
VIVE LA FRANCE
MORT AUX BOCHES
BEL
LE
GUERRE
PRUSSIENS
TOUM B TOUM
Mon Ami
LÉGER
LOURD
MaAA
AAaplic
Verbalisation dynamique de la route


SCRABrrRrraaNNG
futurista
GRAAA
TRÁSCHIII
SCHIII
SIMULTANEITÀ
ESPLOSIONE
verdi

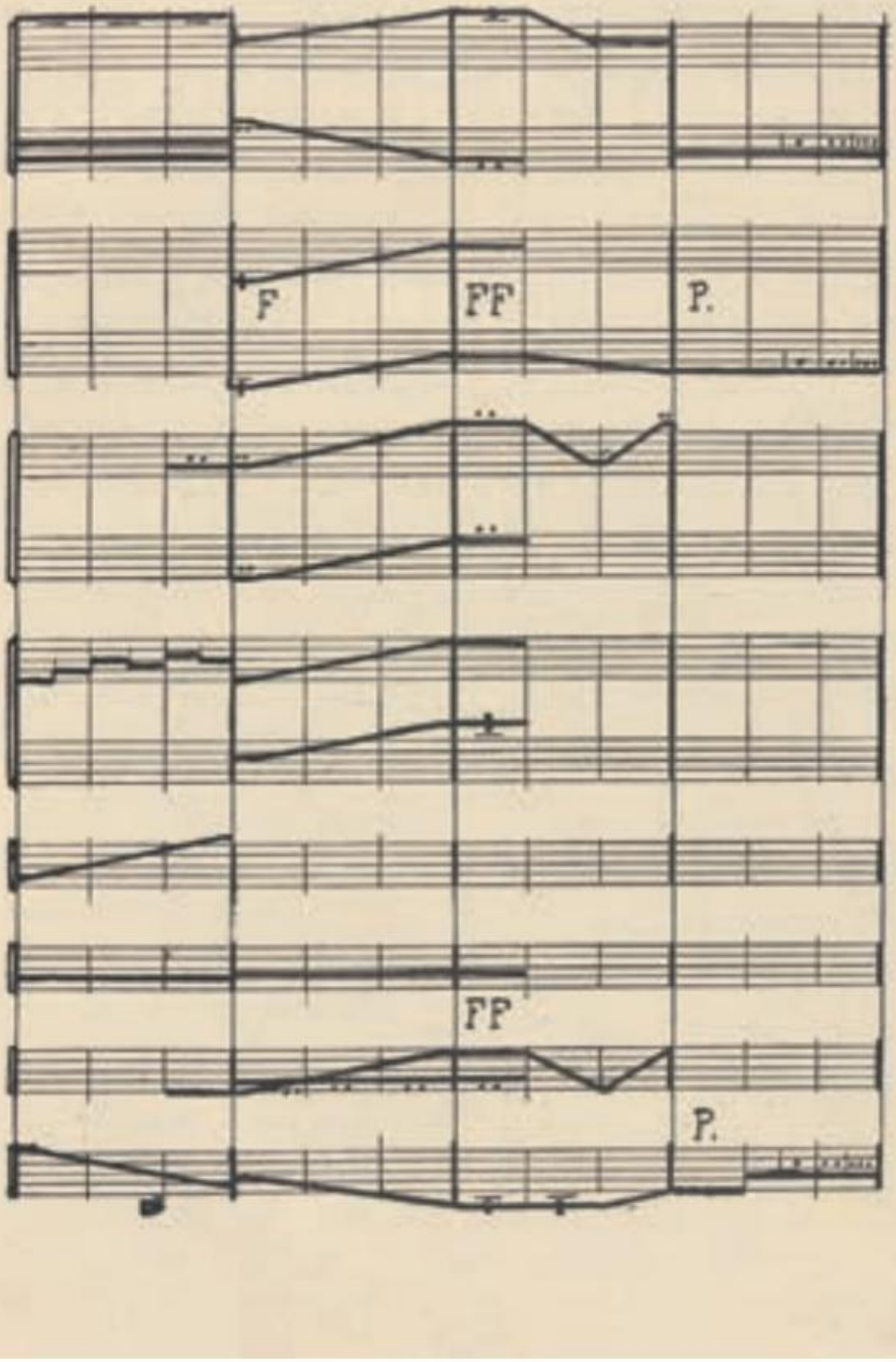

TA
MA
ANCHU
ZM
1918'918!
1
OZZ
5 mila
30 mila
del 100 per 100
1033.750.00
150.000.00
3400
1056
1300
1800
5000
30.000
2000
34

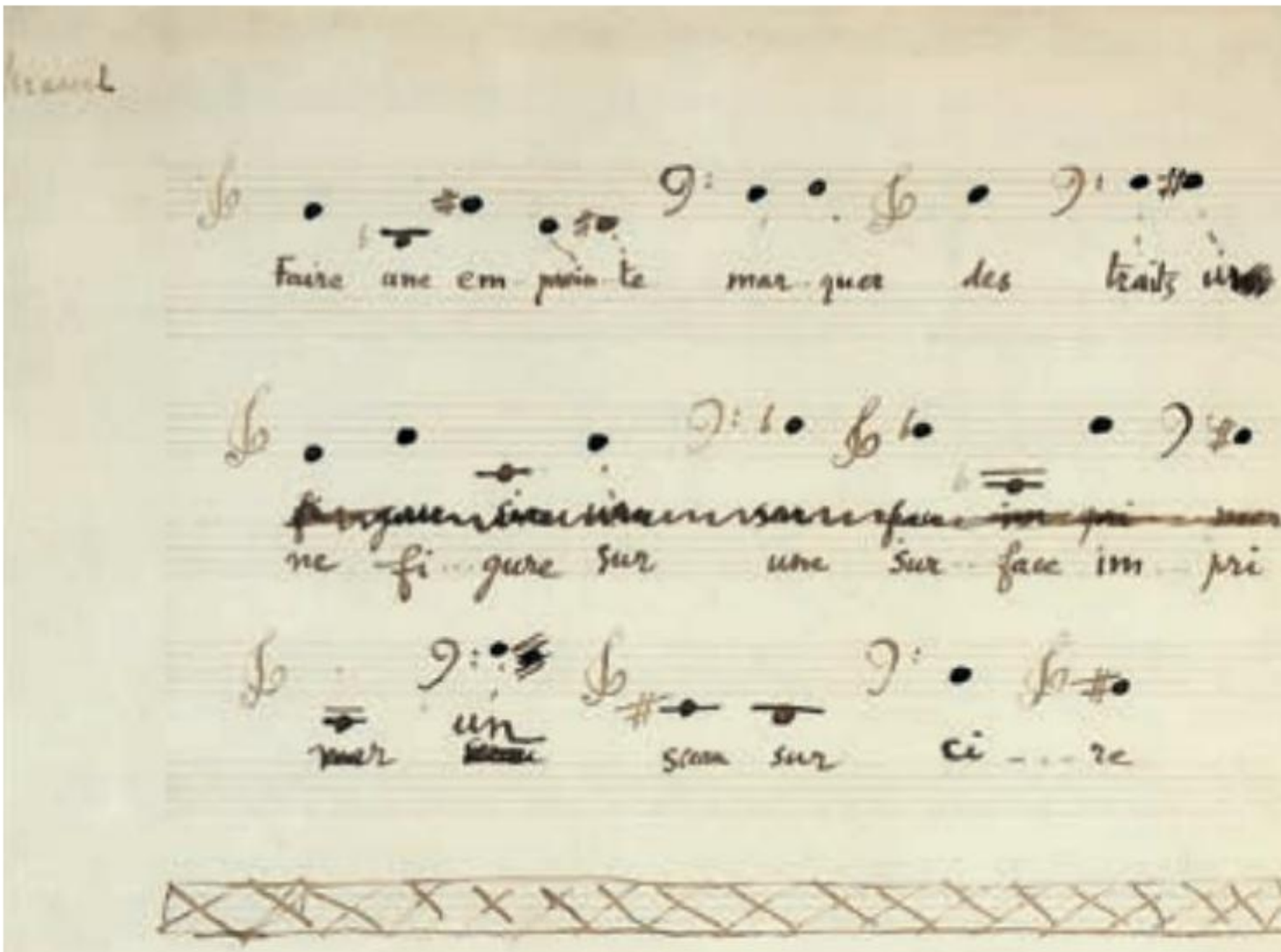
Ferruccio A. Demanins
Marinetti on the Radio, 1932

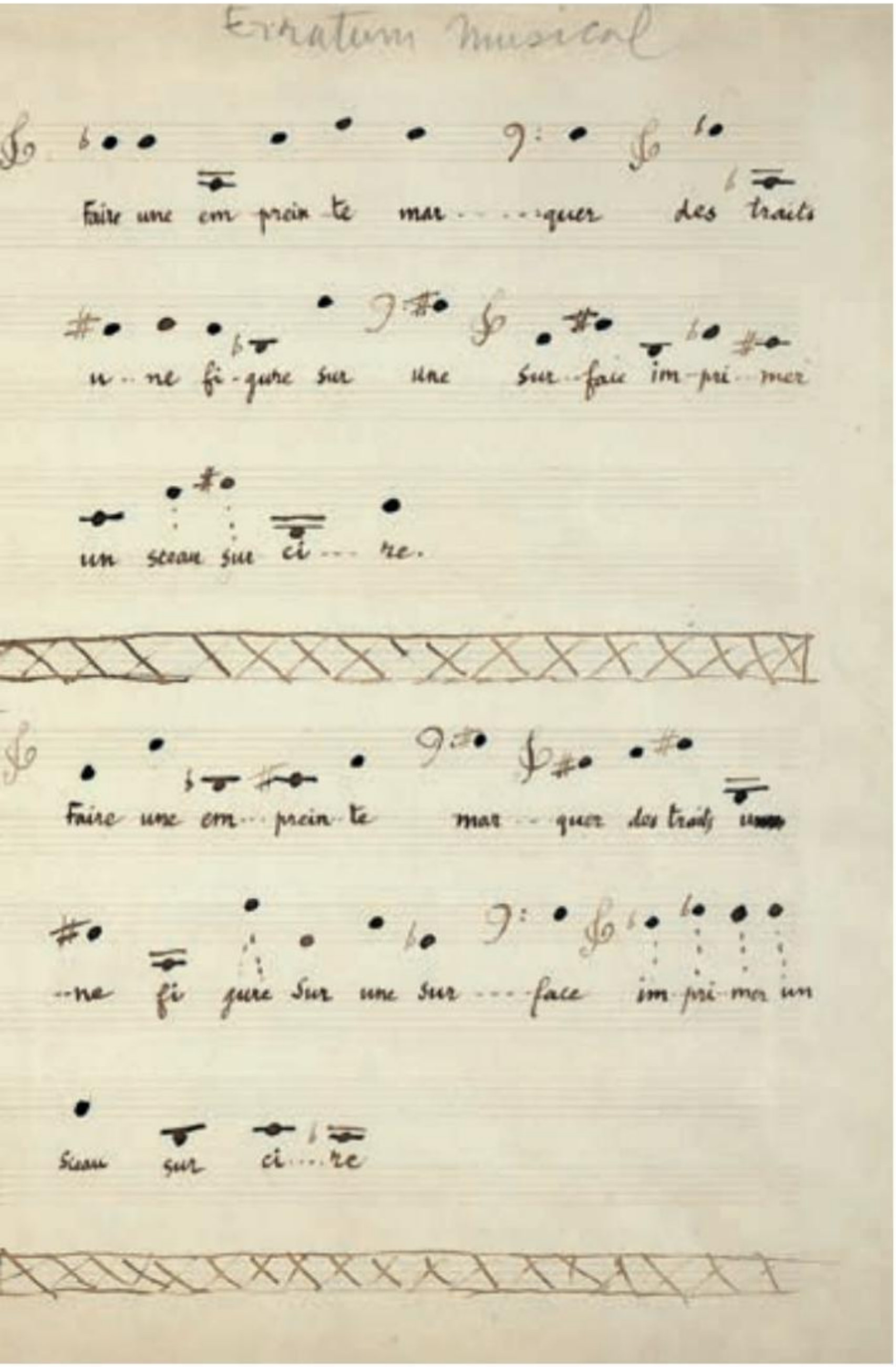
Luigi Russolo
Score for "intonarumori"
Risveglio di una città, in
Lacerba, March 1, 1914



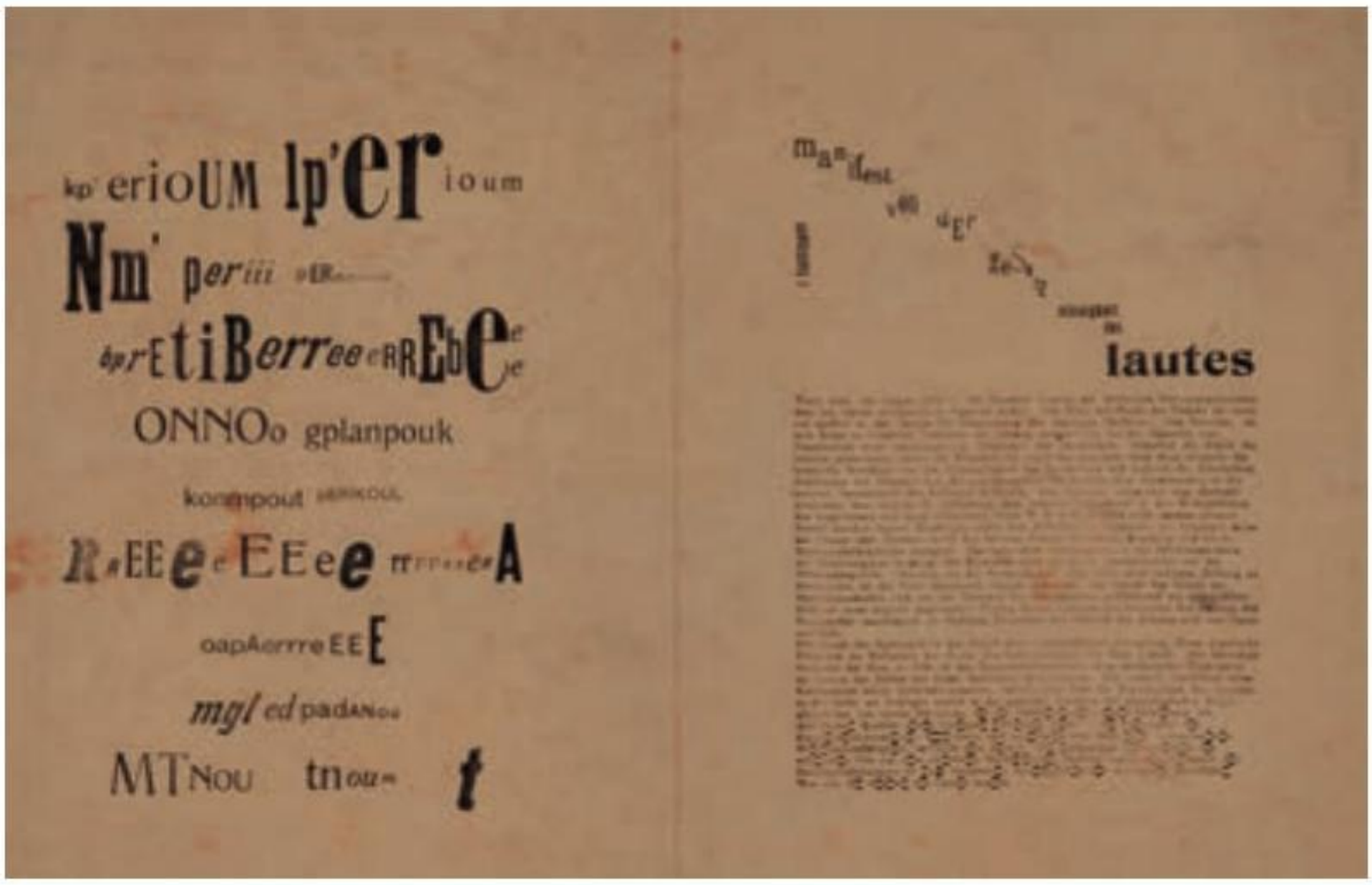
VEGLIO DI UNA CITTÀ.




Faire une em pein te mar que des traits ir
ne fi gure sur une sur face im pri
mer un scau sur ci re



Marcel Duchamp
Erratum Musical,
1912–15



Raoul Hausmann
kp'erioum
Phonetic poem with the text "Manifest von der Gesetzmässigkeit des Lautes," 1919

3.
ko ana ko ani
hitaone
make ko te hanga
hitaone
touroaki touroaki
pauske pauske
oioi te toki
kaosann

takitakina
ia
he tikaokao
he tarako
he pararera
le le le le
he parera
le le le le

ETYOMONS

a o f so
DA DÉ MÉ
OMA DO RE TE
ZI MATA DURA
DÉ O.Q DURA
TI MA TOITURA
DÉ ZRATATITOILA
LA LA LARI-RITA
LARI-RITA
LARI-RITA
I love you

PN
ZAZZ
O Ma QU
RRO RRO
RU K
ASCHM ZT
PLOE
ZR KRN NMTOTO
NM E SHCHU
KM NE SCU

mi o do ré mi mi o
„mouvelade"

(New-York)

Adon Lacroix

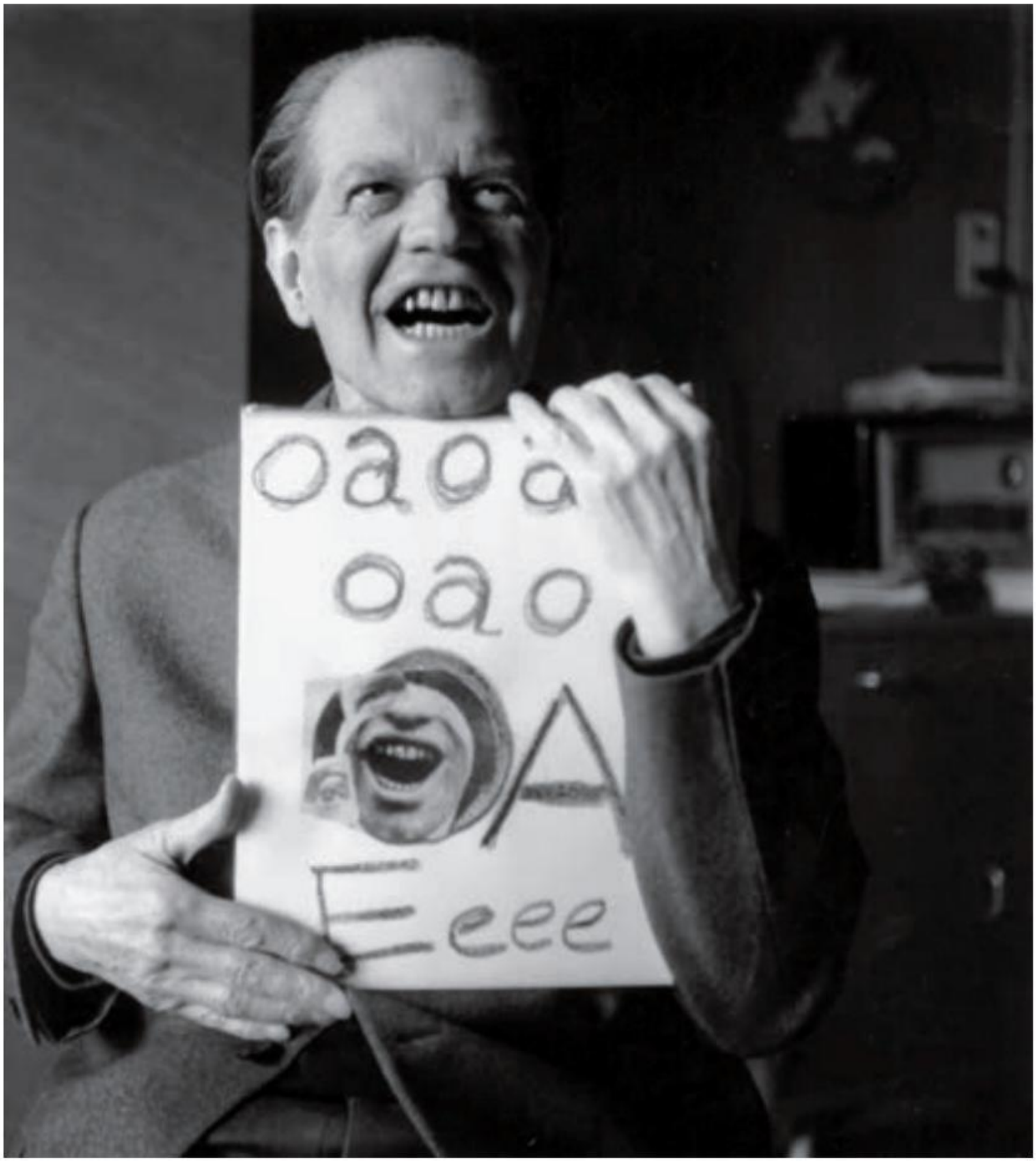
KARAWANE

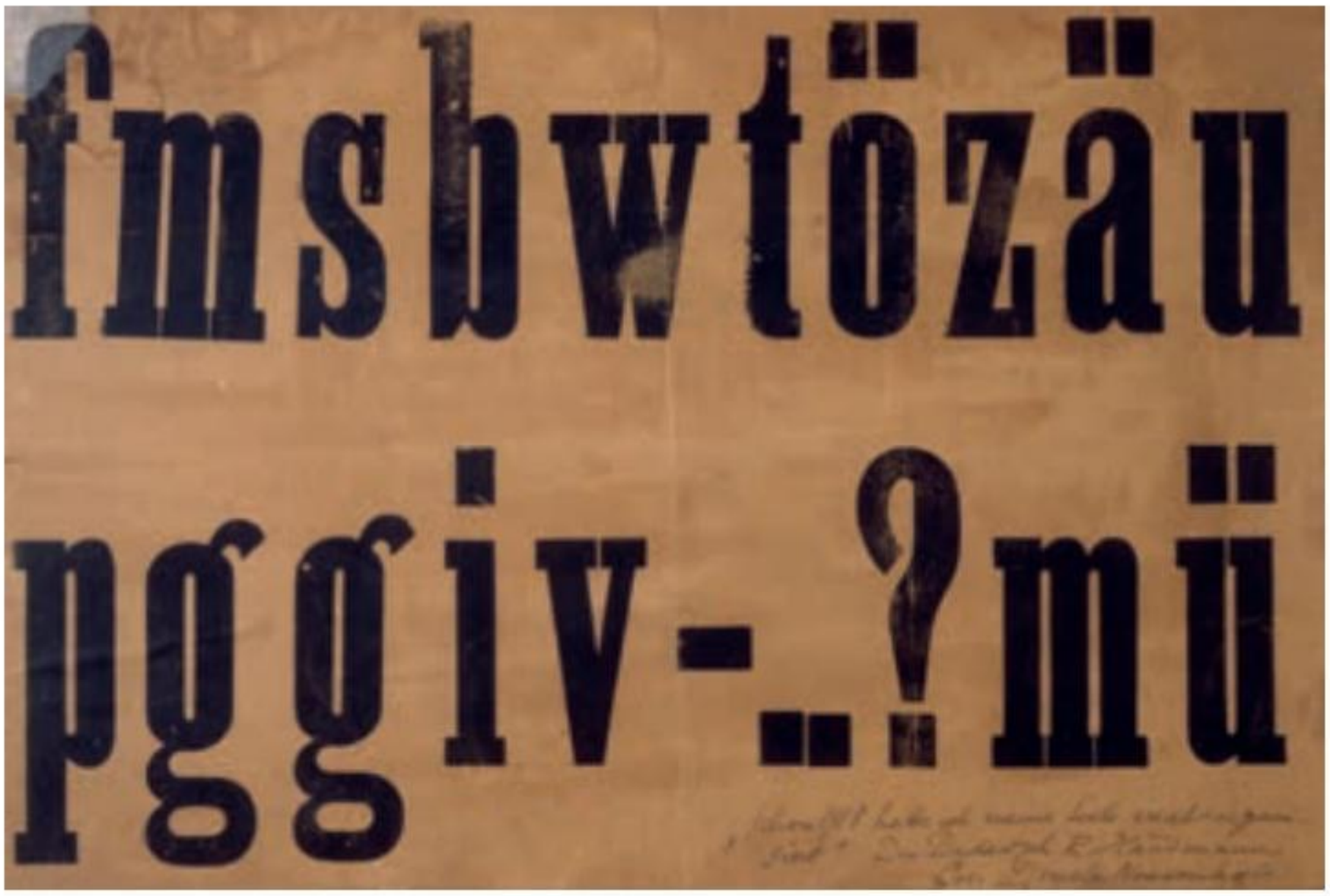
jolifanto bambla ô falli bambla
grossiga m'pfa habla horem
égiga goramen
higo bloiko russula huju
hollaka hollala
anlogo bung
blago bung
blago bung
bosso fataka
ü üü ü
schampa wulla wussa ólobo
hej tatta gôrem
eschige zunbada
wulubu ssubudu uluw ssubudu
tumba ba- umf
kusagauma
ba - umf

(1917)
Hugo Ball

Hugo Ball
"Karawane" (1917),
in *Dada Almanach*,
Erich Reiss, Berlin, 1920

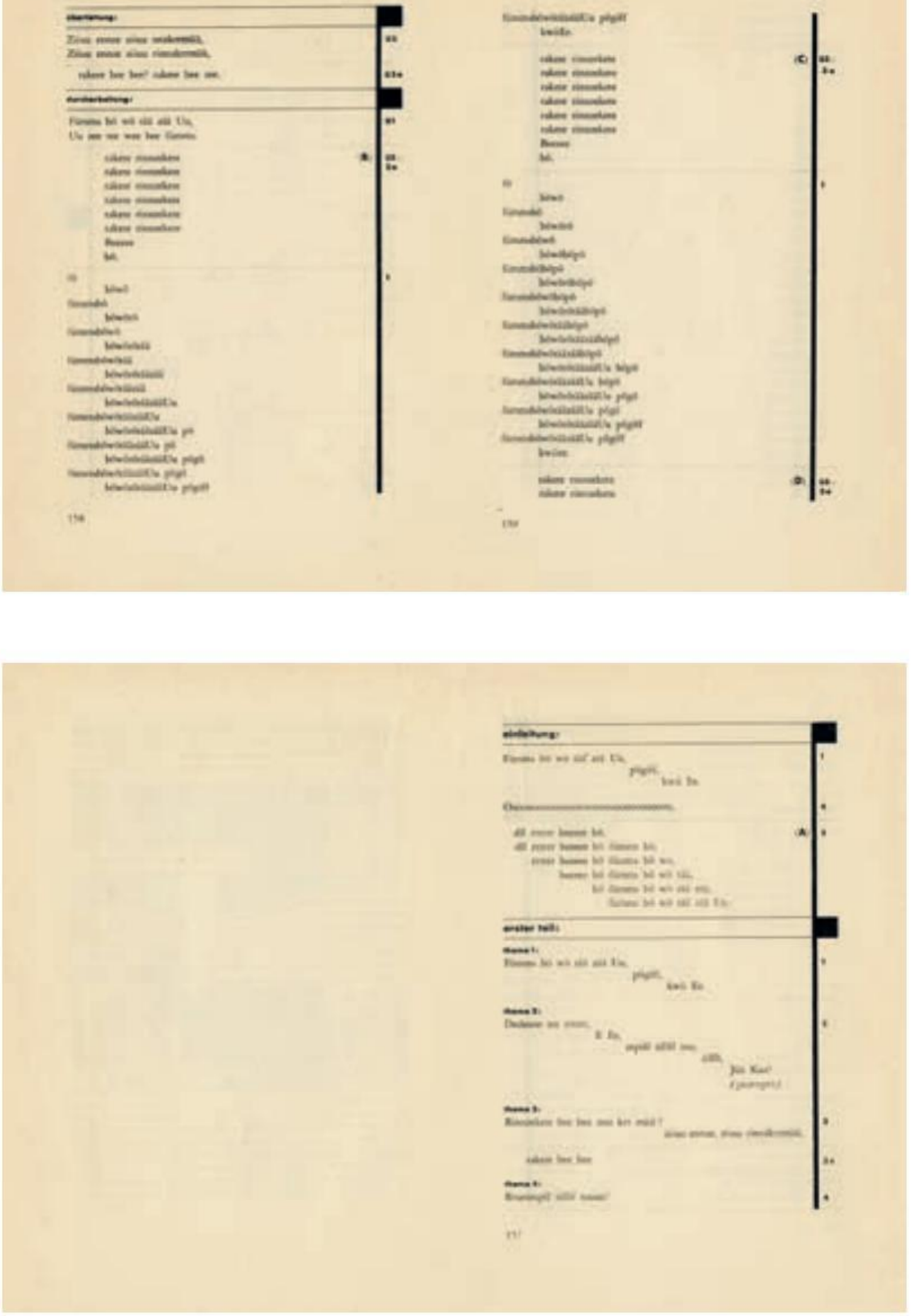
Marthe Prévot
Raoul Hausmann
reciting his poem
“Oaoa,” 1965–66


oaoa
oao
eee



Raoul Hausmann
fmsbwtözäu, 1918

Kurt Schwitters
"Ursonate," in *Merz*, no. 24, 1932

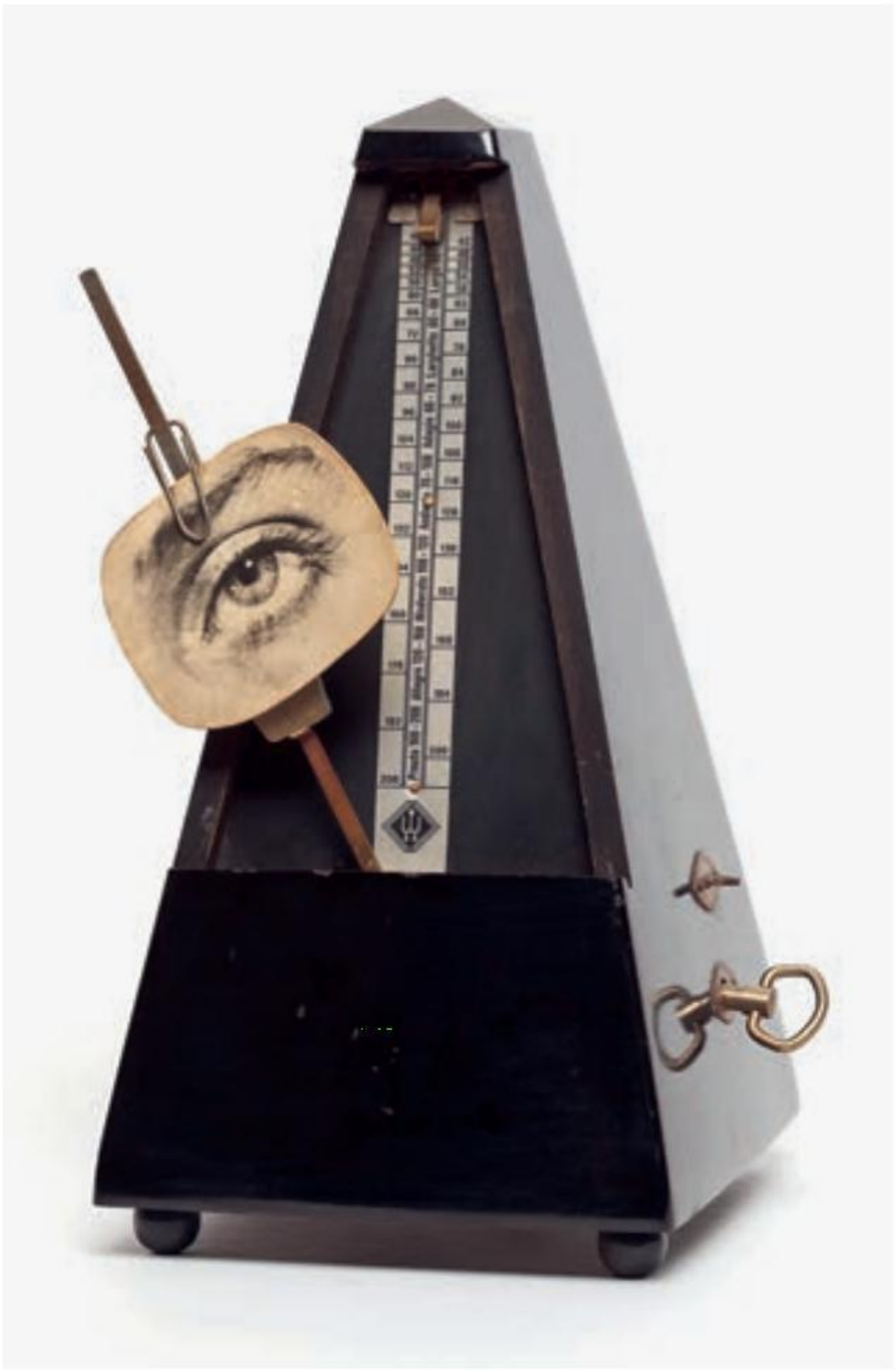


Genja Jonas
Kurt Schwitters reciting
“Ursonate,” 1926

Hugo Ball wearing a
Cubist costume at the
Cabaret Voltaire, 1916

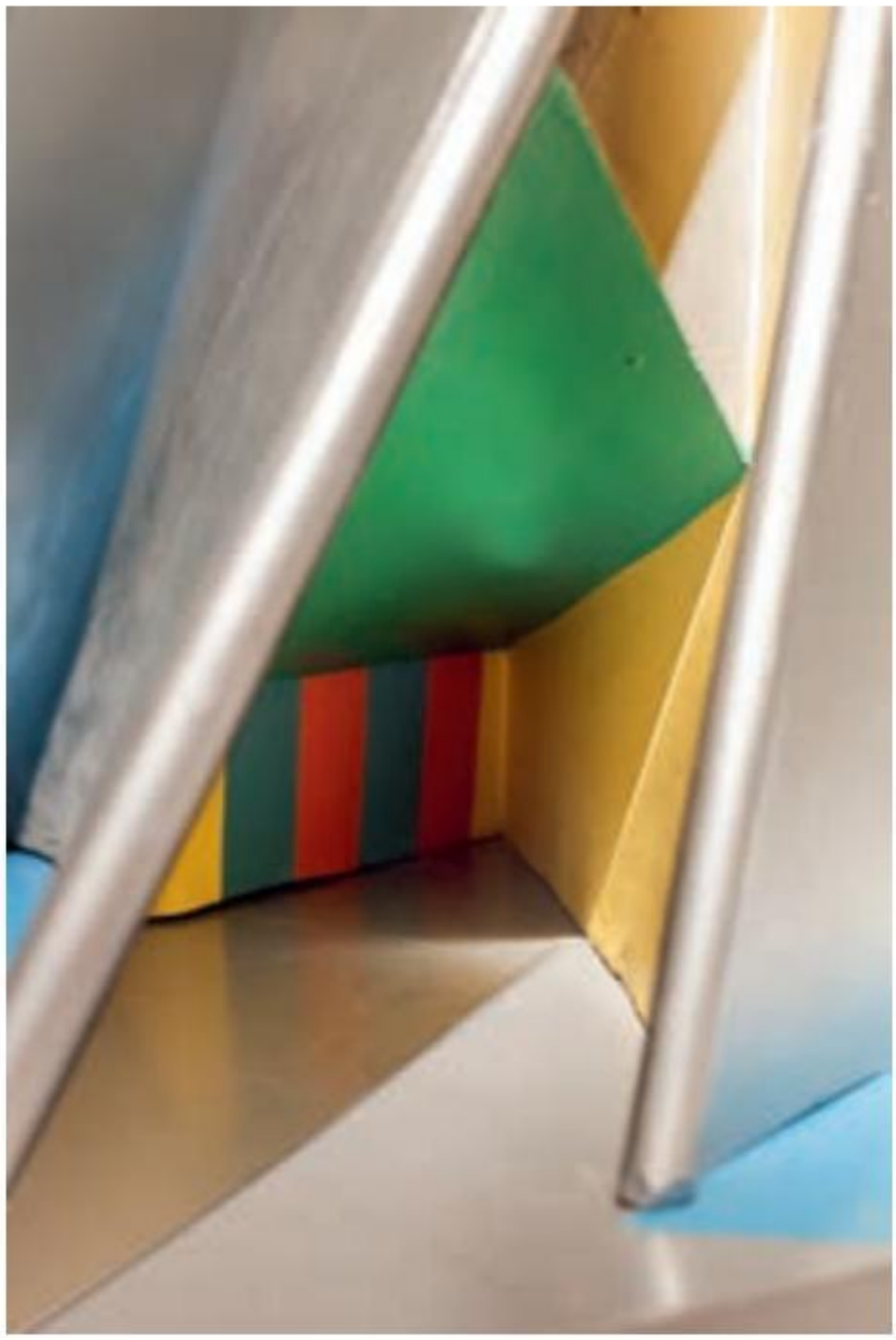
Tristan Tzara (ed.)
Dada, no. 7 ("Dadaphone"),
March 1920

Man Ray
Indestructible Object,
1923/1965

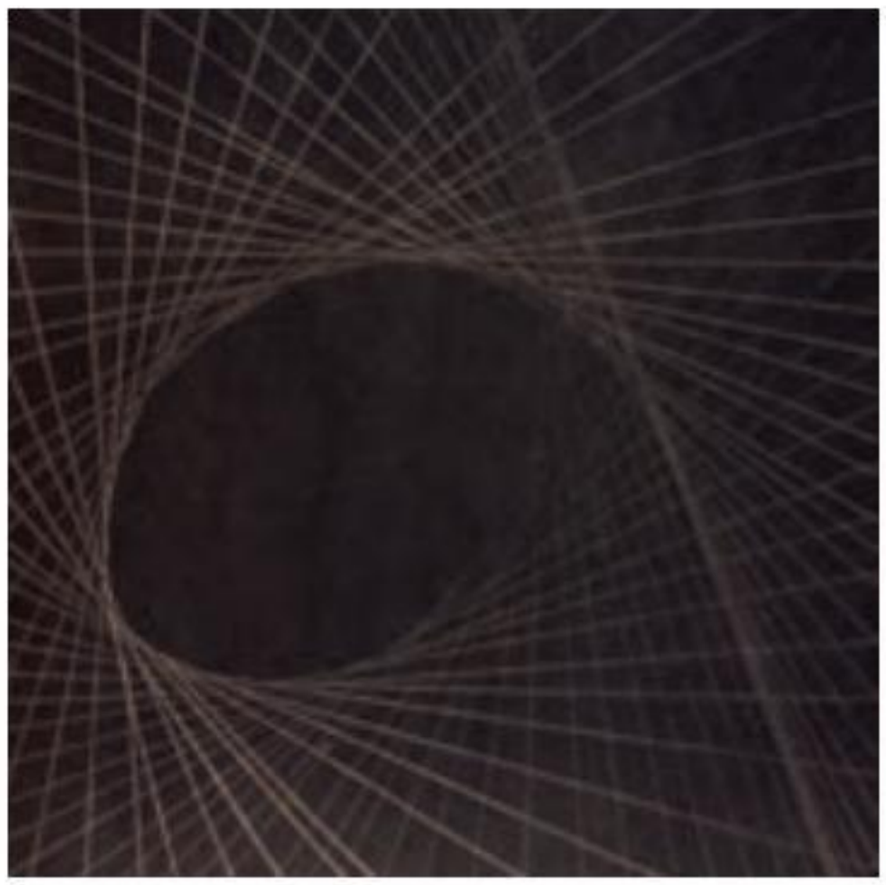


Man Ray
Emak-Bakia
(Leave Me Alone),
1926/1970

Le Corbusier and Iannis Xenakis
Model of the Philips Pavilion at
Expo 58 in Brussels, ca. 1957–58

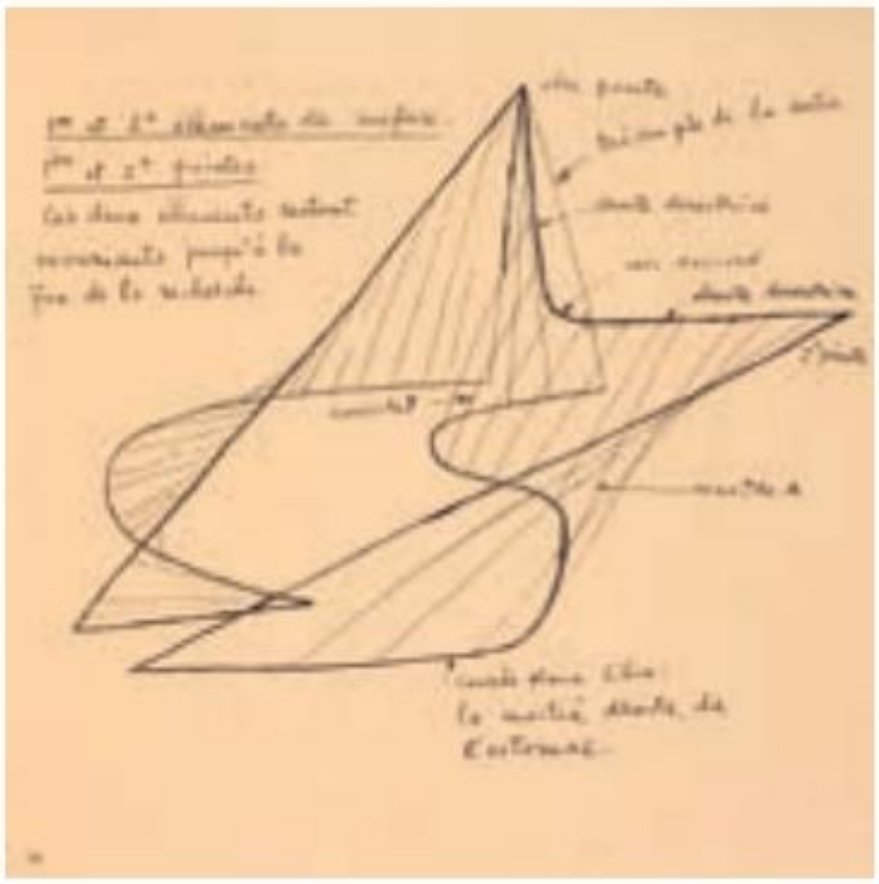


Le Corbusier
Le poème électronique,
Les Éditions de Minuit,
Paris, 1958

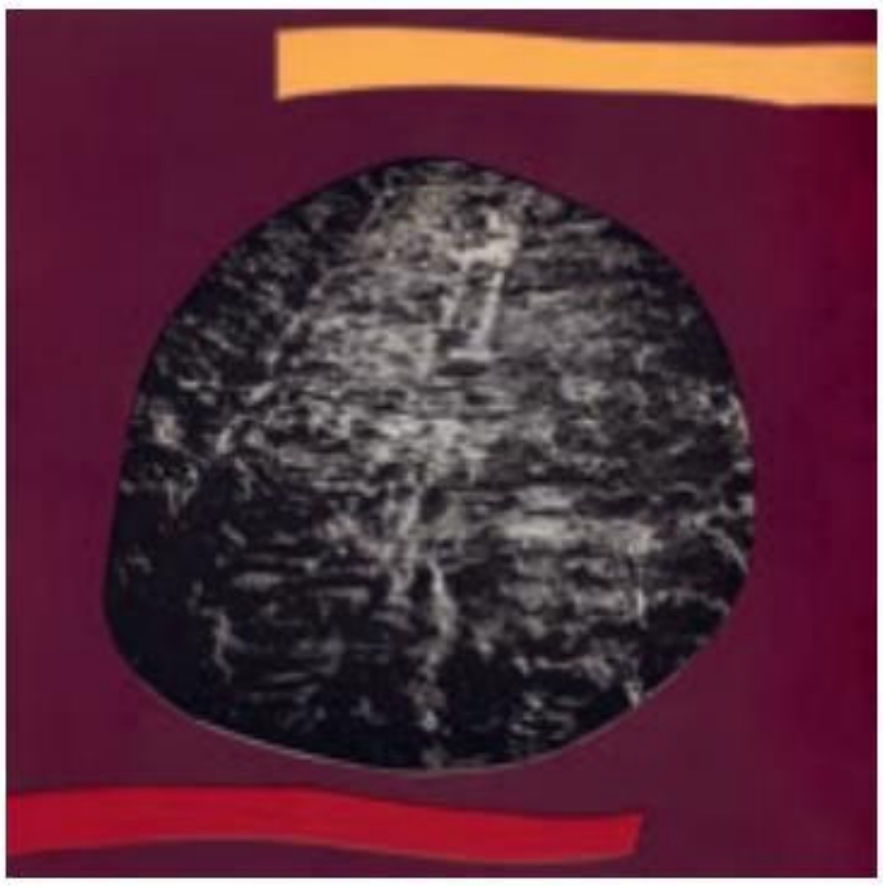



faits d'hommes

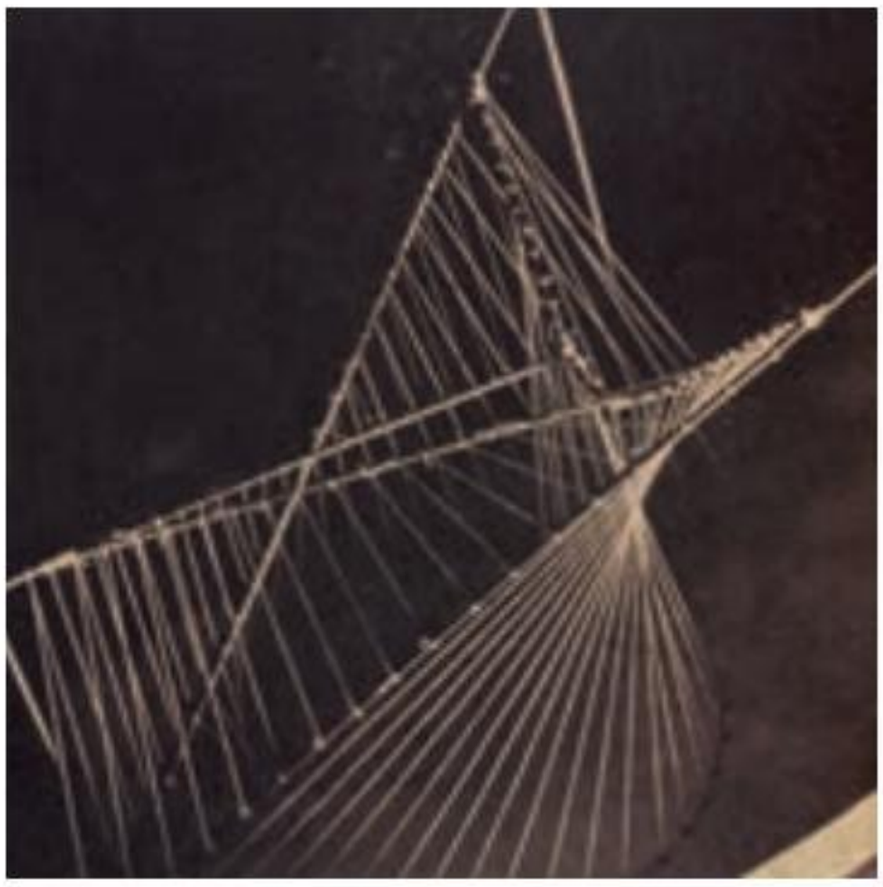

à tous



QUE LE MONDE S'ÉVEILLE. L'HUMANITÉ EN MARCHE. RIEN NE PEUT L'ARRÊTER. UNE HUMANITÉ CONSCIENTE, QU'ON NE PEUT NI EXPLOITER, NI PRENDRE EN PITIÉ. EN AVANT! ALLONS! ILS MARCHENT! LE PIÉTINEMENT DE MILLIONS DE PAS QUI RÉSONNE, SOURDEMENT, INLASSABLEMENT. LE RYTHME CHANGE. VITE, LENT, STACCATO, TRAINANT,




harmonie



Isidore Isou
La plastique parlante
(The Talking Plastic),
1960/1987

Isidore Isou
La femme attend l'homme qui vient à cheval (The Woman Waits for the Man Who Comes Riding a Horse), 1963

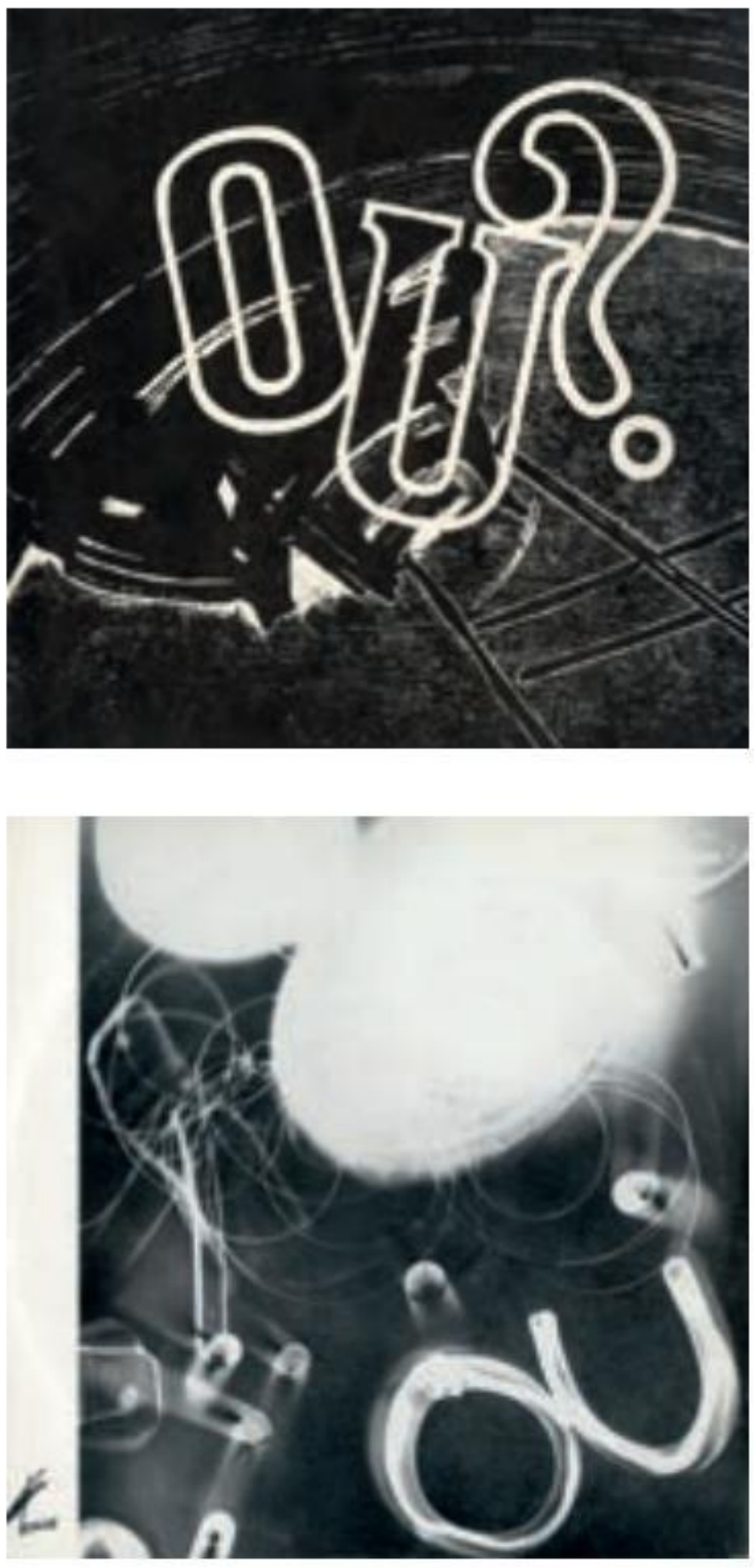

La attend
fatigue
et
pour
la
plus ignorants
que méchants.
finira
aussi
mal que d'autres
L'Isou 63

Isidore Isou
Traité de Bave et d'Éternité
(On Venom And Eternity),
1950–51

2. I like cinema when it is insolent
3. But I don't like imitators!
4. For the sake of my soul,
I choose to run my own risks.
5. I want a heaven or hell
of my very own.
6. I declare the *destruction of cinema*,
7. To conquer, one must break.
8. As in migrations
or imperial conquests!
9. Yes, we must rip apart the two wings
of cinema: sound and image
10. We must break this natural
association
11. as spontaneous commentary
generated by the images.
12. We must make the unfolding
images indifferent
13. to the terrible talking story
that will be projected
14. that will begin
in the darkness of the theatre.
15. We must break the continuity
of the succession of images,

François Dufrêne
Oeuvre désintégrale
(1958–76),
Guy Schraenen éditeur,
Antwerp, 1976

Henri Chopin
La danse magnétique
(The Magnetic Dance),
in the poster of the 9th
Festival International des
Musiques Expérimentales
de Bourges, 1979

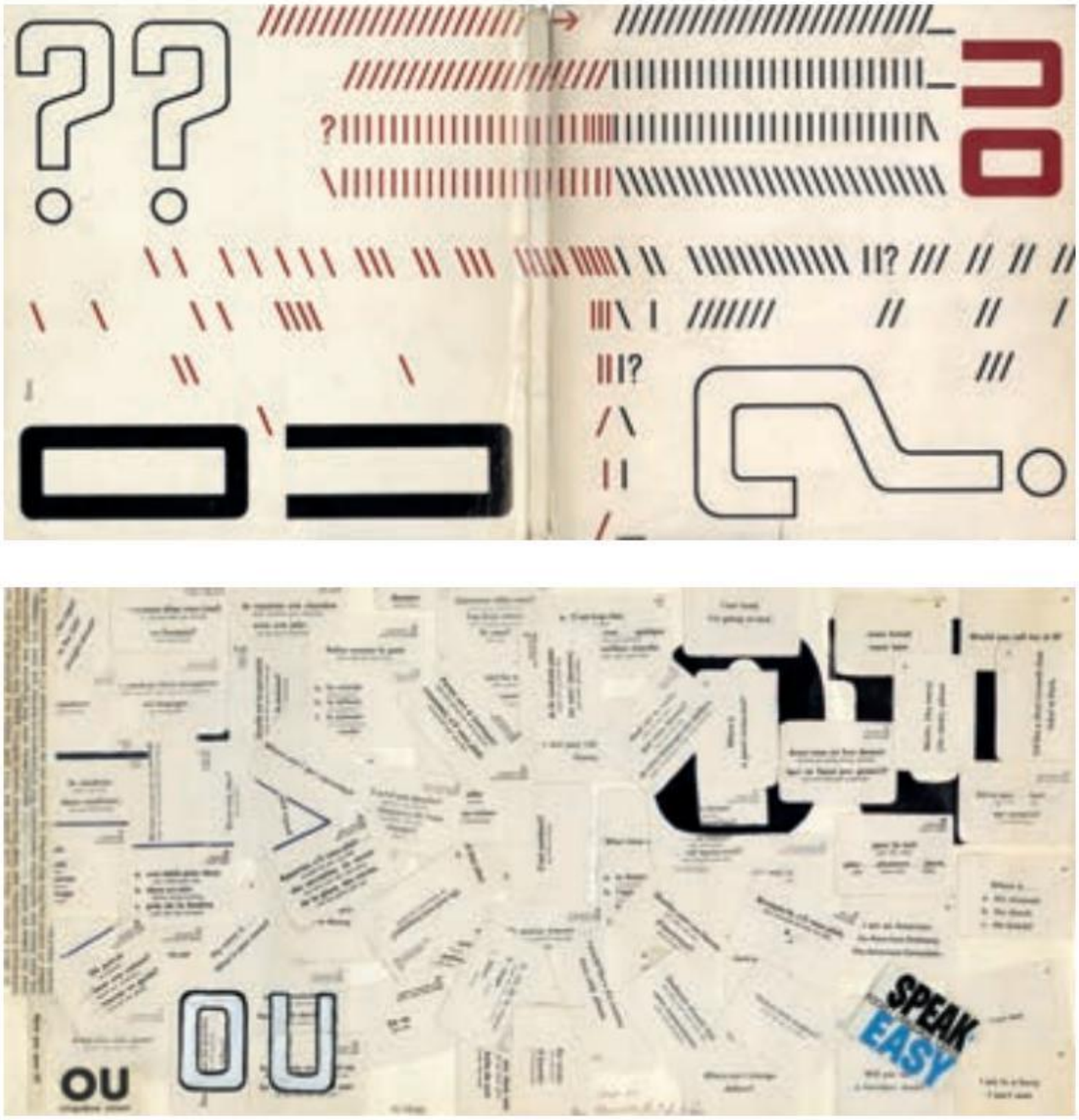


Henri Chopin (ed.)

Ou, no. 20/21, 1964

Ou, no. 22, 1964

Ou, no. 23/24, 1965



Henri Chopin (ed.)

Ou, no. 26/27, 1965

Ou, no. 28/29, 1966

Henri Chopin (ed.)

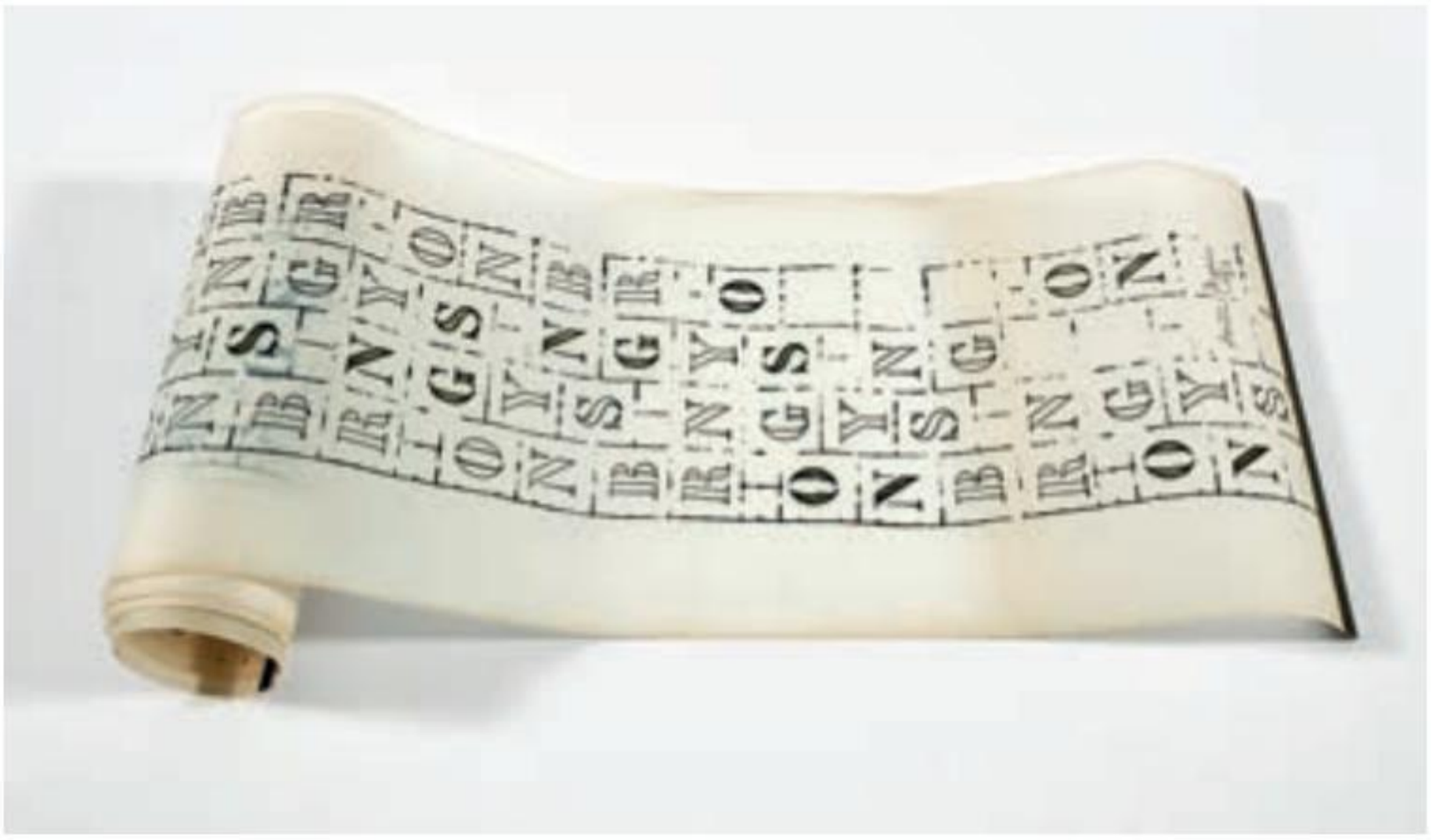
Ou, no. 30/31, 1967

Ou, no. 32, 1967

Henri Chopin (ed.)
Ou, no. 36/37, 1969

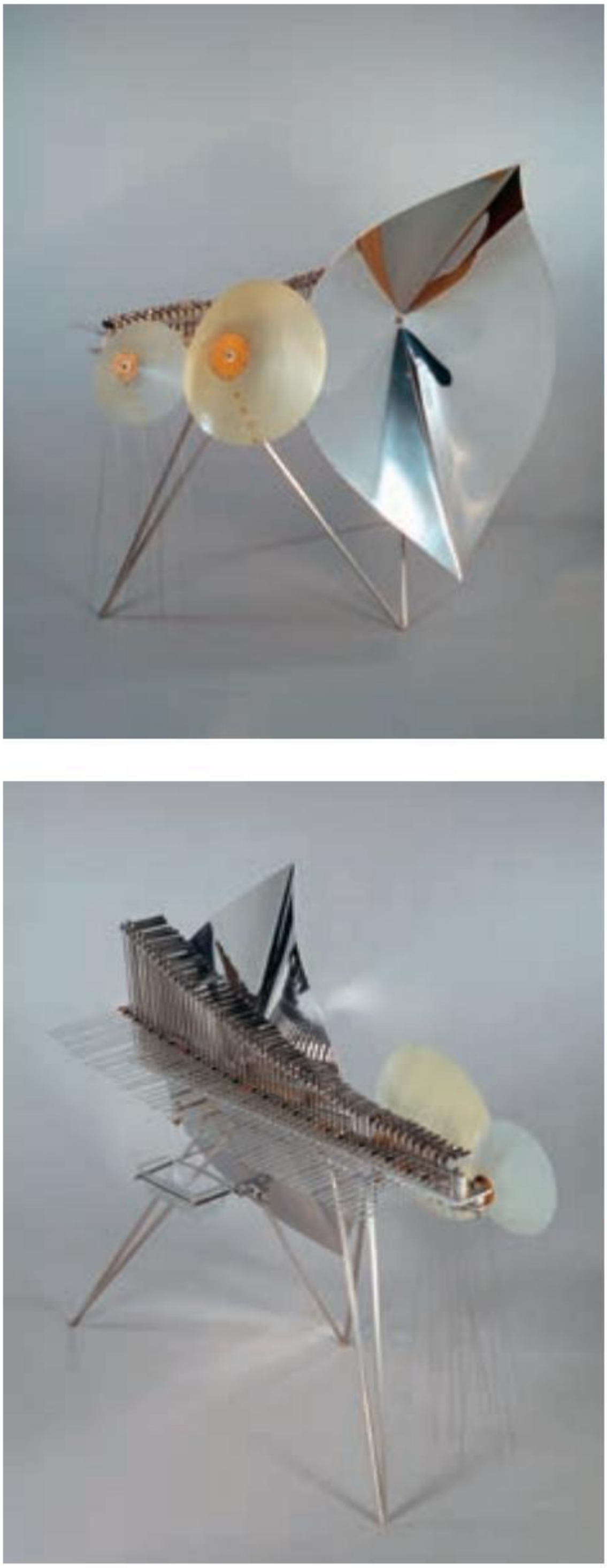
Brion Gysin
I Am That I Am, 1960

Brion Gysin
Roller Poem,
Guy Schraenen éditeur,
Antwerp, 1977

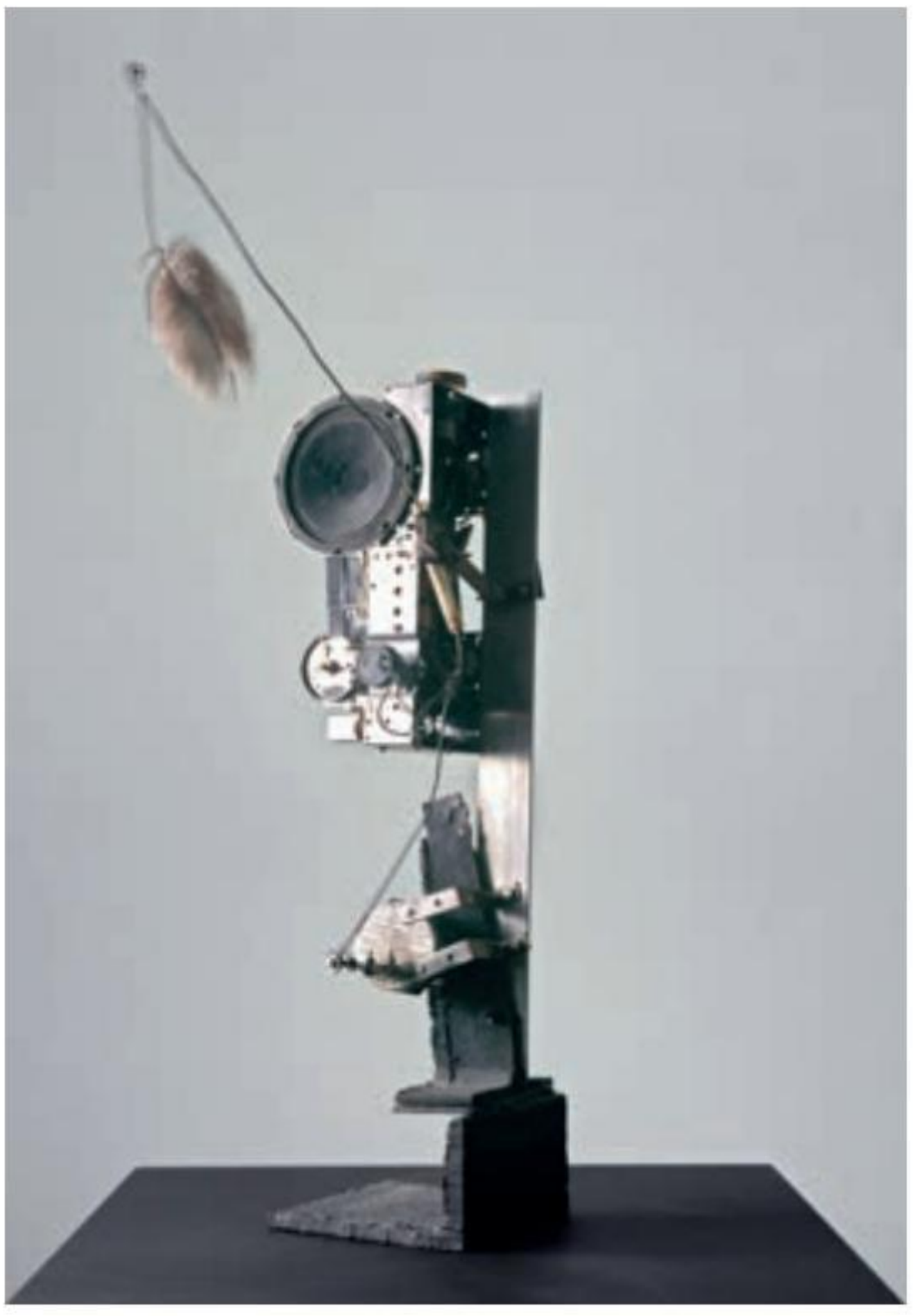


Karel Appel
Musique barbare,
The World's Window,
Baarn, 1963
Photographs by
Ed van der Elsken


USIQUE
ARBARE
VAN
KAREL
APPEL

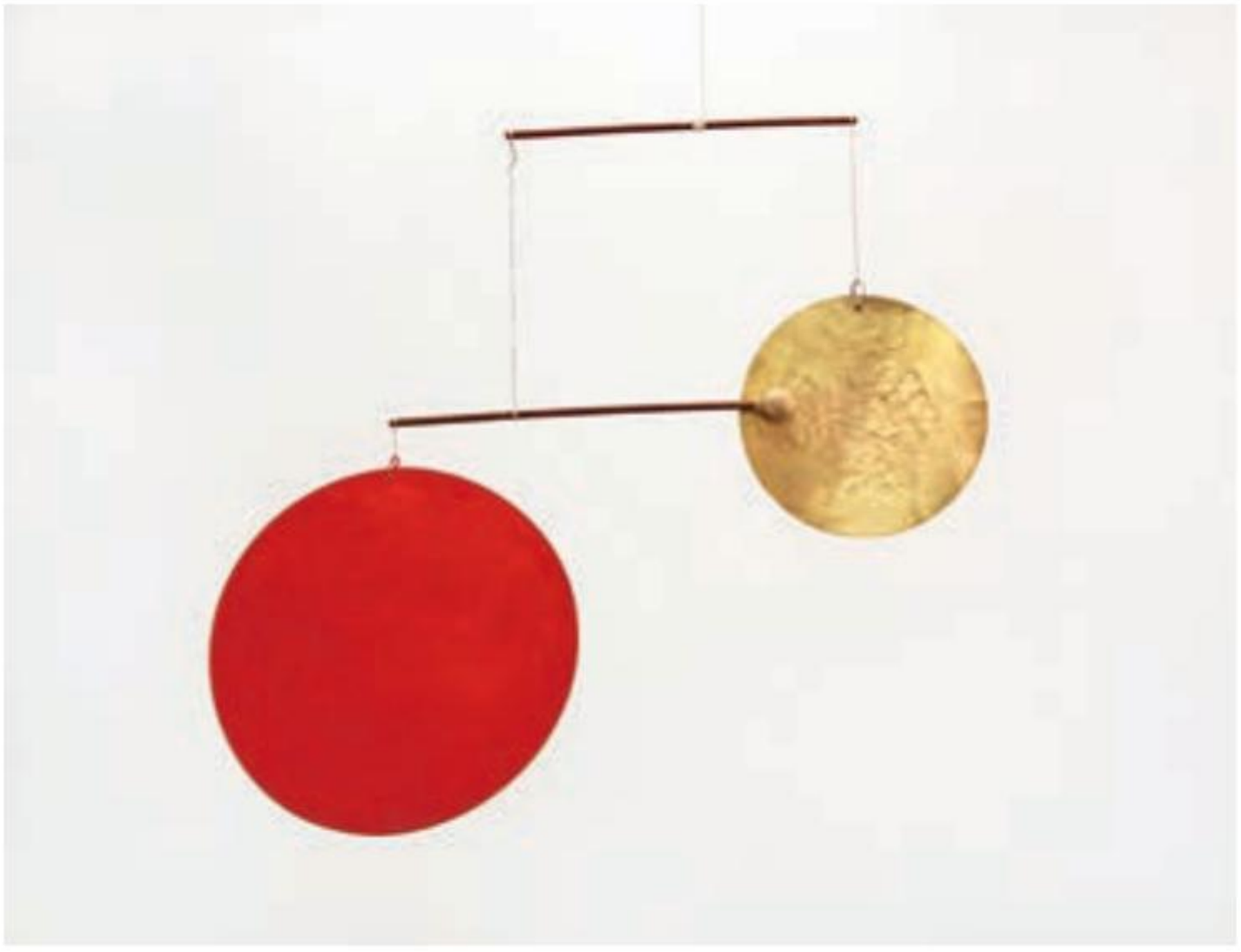


Bernard and François Baschet
Cristal (Crystal), 1952/1980



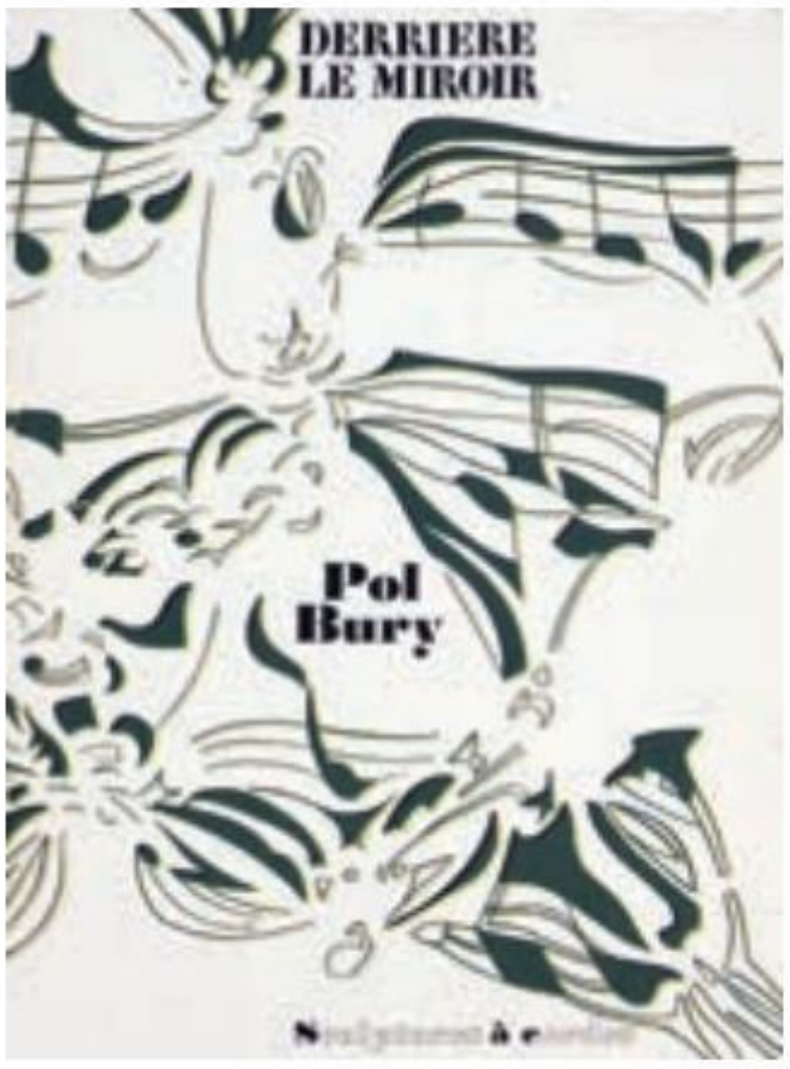
Jean Tinguely
Radio-Skulptur
(Radio Sculpture), 1962

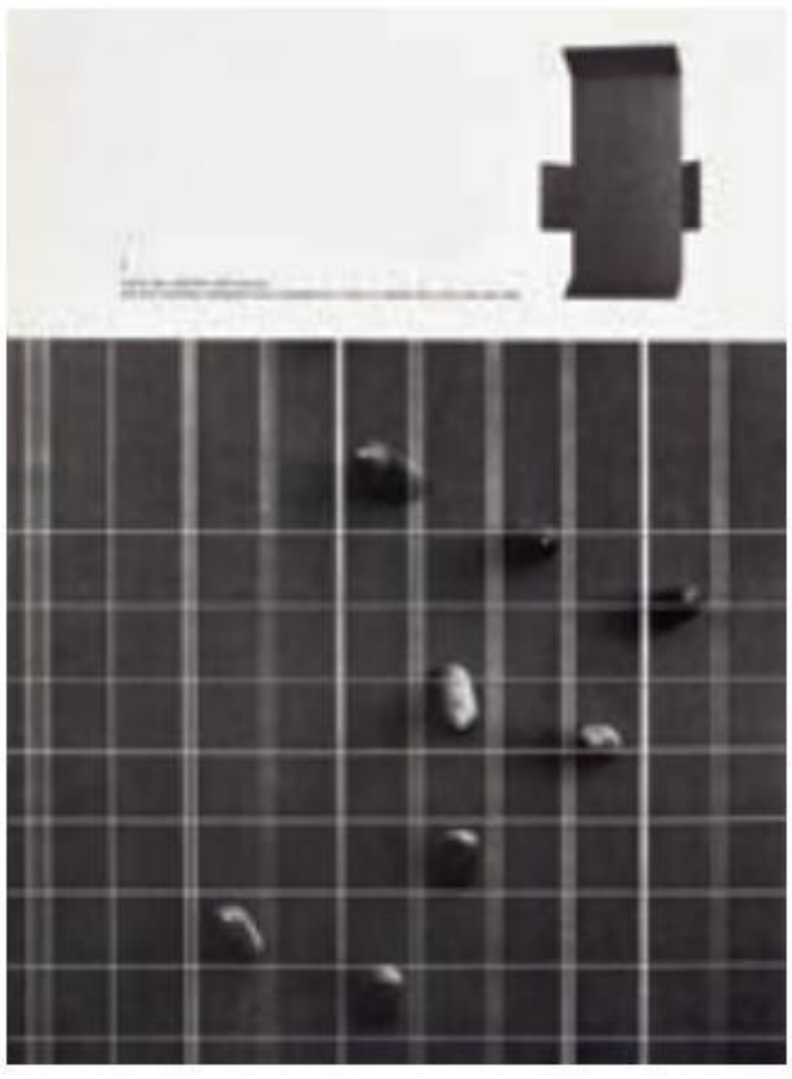
Arrigo Lora Totino
Idromegafono
(Hydromegaphone), 1968

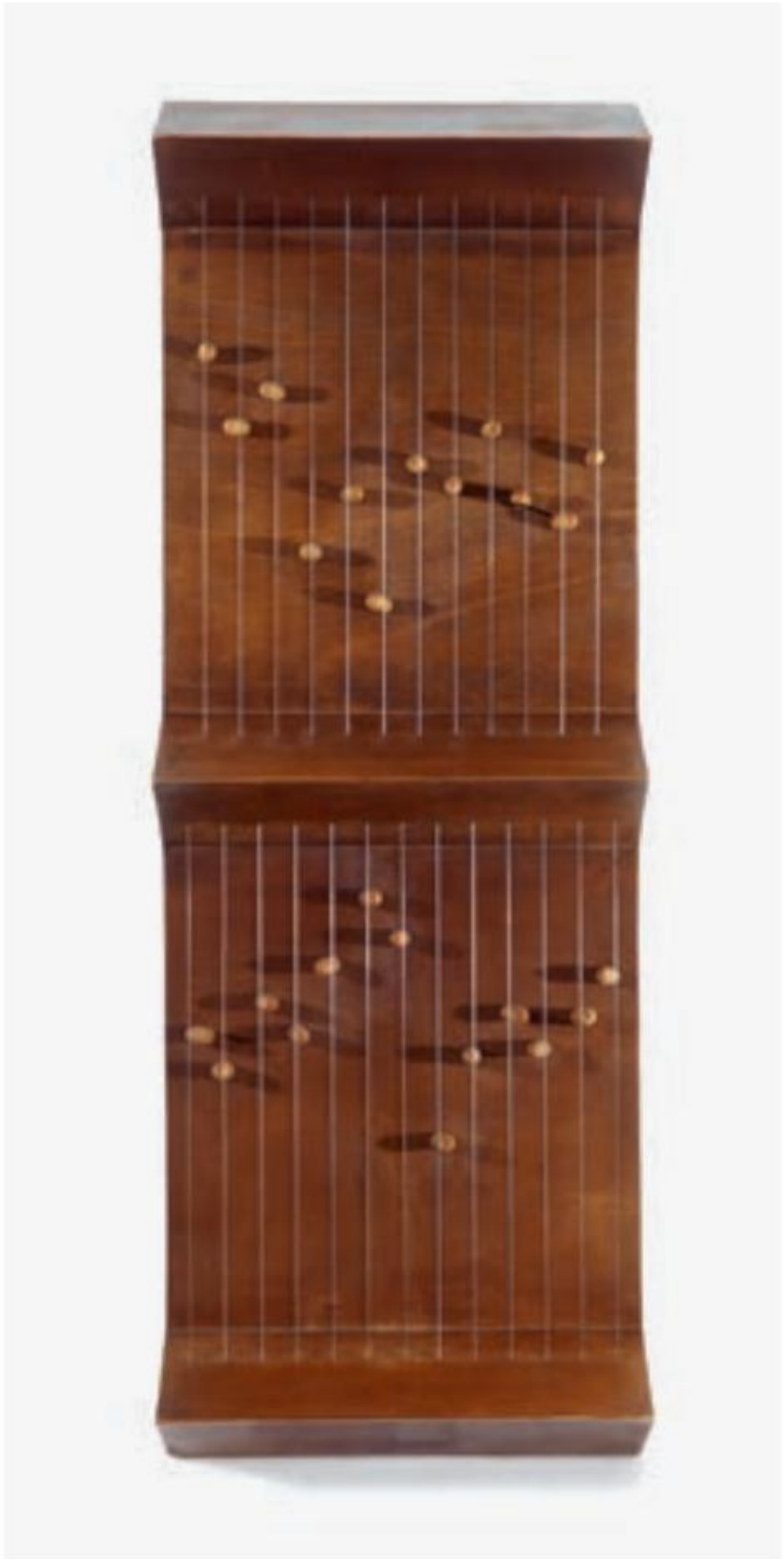


Alexander Calder
Red Disc and Gong, 1940

Pol Bury
Derrière le miroir,
Maeght, Paris,
no. 209, April 1974

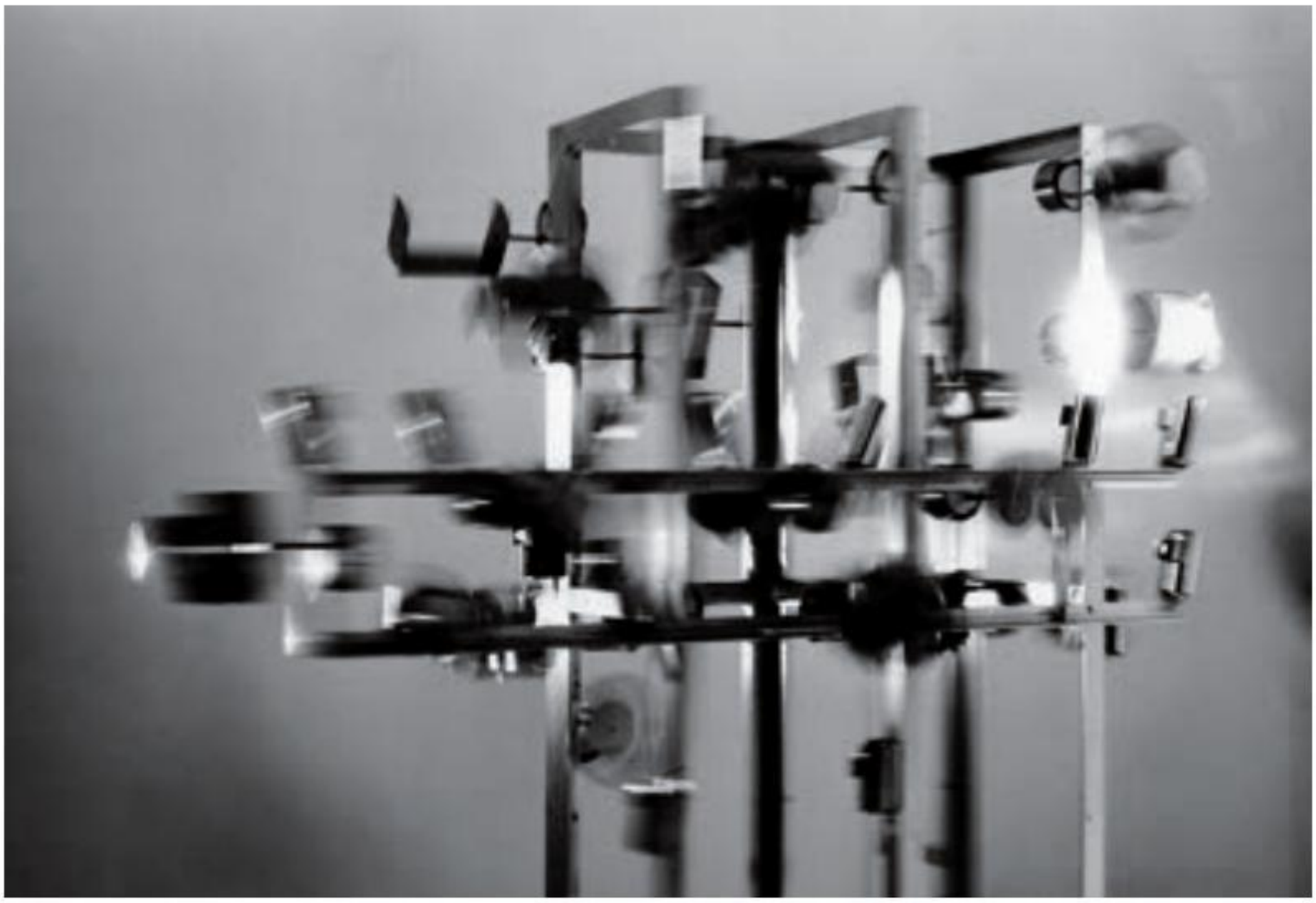




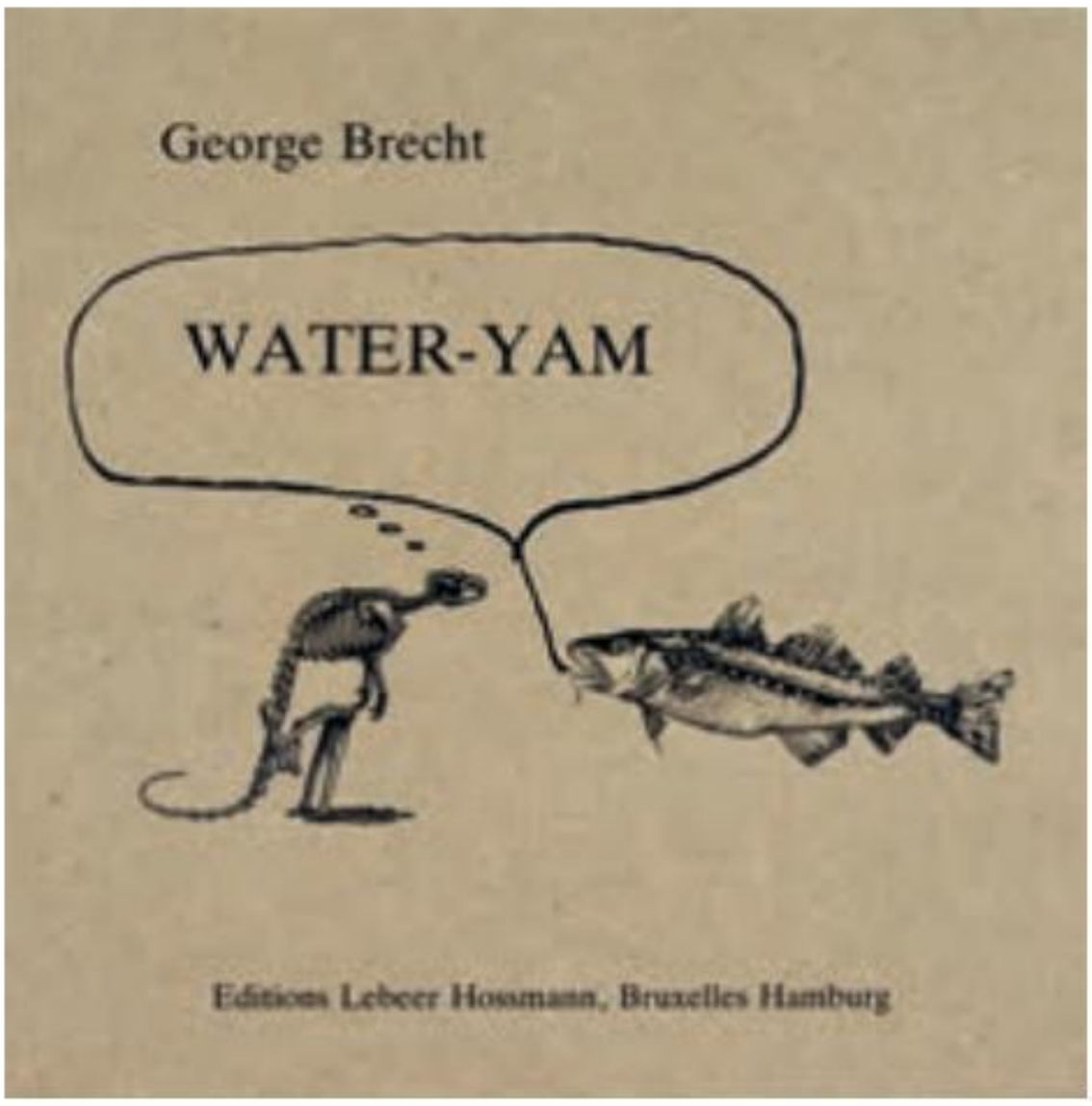


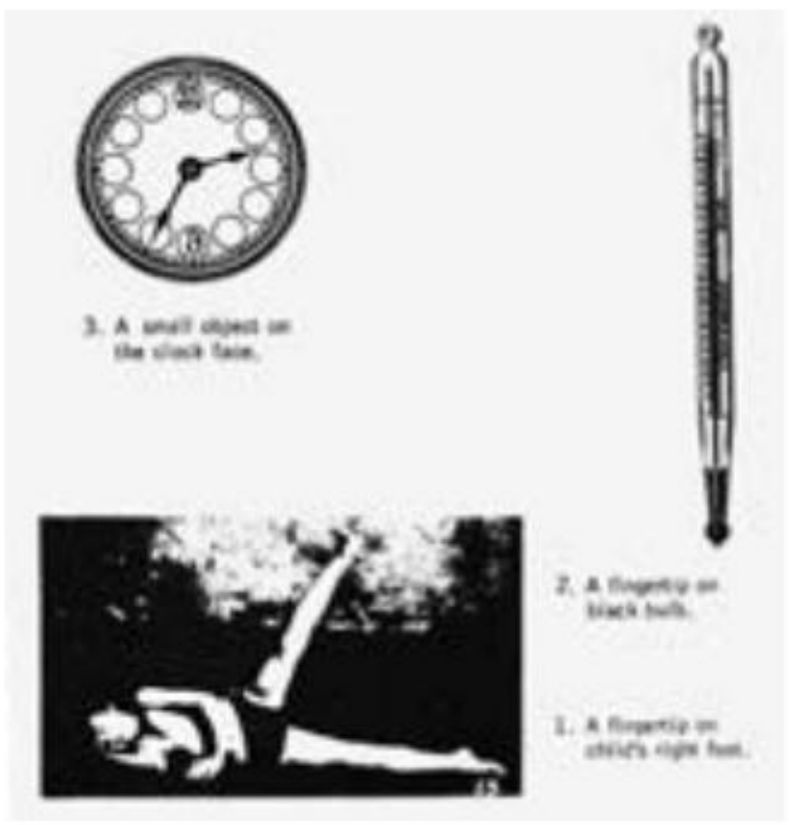
Pol Bury
12 et 13 cordes verticales et leurs cylindres (12 and 13 Vertical Strings and Their Cylinders), 1973

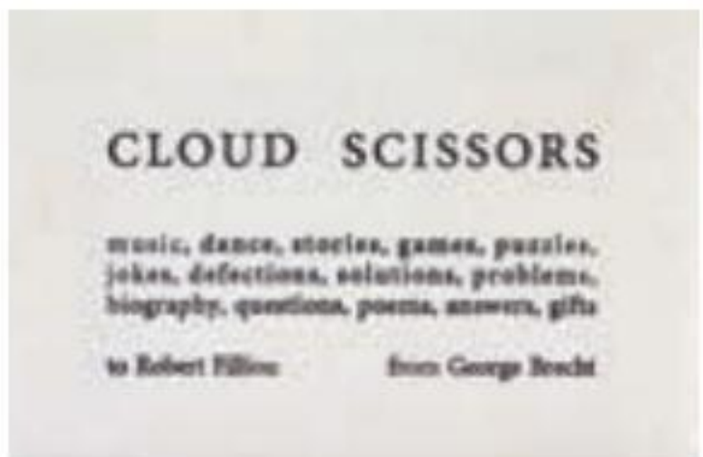
Takis
Musical, 1972



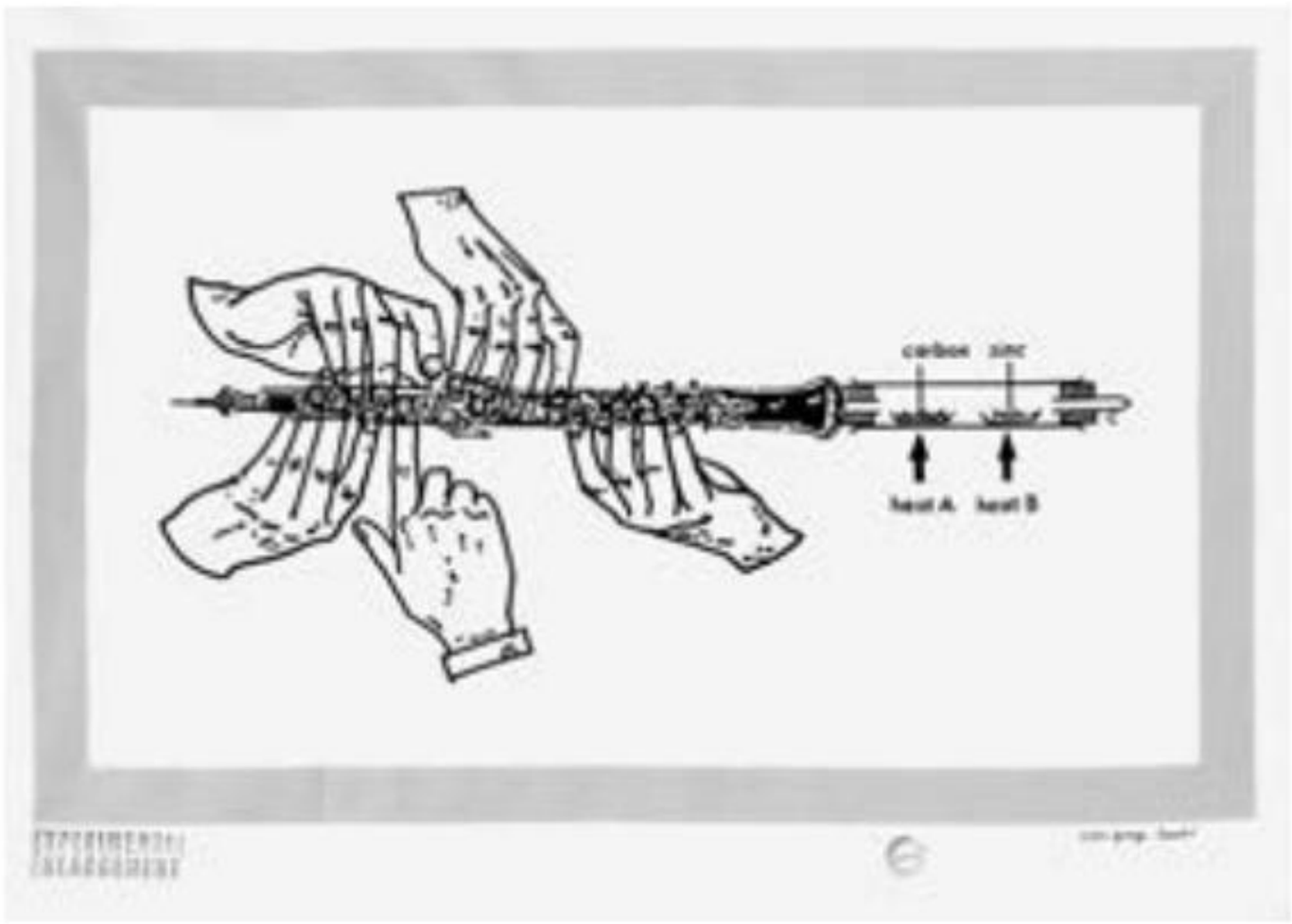
Nicolas Schöffer
Chronos 11, 1971

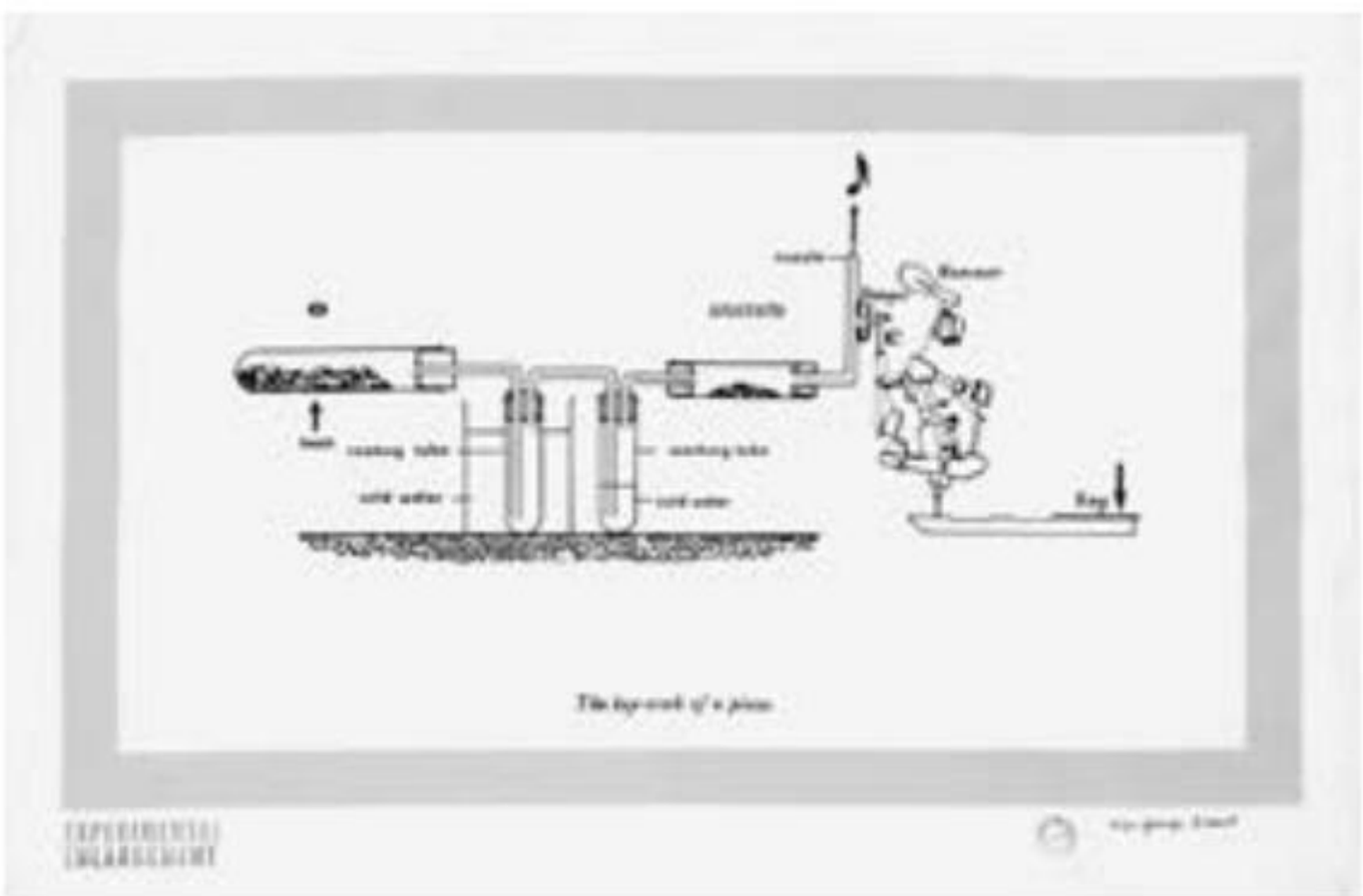






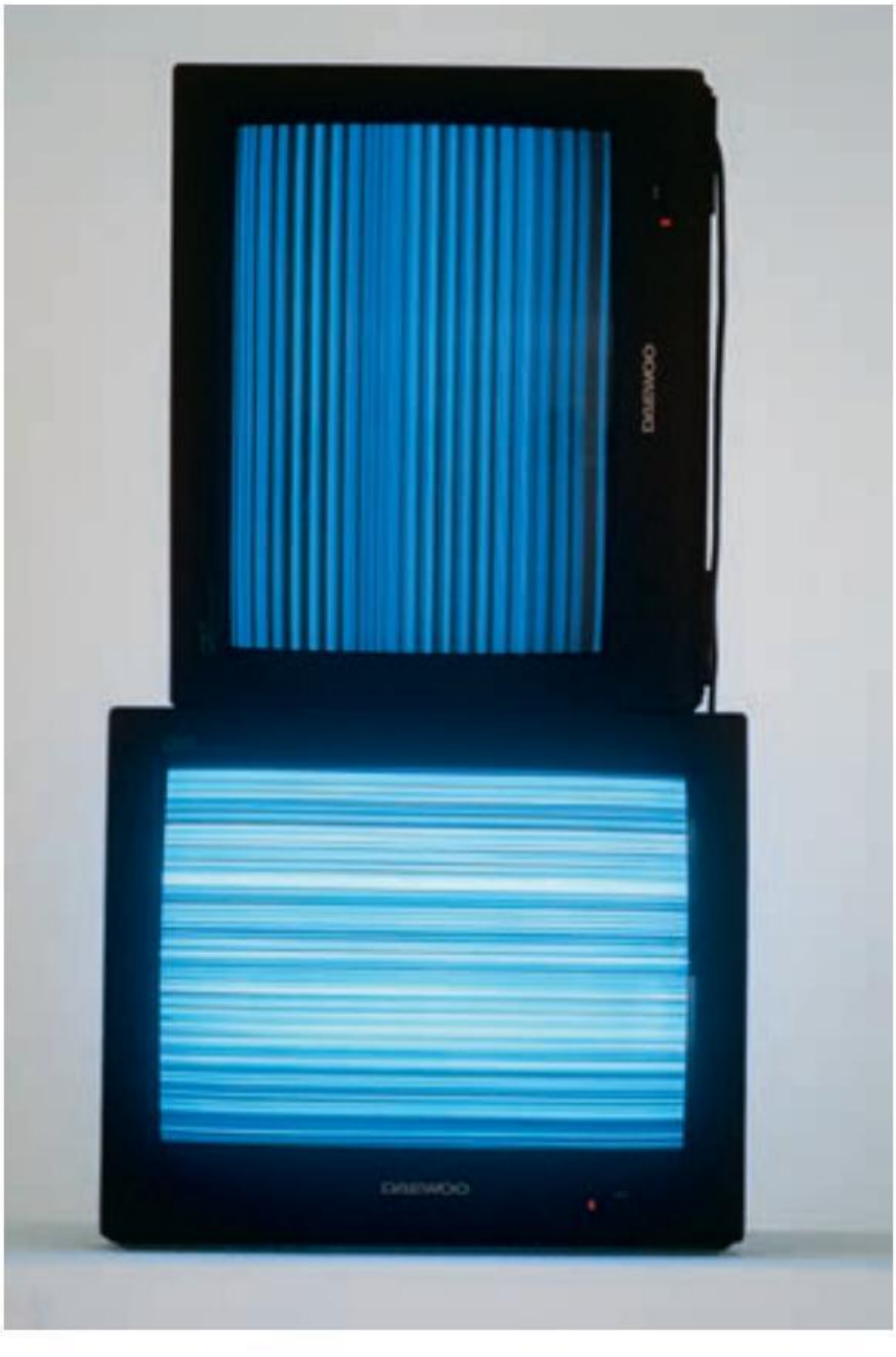
George Brecht
Water-Yam, 1963/1986





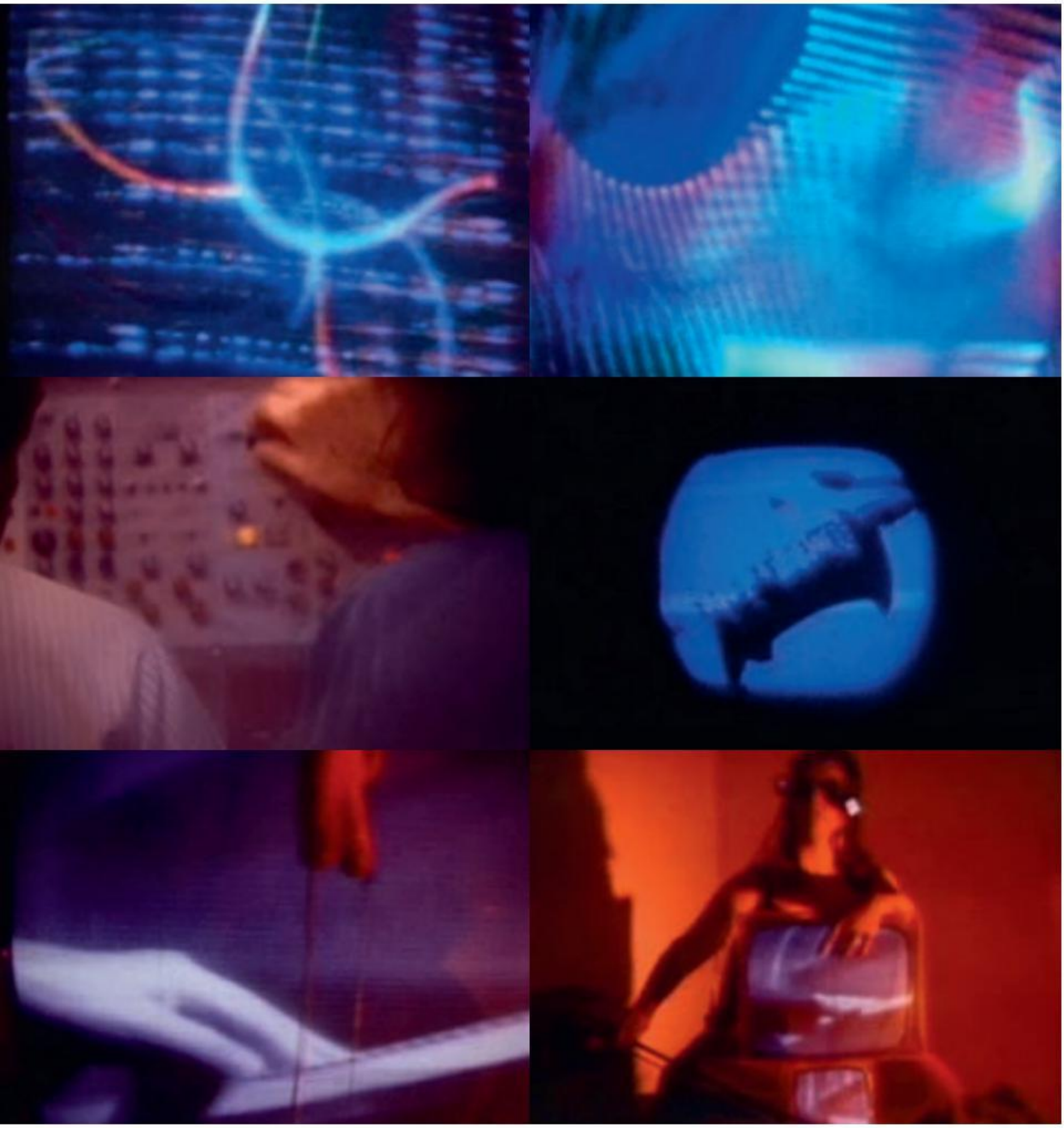
George Brecht
Chemistry of Music, 1969

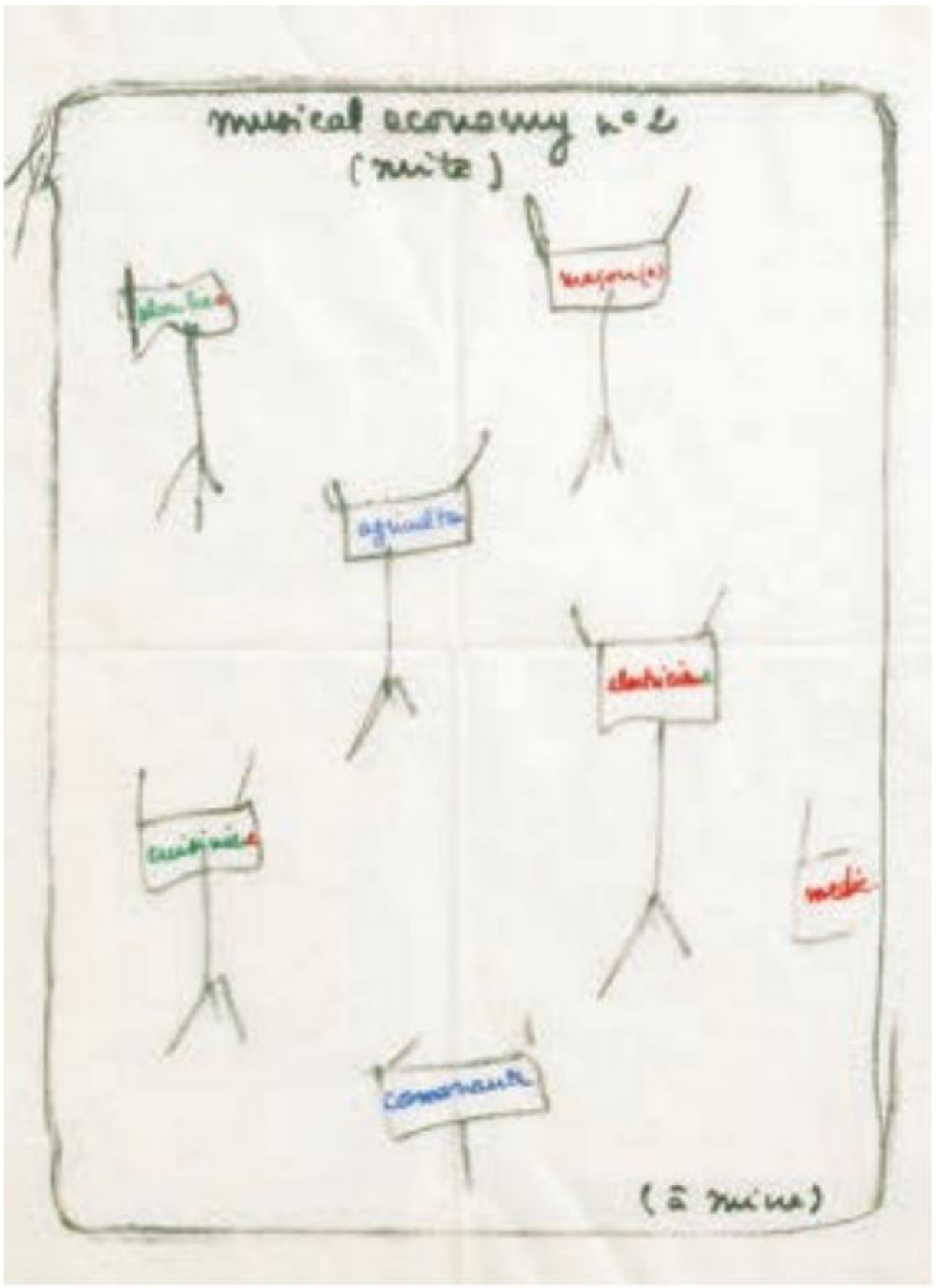
Milan Knížák
Destroyed Music,
1983–85



Nam June Paik
Sound Wave Input on Two TV Sets (Vertical / Horizontal), 1963/1995

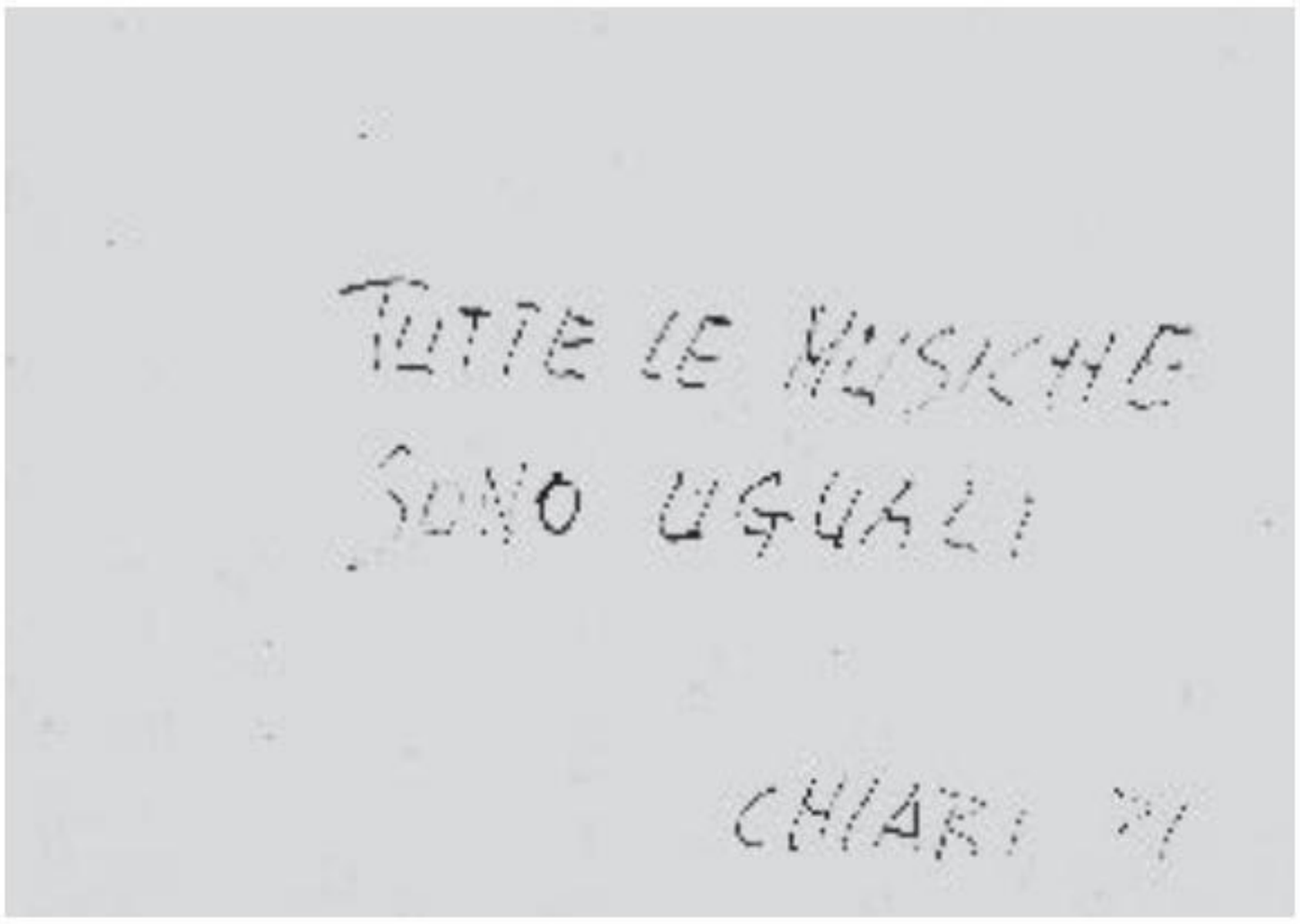
Nam June Paik and Jud Yalkut
Video Synthesizer and TV Cello
Collectibles, 1965–71





Robert Filliou
Musical Economy No. 2, 1980

Robert Filliou
Musical Economy No. 5, ca. 1971

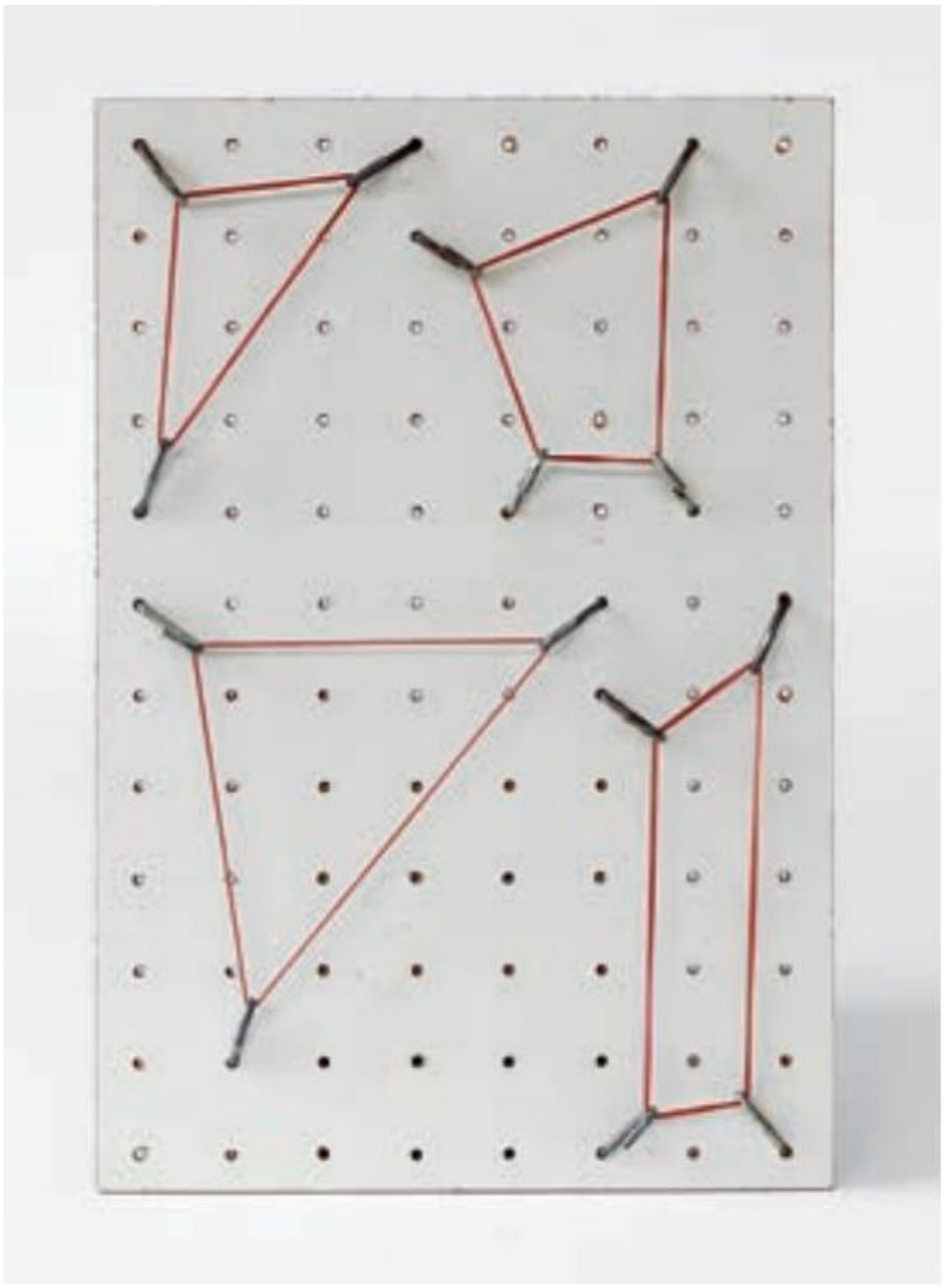


Giuseppe Chiari
Tutte le musiche sono uguali
(All Music is the Same), 1971

Gillo Dorfles
Il Metodo per suonare di Giuseppe Chiari, Martano Editore, Turin, 1976

Joe Jones
History of the Music Bike and Other Stories,
Francesco Conz,
Verona, 1977

Eduard Bal
Le dernier livre de Schmoll
(The Last Book of Schmoll),
Guy Schraenen éditeur,
Antwerp, 1977



Mauricio Kagel
Saitensprung
(Escaped from Strings), 1968

Joe Jones
Untitled, 1991

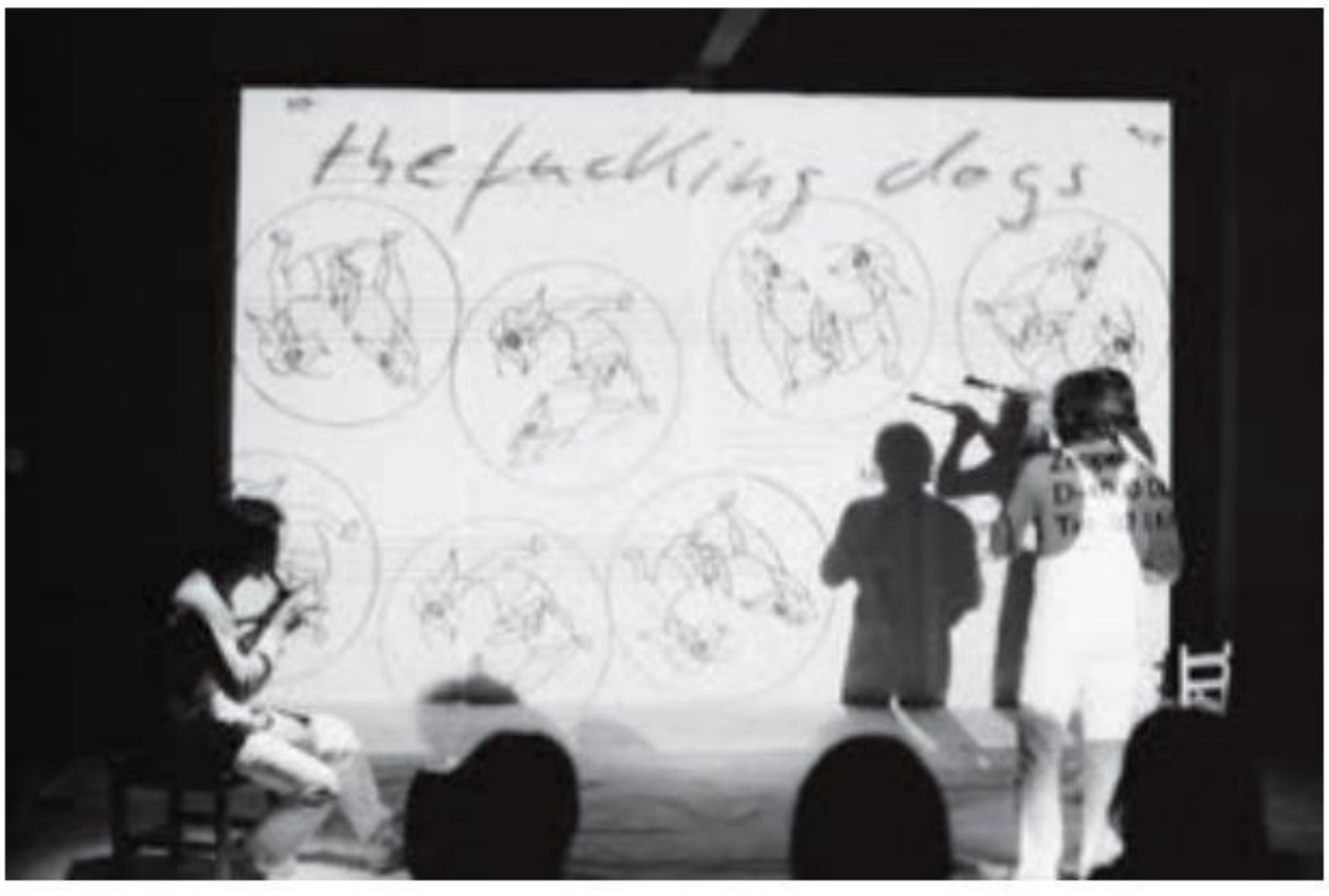
Joe Jones
Music Machine, 1974

Takako Saito
Music Bottle, 1983


Mauricio Kagel
Détour
vers une plus haute
sous-fidélité

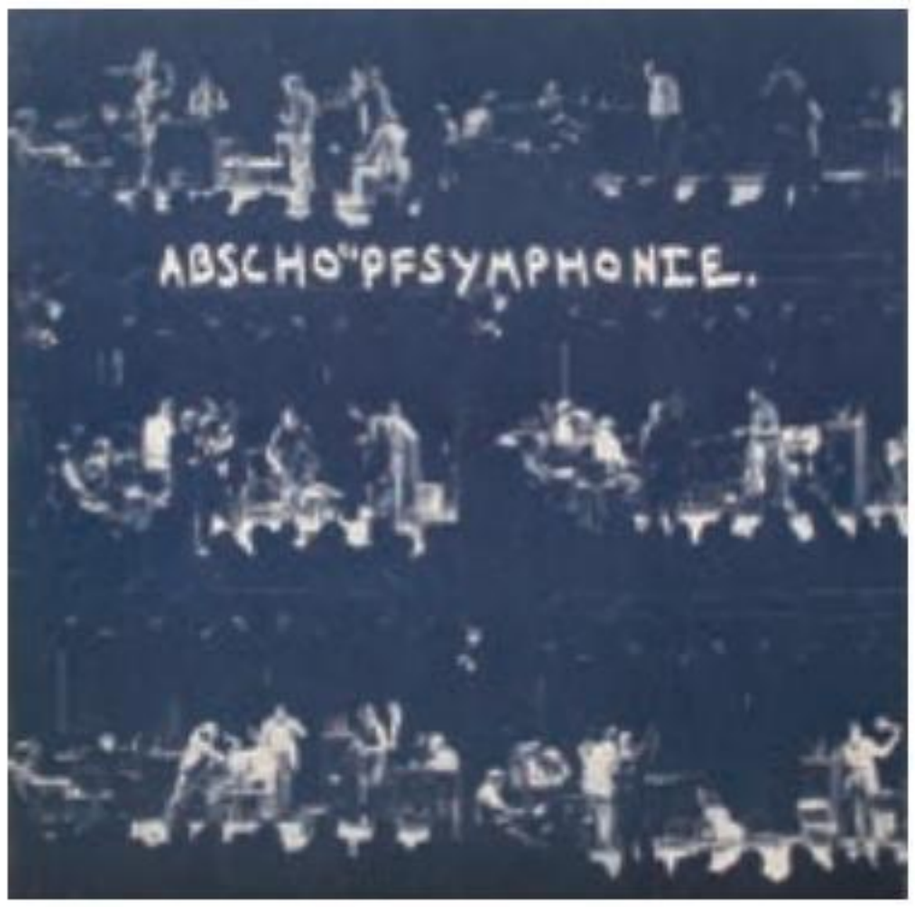
Mauricio Kagel
“Détour vers une plus haute sous-fidélité,”
in *VH 101*, no. 4, 1970

Bernard Heidsieck
and Françoise Janicot
Encoconnage,
Guy Schraenen éditeur,
Antwerp, 1974
Design and photographs
by Guy Schraenen



Guy Schraenen
Aeropus, 1982
Performance-concert

Guy Schraenen, in
collaboration with other artists
Aeropus, 1982



Dieter Roth, in collaboration
with other artists
LPs from the label Selten
Gehörte Musik, 1973–79

Dieter Roth
Relief mit zwei Trompeten
(Relief With Two Trumpets),
1962/1988

Joseph Beuys
Das Schweigen
(The Silence), 1973


: WENDE >80<

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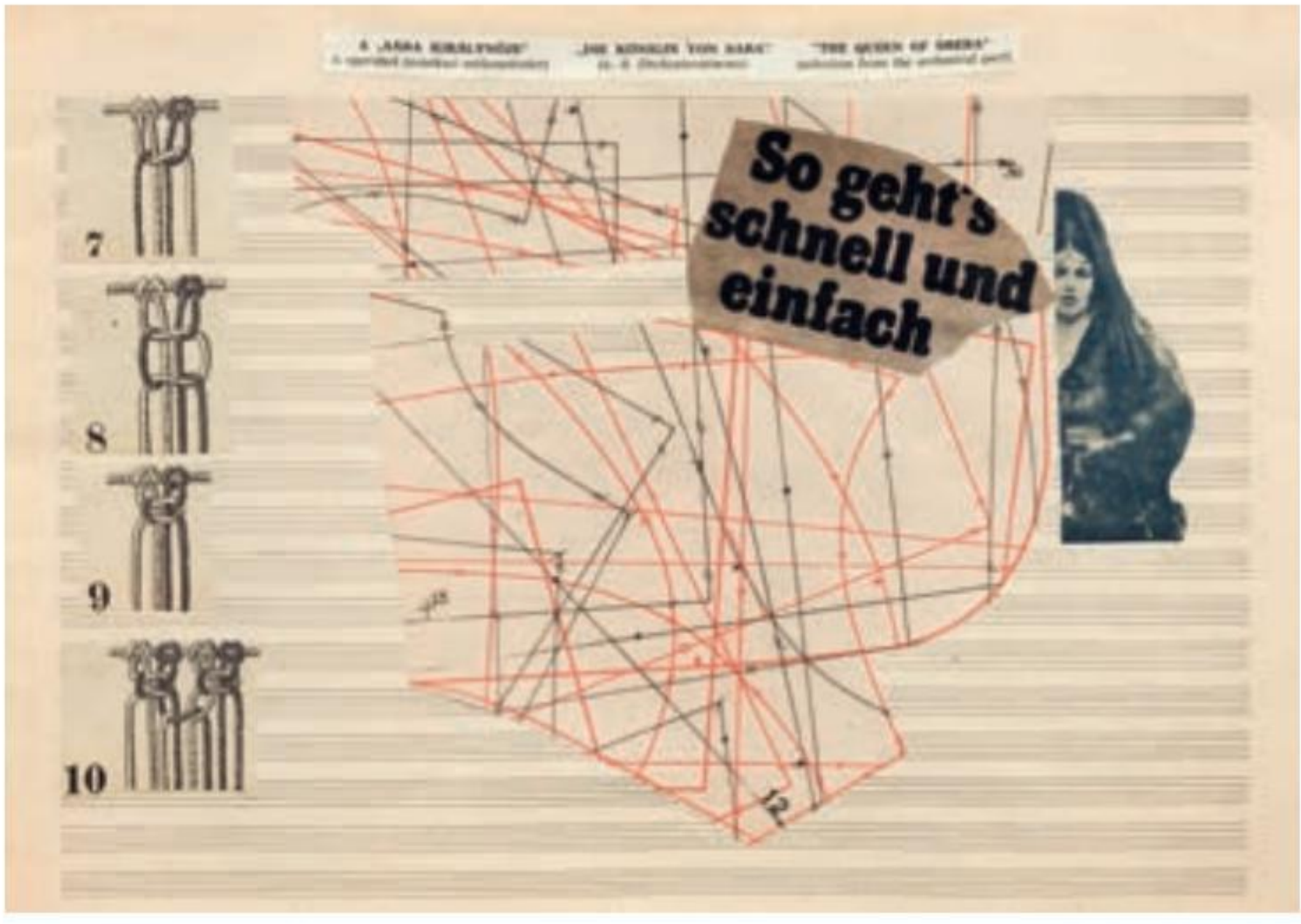
2.) Baumstudien — "Die Religionen als
3.) "38 Fragen an — Herzens" <———>
Kanzler u. Kandidat" — den Narzissen Birnbaum
DER SPIEGEL, Nr. 40 — Nr. 6 - 36. Jahrgang
4.) Baumstudien — 2. Februar 1981
5.) Opus 2, 1. → 19. — und keine weite Leiter
6.) Opus 3, 1. → 51. — mit einer sehr weiten Leere
7.) Opus 4, 1. → 51. — bevorzugt [illegible]
8.) In Gedanken an — Erste Auflage 1980/81
Alfred Döblin * <———> — ©Hanne Darboven
9.) Opus 5a, 1. → 60. — und danke dir
10.) Opus 5b, 1. → 60. — Im Selbstverlag
11.) Opus 6a, 1. → 60. — Agentur für Chemie
12.) Opus 6b, 1. → 60. — Alle Burgberg 26
13.) Harburg : 32 — Tagesstudium, Atelier
Ansichtskarten, — 2100 Hamburg 90
Januar : 1981 - — Alle Rechte Vorbehalten
Druck Sost & Co
Cuxhavener Str. 42
2104 Hamburg 92

Hanne Darboven
Wende >80<
(Turning Point >80<),
1980–81



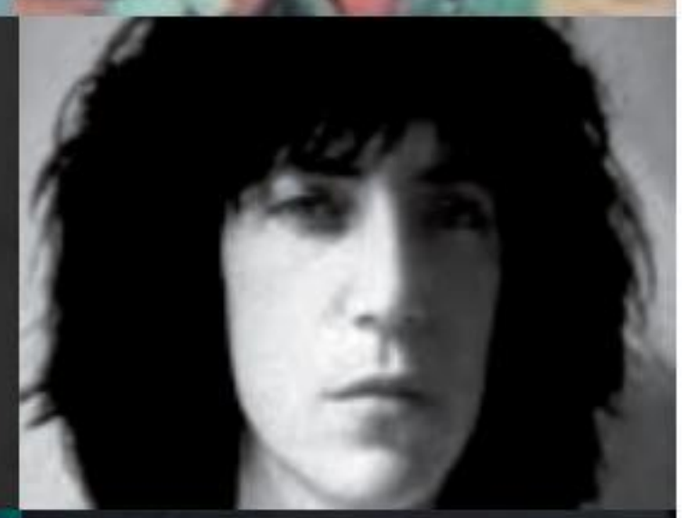
Katalin Ladik
The Queen of Sheba, 1973

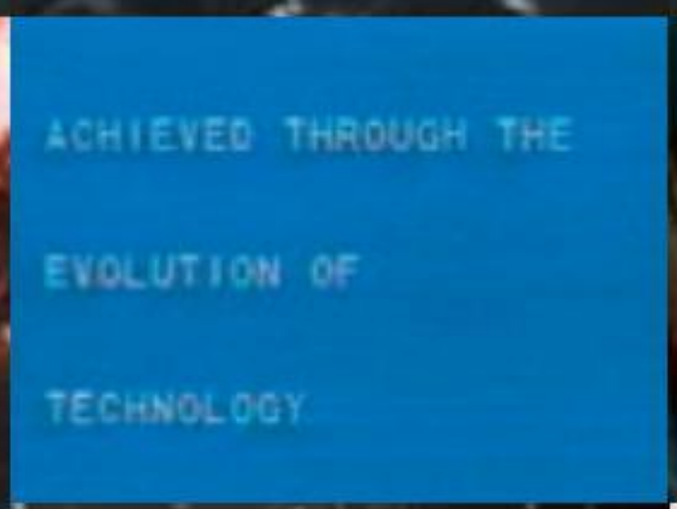
Chris Burden
The Atomic Alphabet, 1980

Ronald Nameth
Andy Warhol's Exploding Plastic Inevitable *with the Velvet Underground and Nico*, 1966

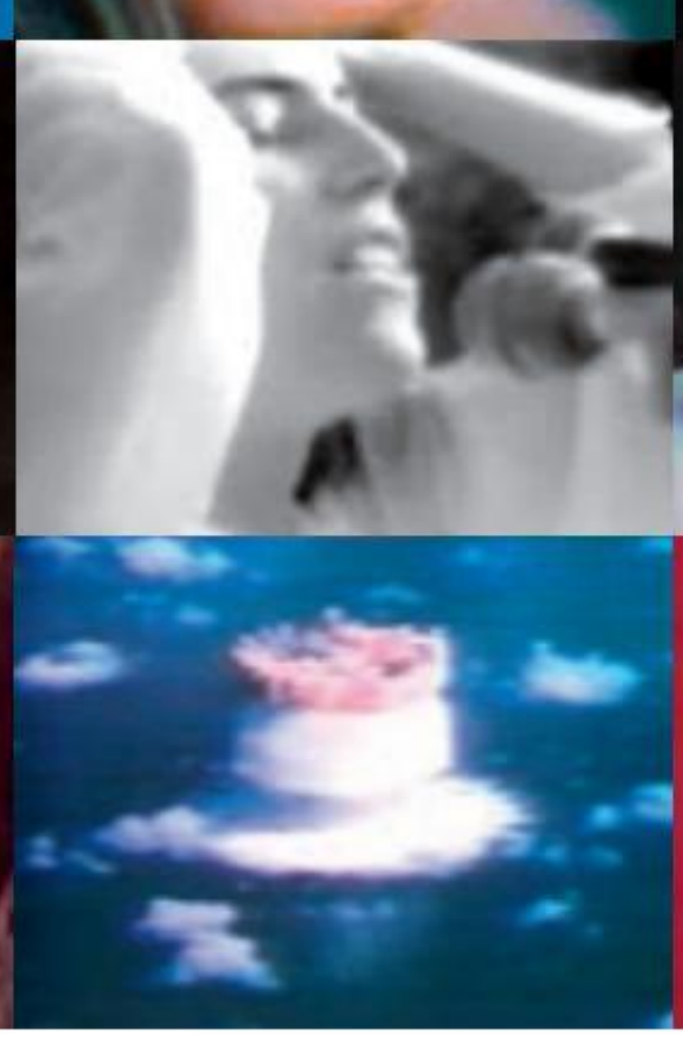
Dan Graham
Rock My Religion, 1982–84


THE PURITANS




ACHIEVED THROUGH THE
EVOLUTION OF
TECHNOLOGY


THOUGHT ROCK
WAS DEAD BECAUSE IT
HAD BECOME MERELY




FEMALE. WAS CHRIST'S
SECOND COMING.
ANN BEGAN TO PREACH
A NEW MESSAGE DERIVED

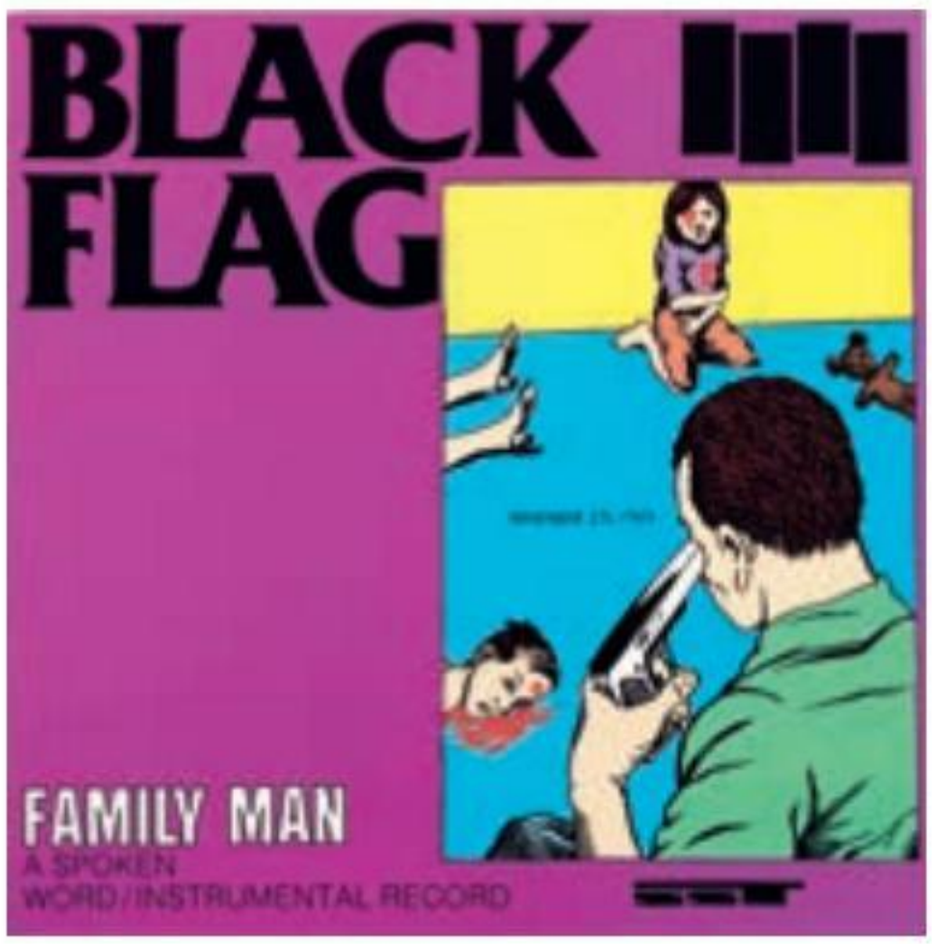
Raymond Pettibon
Sir Drone. Raymond Pettibon. Featuring Mike Kelley, 1989

Raymond Pettibon,
SST Records, Long Beach

Black Flag, *Everything Went Black*, 1982

Black Flag, *The First Four Years*, 1983

Black Flag, *Family Man*, 1983



SOUNDING VISUAL IMAGES SOUNDS

On the Development
of Multisensorial Art

Arndt Niebisch

The German dramatist and philosopher Gotthold Ephraim Lessing made an important distinction between time-based and visual art in his famous essay *Laocoon*. In this text, he provided an analysis of the ancient statue of Laocoon showing the Trojan priest fighting with the mythical sea monster. This analysis focuses on the question of how movement, in other words, temporal processes, can be represented in a static image by finding the right "fruitful" moment. Lessing emphasizes that time-based art, like poetry, arranges its material in a temporal sequence, whereas sculpture or painting puts its material side by side, displaying time only as a singular moment.[1]

Historically, this insight created a tension between visual and temporal art, and art itself attempted to transgress this separation by creating an interplay of visual and temporal representations. Especially emerging technologies, like film and its precursors, challenged this aesthetic separation, and in this essay I discuss how progressive avant-garde artists of the twentieth century created artworks and technologies that explored the interplay between sound and visual representation by departing from a scientific and technological exploration of the human being.

In the early twentieth century, avant-garde artists extended the established musical language. As an example of these musical experiments, I discuss the work of the Futurist artist Luigi Russolo, who invented an "Art of Noise." Russolo developed a new musical notation that can be traced back to his paintings dealing with light and sound waves. Another avant-garde movement, Dadaism, expanded upon Russolo's experiments. Most significantly, the Dadaist Raoul Hausmann created an "optophonetic" art that explored

the space between visual and acoustic perception with the help of the new technology of the photocell. Those media experiments by artists such as Julián Carrillo, Alois Hába, Harry Partch, Arthur Lourié, Alexander Mosolov, Ivan Wyschnegradsky, or George Antheil opened up a fruitful field of exploration throughout the twentieth century. Numerous artists tried to expand the expressive power of media by changing the way information was processed. Examples of these attempts include the sound poets of the Lettrist group like Isidore Isou or Maurice Lemaître, who reflected on the semiotic and material qualities of language.[2]

I will conclude this essay by discussing the technique of the cut-up, developed by the artist Brion Gysin, who was close to the Beat movement and continued the Dadaist technique of photomontage and collage: slicing and splicing heterogeneous material. This technique of reassembling snippets from prefabricated texts and images resonates with the way film arranges temporal sequences through montage, and it was a common experimental endeavor among avant-garde groups such as the Lettrist and sound poets. I will show how the Beat poet William S. Burroughs transferred the cut-up to the acoustic technology of the tape recorder, thereby also bridging the separation between acoustic and visual media.

All these technical experiments and aesthetic practices with sound and visualization led to the increasingly blurred border between the acoustic and the visual, which has been extended further through contemporary digital technologies capable of the sound-light transformation the avant-garde so vividly dreamed about. However, the reason why these artists were able to explore this space between music, cognition, and visuality,

were the scientific innovations born in the physiological research laboratories of the nineteenth century.

Wavelengths and the Origins of the Cinema

The scientific analysis of music and sound has a long history. One can name, for example, Ernst Chladni, who in the eighteenth century analyzed sound with the help of vibrating plates. For my discussion, I will focus on the scientist Hermann von Helmholtz, who developed an understanding of music that was based on the ability to scientifically measure psychological sensations such as pleasure when listening to music. His famous book on the sensation of tone of 1863 (*Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musik*) outlined an aesthetic theory that was no longer based on intuition but provided a physiological explanation for why one perceives certain acoustic events as beautiful and others as irritating or disturbing. Simply put, Helmholtz had the insight that acoustic events with a regular wave structure appear as sound, whereas irregular sound waves were perceived as noise.[3]

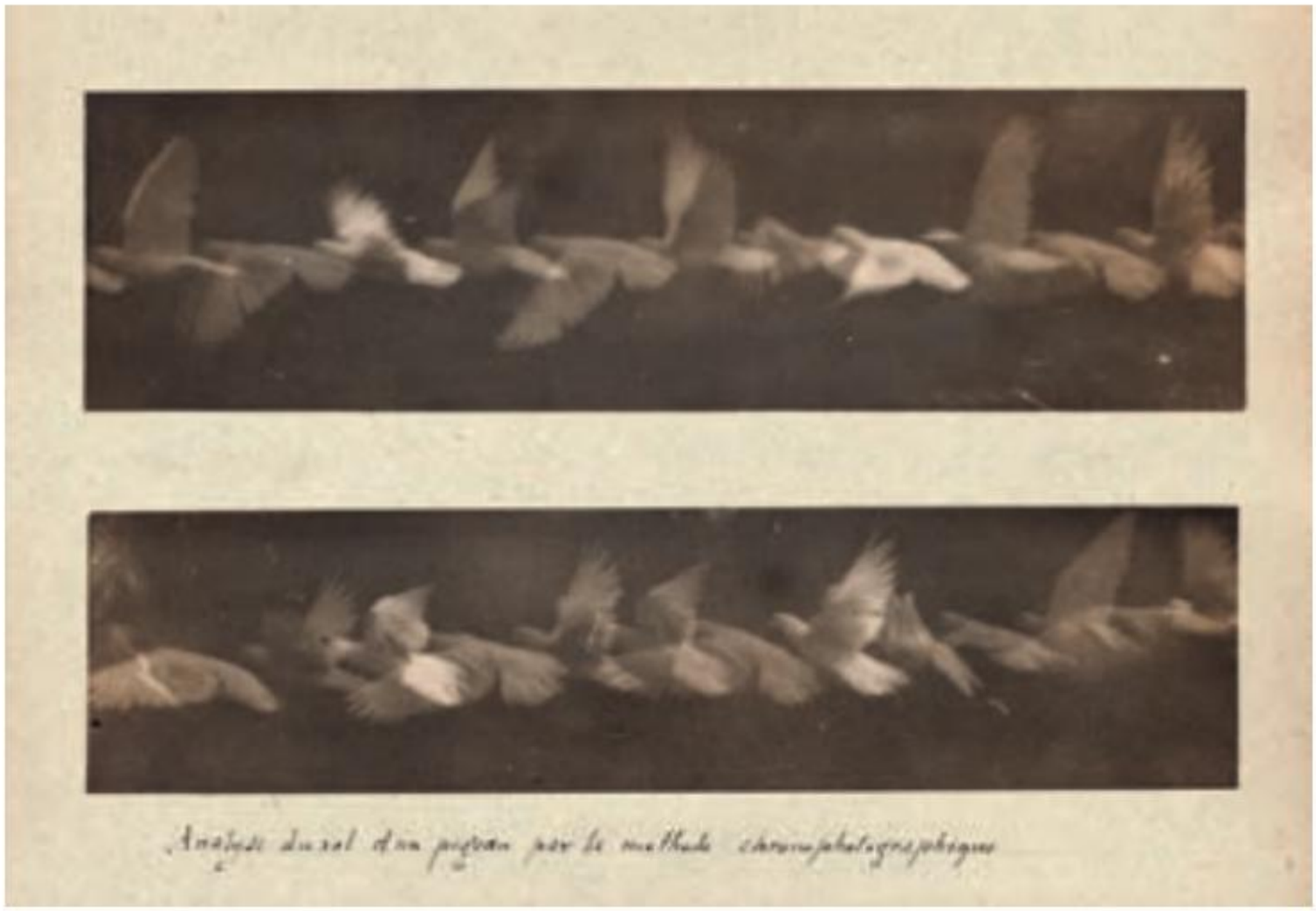
The precondition for this investigation was the ability to have a visual understanding of music and sound in the shape of a wave. In fact, Helmholtz was instrumental in developing new ways to analyze music. Sound waves are described as periodic motions that have a certain frequency.[4] This technological analysis was not only at the foundation of Helmholtz's research but a central scientific discovery of the nineteenth century, and

made it possible to think about music through the visual metaphor of a wave.

Another scientific revolution of the nineteenth century was the ability to record and analyze motion, that is, to show processes in time through visual representations. The nineteenth-century sciences created two ways for doing this: (1) segmenting continuous motion through photography by creating a series of static images; and (2) retracing motion through special devices in continuous curves/wave diagrams. The photographic approach was connected to physiologists like Eadweard Muybridge and Étienne-Jules Marey; the graphic approach became, for example, adapted in work science, most notably by Angelo Mosso.[5]

Étienne-Jules Marey was a physiologist who studied the movement of animals and men, and for this he employed the medium of photography. He took numerous pictures of a continuous motion, thereby dissecting a movement in individual phases and thus creating a visual analysis of that movement. This "chronophotography" unveiled a new perspective on movement that enabled physicians and artists to study the motion of humans and animals in more detail. In fact, this technique was a kind of inverted cinema. While the medium of film, a few decades later, took individual images and transformed them into continuous motion, chronophotography created the precondition of cinema by dissecting continuous motion into isolated elements.

Another approach to the analysis of movement was undertaken by the Italian physiologist Angelo Mosso, who studied the process of fatigue and used wave diagrams to study the exertion of a muscle. This approach transferred a process over time into a static image that consisted of a curve, and was thus connected



Étienne-Jules Marey, *Analysis of the Flight of a Pigeon by the Chronophotographic Method*, 1883–87

to Helmholtz's visualization of music. Although cinema would become the new art form of the twentieth century, Mosso's approach to visualizing temporal processes in a two-dimensional matrix, for example as a wave, was something that the avant-garde of the early twentieth century explored in great depth.[6]

Futurism:
Drawing Noise

The scientific discoveries of Helmholtz and Mosso enabled an understanding of the world as a cosmos in continual motion, and it was the art movement of Futurism that proclaimed that there should be no rest or stasis, but only the all-encompassing speed of modern

technologies. Futurism called in its manifestos for a new world and had a radical orientation toward the new and the modern. It embraced race cars, machines, and modern war; it hated museums, quietness, and pensive reflection. Futurist artists expressed a world constantly in motion. Famous examples are Umberto Boccioni's statue *Forme uniche della continuità nello spazio* (Unique Forms of Continuity in Space) or the *fotodinamismo* of the Bragaglia brothers.

This *fotodinamismo* connects in an interesting way to the cinematic experiments of the nineteenth century. The Bragaglia brothers used extended

Anton Giulio Bragaglia,
The Smoker—The Match—The Cigarette (Motion Study), 1911

exposure of the photographic image to “record” a movement through time. Through this approach they displayed a movement in a single image, but, in contrast to chronophotography, the movement was represented in a continuous motion as a kind of wave structure. It is no surprise that their privileged motif was musicians playing their instruments, thus—through technology and motif—fusing the question of how to combine visual and temporal art.[7] However, the artist who became central to the relationship of music and visuality in Futurism was Luigi Russolo. Before turning to experiments with music, he began his artistic career as a painter. His paintings show a special interest for sense perception, for example, displaying how sound and smell determine a scene.

However, Russolo did not gain much fame as a painter; instead, he became the most significant figure in the field of Futurist music. His musical aesthetics departed from Helmholtz’s understanding that sound consists of regular and noise of irregular motion in the air. Russolo wanted to enrich the field of music with noise and he designed mechanical systems, the “intonarumori” (“noise intoners”), that were able to create all kinds of different noises.[8]

In order to compose this noise music, Russolo also invented a new notational system that was based on a note-line. The idea was to no longer segment the musical language in single notes but to represent the sound as a continuous line.[9]

This notational method emerged from the technological structure of the intonarumori. These devices included different mechanisms to excite a “sound-noise,” but most of those devices had a common structure. Russolo used a rotating disc that

was activated via a lever by the musician. This disc excited a string that could also have been prepared with, for example, metal objects, and this string again was attached to a membrane. Finally, a horn like those used on gramophones was used to amplify the sound-noise coming from the membrane. The basic construction of the intonarumori was thus based on creating a continuous noise rather than a rhythmic pattern, and thus a continuous line was ideal to represent the sound it emitted.[10]

Russolo's note-line is but one example of how the avant-garde was interested in extending music through new forms of visual representation. His discussion and representation of noise point back to the mode of how he depicted multisensorial sensations in his paintings and how he understood noise as an invasive effect that is an important part of our lifeworld. The Dadaist Raoul Hausmann would take up Russolo's experiments with noise and expand it to a new form of art, bridging sound and noise in a synesthetic or "optophonetic" experience.

Dada
Optophonetics

Dada was a highly influential art movement in the early twentieth century that created absurd poems and sharp satirical collages. However, parts of the Dada movement also had a deeper scientific interest and participated in a more general attempt by the avant-garde to train the human sensorium to the demands of a modern world generated by new media, mass traffic, and also modern warfare.

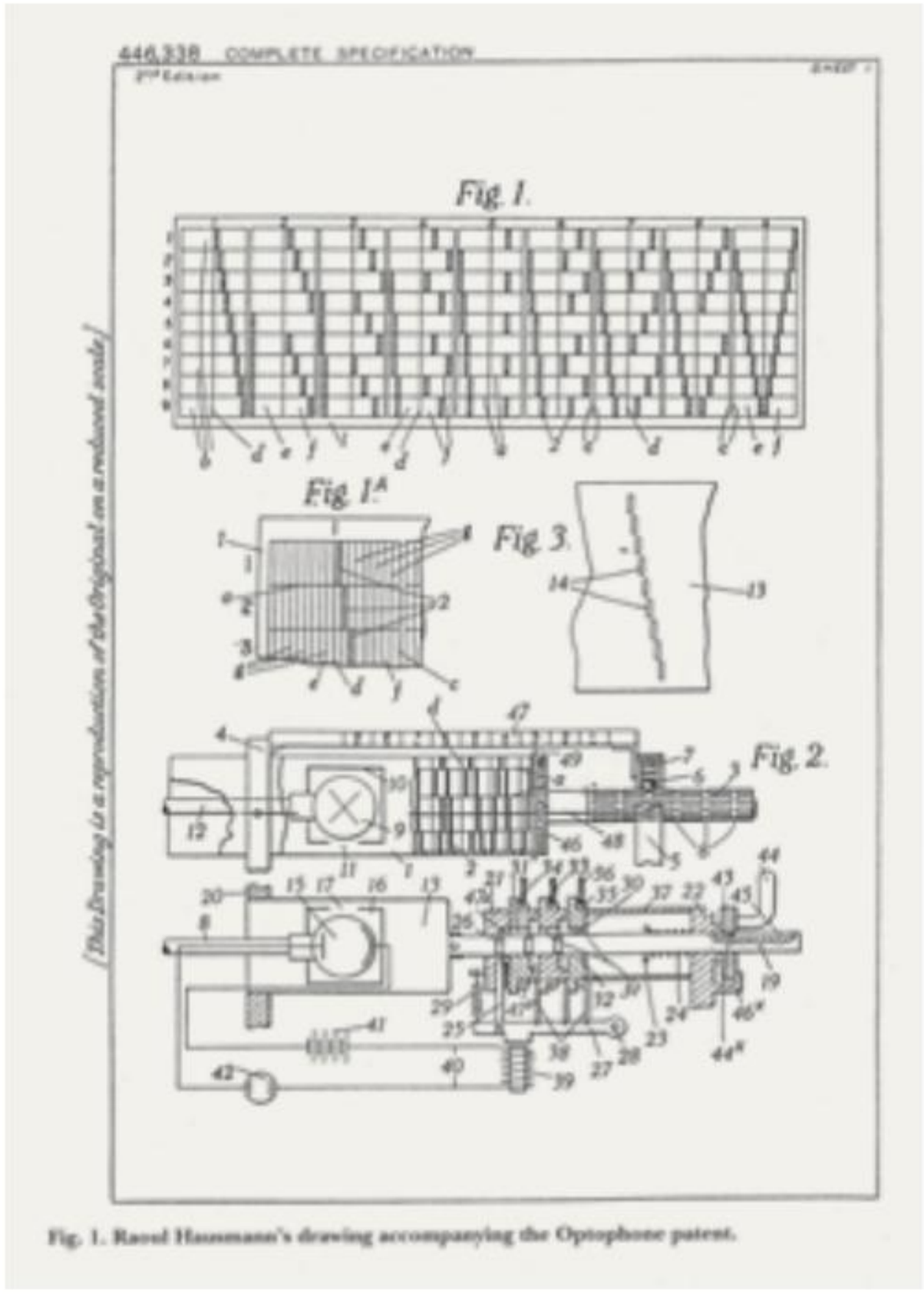


Fig. 1. Raoul Hausmann's drawing accompanying the Optophone patent.

Raoul Hausmann
and Daniel Broïdo
Patent of the optophone,
1936

One of the most significant figures of this new art movement was Raoul Hausmann. He is largely known as the head of Dada Berlin and he became famous for his collages and programmatic writings. Part of this project was the development of optophonetics.

In texts such as “PRÉsentismus,” Hausmann called for a new form of art that would train human beings for the demands of the new media environments that confronted them, with new means of transportation (car, electric trains, airplane) as well as communication (telephone and radio).[11] Hausmann’s understanding of art as an educational training tool resonated with the

agenda of other art movements, but it was founded on a very unique anthropology.

Hausmann did not understand technology as a tool external to human beings, nor did he understand technology as an extension of them; rather, he believed that technologies invented by people pointed to a hidden potential of human physiology. Most centrally, he believed that human beings would eventually be able to communicate through radio waves without the help of any technological devices, merely with their brains. He was convinced that at the heart of our perception stood an otophone, in other words, a system capable of modulating, producing, and receiving acoustic and electromagnetic waves.[12]

For Hausmann, however, optophonetics was not only a theoretical postulate or philosophical idea. He experimented with the technology of the photocell and tried to create several optophonetic devices. The light-sensitive cell was a technology widely used in the twentieth century. It found its application in smoke alarms and even a form of light telephony was developed. The most famous application was early sound film. In the early twentieth century, a system was invented that stored through the photocell the representation of sound on an optical film. For reproduction, the acoustic film was projected on a light-sensitive cell that reconverted the visual data back into sound. Hausmann was very familiar with this system and his optophone was a synesthetic sound and light converter. He wanted to design a synesthetic art.[13]

Hausmann extended Russolo's project and therefore connected to a tradition of rethinking sound and light as a wave formation that we have traced back to Helmholtz.[14] Hausmann was fascinated by the

continuous structure of both phenomena, and he thought about the interconnection primarily as a physical system; his art, however, became the experimental realm for these scientific investigations.

Of course, Dada also had a different side that did not primarily explore the scientific preconditions of aesthetics. Dada ripped the continuum of reality apart and reassembled it in collages. The Dada collage had a very satirical-ironic character. For example, Hannah Höch's and John Heartfield's collages and photomontages reassembled photographs into very clear political messages.[15] A method that extended this kind of montage in a segmentation of reality was the cut-up.

The Cut-Up

The American writer William S. Burroughs became famous for adopting the so-called cut-up method in his novels. Here, he took a finished text, cut it up, and rearranged it in a random order. In the essay "The Cut-Up Method of Brion Gysin," he reports on the origin of this method.[16]

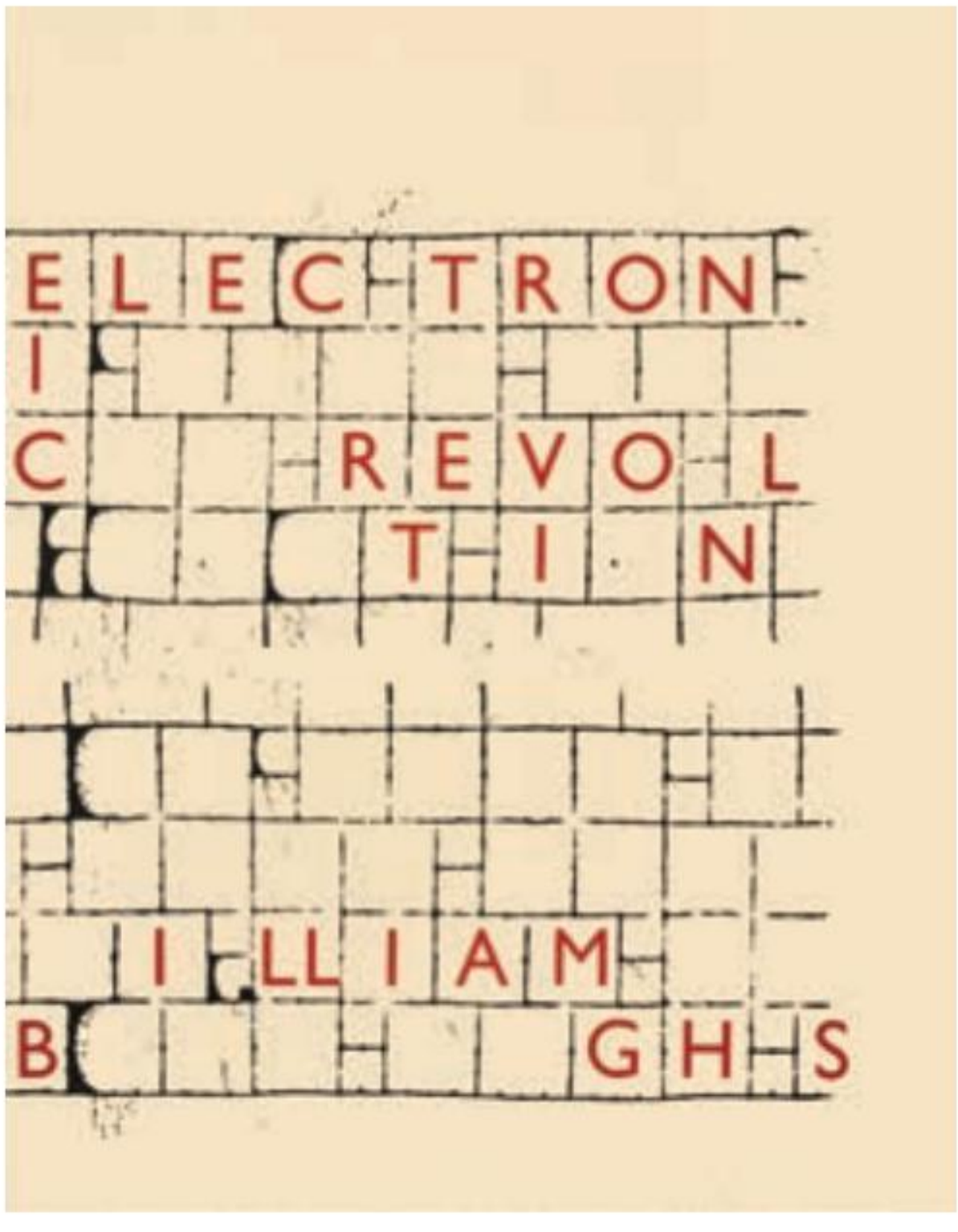
Although he recognizes his friend Brion Gysin as the inventor of the cut-up, he refers back to the Dadaist Tristan Tzara. Tzara published a text entitled "Pour faire un poème dadaïste" (To Make a Dadaist Poem), in which he provided the fundamental recipe for the cut-up method. Basically, Tzara described how a poem was assembled by selecting snippets of a newspaper article in a random way. Burroughs, however, acknowledges that this technique emerged from painting. In fact, Burroughs recognizes the cut-up as the principle structure of reality, as a synesthetic effect that is not limited to writing or painting: "Images shift sense

under the scissors smell images to sound sight to sound sound to kinesthetic."[17]

In this context, it needs to be mentioned that montage was actually a central technique of the medium of film. Early filmmakers such as Fernand Léger, René Clair, Walter Ruttmann, Dziga Vertov, and, most influentially, Sergei Eisenstein experimented with the possibility to cut up the recorded film and rearrange it in a new sequence. The differences between montage in the vein of a famous film director such as Eisenstein (who used a sophisticated form of antagonistic montage in films such as *Strike* or *Battleship Potemkin*)[18] and the cut-up, however, are significant. Eisenstein used the montage to increase the narrative capacity of film. Burroughs, in contrast, used the cut-up to display the disjointed structure of reality. It is important that Burroughs and Gysin understood their technique as a fragmentation of reality. It was not a technique where the artist would reconstruct a new totality from those parts. It is an aesthetics of disjointment.

Disjointment was the central aesthetic and cognitive agenda of Burroughs's cut-ups, and he developed in the longer essay *The Electronic Revolution* a form of guerilla warfare that transforms the cut-up technique from painting and poetry into a new montage art with the tape recorder. *The Electronic Revolution* is a very strange text that combines aesthetic theory with virology, biology, fantasies of nuclear extinction, Scientology, and much more, but it also clearly elaborates the media-technological implications of the cut-up, and the technology that serves best for Burroughs's purposes is the tape recorder.

Burroughs constructs a strange but intriguing media history that starts with the viral origin of language



William Burroughs,
The Electronic Revolution,
Expanded Media Editions,
West Berlin, 1970

and ends with a new form of media guerilla. He claims that, before the dawn of mankind, a virus infected a group of primates. The primates who survived the disease had altered larynges and were able to produce sounds that eventually turned into human language. Burroughs imagines that human language still contains this dormant virus, and that certain aesthetic techniques would be able to release the destructive force of the "word virus." Burroughs thereby suggests a media guerilla, whereby tapes constructed through cut-ups are played in public. He imagines the construction of these tapes as follows:

> On tape recorder 1 we will record speeches and conversation carefully editing in stammers

> mispronouncing, inept phrases ... the worst number 1 can assemble. Now on tape recorder 2 we will make so a love tape by bugging his bedroom. We can potentiate this tape by splicing it in with a sexual object that is inadmissible or inaccessible or both, say the senator's teenage daughter. On tape recorder 3 we will record hateful disapproving voices and splice the three recordings together at very short intervals and play them back to the senator and his constituents. This cutting and playback can be very complex involving speech scramblers and batteries of tape recorders but THE BASIC PRINCIPAL IS SIMPLY SPLICING SEX TAPE AND DISAPPROVAL TAPES IN TOGETHER.[19]

Burroughs assumes that these recordings would have the power to brainwash the recipients with unconsciousness suggestions that are only apparent through the juxtaposition of the material. For Burroughs, the cut-up is so powerful because it is disjointed and has to be reconstructed by the listener. And its power lies, according to Burroughs, in the fact that this causes the recipient to believe that it was his or her own idea.[20]

Burroughs's cut-ups are deeply rooted in a manipulative psychology; however, it also reflects on media technology and a form of art that is based on media that can be used for a cut-up. In fact, the development of the cut-up shows the history of a multimedia art that departed from visual media like collage and film and that found, according to Burroughs, its fulfillment in the acoustic technology of the tape recorder.

Conclusion

The exploration of sound and visuality can be traced along two modes of artistic practices. First, the visual representation of sound in a continuous line; and second, the segmentation of a temporal process in a sequence of static images. Both approaches were used by the avant-garde and both approaches find their technological origins in the nineteenth-century research laboratories.

While Hausmann's technological devices can be recognized as an attempt to construct a new continuum between sound and visuality or technology and humanity, Gysin and Burroughs worked toward breaking up this continuum. They abused the technological ability to splice recorded reality into fragments that no longer made sense. The function of art was now to challenge and reprogram the human mind with these disturbing cut-ups. This art transcends the avant-garde movement, where the modernist is no longer an engineer but becomes a saboteur.

Both approaches challenged Lessing's assumption that art had to be visual or temporal. Hausmann imagined a physiological and technological interface that would render this distinction meaningless. Burroughs and Gysin used the technique of montage/cut-up as a universal method to cut up the stream of narration, the consistent space of visual creation, and the flow of recorded sound. These cut-ups had the ultimate goal to show that all perception always reconstructs a totality from an infinite amount of juxtaposed impressions.

Hausmann as well as Burroughs related their artistic experiments to electronic media. However, both alluded to quite different forms of electronics. Hausmann

assumed that vacuum tubes would bring about a future art that would integrate visual art and music even more than his optophonetics.[21] Burroughs, on the other hand, referred to electronic scramblers that would be able to scramble and unscramble messages in an incredibly fast time.[22] It seems to be an irony of technology that today electronics combines these two dimensions, because all electronic processing of data is digital and thus at the foundation a cutting up of reality in imperceptibly small units. The progress of technology brings Hausmann's spectrum and Burroughs's scrambling closer together. The velocity of digital technology makes it possible for us to perceive digital data—which is nothing else than a cut-up of information in 0s and 1s—as a continuum.

1
For a concise discussion of the difference between painting and poetry, see especially chapter 16 of Gotthold Ephraim Lessing, *Laocoon* (London: Routledge 1900), 131–38. Here, Lessing defines as the object of painting juxtaposed elements and as the subject of poetry the description of temporal sequences, i.e. actions (131).

2
The French avant-garde movement Lettrism, founded in the mid-1940s, and also the German movement of Konkrete Poesie, active from the 1950 on, experimented with uses of language that did not primarily focus on the meaning transmitted by words, but, for example, on the sound representation or aesthetic appearance of the letters.

3
Helmholtz begins his book *On the Sensation of Tone* with discussing the difference between sound and noise. He states, "a musical tone strikes the ear as a perfectly undisturbed, uniform sound which remains unaltered as long as it exists, and it presents no alteration of various kinds of constituents. To this then corresponds a simple, regular kind of sensation, whereas in a noise many various sensations of musical tones are irregularly mixed up and as it were tumbled about in confusion." Hermann von Helmholtz, *On the Sensation of Tone as a Physiological Basis for the Theory of Music*, trans. Alexander J. Ellis (New York: Dover, 1954), 7–8.

4
Helmholtz explicitly points out that the vibrations of sound can also be perceived by visual and even tactile means: "The musical vibrations of solid bodies are often visible. Although they may be too rapid for the eye to follow them singly, we easily recognize that a sounding string, or tuning-fork, or the tongue of a red-pipe, is rapidly vibrating between two fixed limits, and the regular apparently immovable image that we see, notwithstanding the real motion of the body, leads us to conclude that the backward and forward motions are quite regular. In other cases we can feel the swinging motions of sonorous solids. Thus, the player feels the trembling of the reed in the mouthpiece of the clarinet, oboe, or bassoon, or of his own lips in the mouthpieces of trumpets and trombones." Helmholtz, *Sensation of Tone*, 8.

5
See Angelo Mosso, *Fatigue*, trans. M. A. and W. B. Drummond (New York: G. P. Putnam's Sons, 1904).

6
For a detailed historical study of the use and recording of waves in scientific research, see Stefan Rieger, *Schall und Rauch. Eine Mediengeschichte der Kurve* (Frankfurt am Main: Suhrkamp, 2007).

7
A comprehensive study of Futurist *fotodinamismo* is provided in Giovanni Lista, *Futurism and Photography*, ed. Stella Craigie, exh. cat. Estorick Collection of Modern Italian Art (London: Merrell Publishers, 2001).

8
Actually, Russolo deconstructed Helmholtz's distinction between sound and noise by emphasizing the timbre of a tone. Helmholtz defined timbre as follows: "It is unnecessary to explain what we mean by the force and pitch of a tone. By the quality of a tone we mean the peculiarity which distinguishes the musical tone of a violin from that of a flute or that of a clarinet, or that of the human voice, then all these instruments produce the same note at the same pitch." (Helmholtz, *Sensation of Tone*, 10.) Russolo argued that the fact that sound is always contaminated with the material sediment of its source, the timbre, means that music cannot be reduced to the abstract idea of pure sound waves. Those sounds always also carry noise, and his art of noise just emphasized this material quality of music. For a more detailed discussion of Russolo's sound noise, see Arndt Niebisch, *Media Parasites in the Early Avant-Garde: On the Abuse of Technology and Communication* (New York: Palgrave, 2012), 112–18.

9
For a detailed discussion of the note-line, see the chapter "Grafia enarmonica," in Luigi Russolo, *L'Arte dei rumori* (Milan: Edizioni Futuriste di "Poesia," 1916), 67–75; Eng.: "Enharmonic Notation," in *The Art of Noises*, trans. Barclay Brown (New York: Pendragon Press, 1986), 67–73.

10
Luciano Chessa is a musicologist who provided interesting research on the topic of the intonarumori and he also reconstructed those

devices. See his monograph *Luigi Russolo, Futurist: Noise, Visual Arts, and the Occult* (Berkley: University of California Press 2012). See also the discussion of Russolo in Niebisch, *Media Parasites*, 112–26.

11
Raoul Hausmann, "PRÉsentismus. Gegen den Puffkeismus der teutschen Seele" (1921), in *Texte bis 1933*, vol. 2: *Sieg, Triumph, Tabak mit Bohnen*, ed. Michael Erlhoff (Munich: Edition Text + Kritik, 1982), 24–30.

12
For a detailed discussion of Hausmann's scientific work, see Raoul Hausmann, *Dada-Wissenschaft. Technische und Wissenschaftliche Schriften*, ed. Arndt Niebisch (Hamburg: Philo Fine Arts, 2013).

13
For a brief overview of his work with photo cells, see Arndt Niebisch, "Dada Engineering," *Modernism/modernity* 21, no. 1 (2014): 169–277. The documentation of his patents and technical work can be found in Hausmann, *Dada-Wissenschaft*.

14
In the 1931 text "Die überzüchteten Künste" (The Overbred Arts), Hausmann explicitly discusses Russolo's experiments with noise. Raoul Hausmann, "Die überzüchteten Künste," in *Texte bis 1933*, 2:133–44.

15
For a discussion of Dada collage, see, for example, Hanne Bergius, *Dada Triumphs! Dada Berlin, 1917–1923: Artistry of Polarities: Montages. Metamechanics, Manifestations* (1996), trans. Brigitte Pichon (New Haven: G. K. Hall, 2003); or the chapter "Parasitic Media," in Niebisch, *Media Parasites*, 81–107.

16
See William S. Burroughs, "The Cut Up Method," in *The Moderns: An Anthology of New Writing in America*, ed. LeRoi Jones (New York: Corinth Books, 1963), 345–48.

17
Ibid., 347.

18
For an overview of Eisenstein's writing on film, see, for example, Richard Taylor, ed., *The Eisenstein Reader*, trans. Richard Taylor and William Powell (London: British Film Institute, 1998).

19
William S. Burroughs, *The Electronic Revolution* (West Berlin: Expanded Media Editions, 1970; Ubu Classics, 2005), 8; available online at http://www.ubu.com/historical/burroughs/electronic_revolution.pdf.

20
Ibid., 16.

21
Hausmann, "Die überzüchteten Künste," 142.

22
Burroughs, *The Electronic Revolution*, 15–16.

POETRIES OF ORALITY, BETWEEN THE BODY OF LANGUAGE AND LANGUAGE OF THE BODY:

Artaud, Lettrism,
and Sound Poetry

Christina De Simone

Antonin Artaud and Orality in the Service of a Revolution of the Body

If we are to believe the legend, in the early 1950s the Lettrist Serge Berna unearthed from a trash can in the 6th arrondissement of Paris an unfinished manuscript by Antonin Artaud entitled “Le Mexique et la civilisation” (Mexico and Civilization), which was published by Éditions Arcanes in 1953 as *Vie et Mort de Satan le Feu* (Life and Death of the Late/Fire Satan) followed by *Textes Mexicains pour un Nouveau Mythe* (Mexican Texts for a New Myth), with a preface by Berna. In this posthumous text Artaud wrote:

> A civilization that places body and spirit on opposing sides runs the risk that the bonds uniting these two dissimilar realities will become detached in a very short time.[1]

This statement could be the epigraph to the poetic and exploratory experiments involving orality that flourished in Paris just after World War II, ranging from Lettrism to action and sound poetry. Through their critique of the notion of language as separate from the body, and of poetry as separate from orality, it was the very relationship with the world, with the self, and with the other—determined by the capitalist context of the *Trente Glorieuses* (“thirty glorious years”) as well as by the postwar period, war, and decolonization—that these experiments sought to eliminate and to transform; experiments which, each in their own way, setting out from a position of social, psychological, and political vulnerability, endeavored to

surpass and exorcise this vulnerability through a return to the body and of the body.

Although such experiments can be situated in the direct lineage of those conducted by the "avant-gardes" of the first half of the twentieth century, the presence of Antonin Artaud, who returned to Paris in May 1946 after nine years of internment in psychiatric facilities, played a crucial role in their development. Artaud made a direct impact on the immediate postwar period through the renewed practice of his "theater of cruelty" in a quest that was henceforth centered on orality, in which all distinction between poet and actor was rejected, and whose purpose for Artaud was to reconstitute oneself, to liberate oneself from various forms of influence using the breath, the voice, and language invention, and, going even further, to reinvent both language and the human body; it was a search?? that Artaud experienced as a veritable revolutionary undertaking. He never ceased to pursue, transmit, and disseminate this quest, conceived during the last years of his internment, from the moment of his departure from the psychiatric hospital of Rodez until his death in March 1948. The famous radio play *Pour en finir avec le jugement de dieu* (To Have Done with the Judgment of God) is an important document of this period and also marks its culmination.[2]

In Paris, Artaud's explorations immediately revived interest in phonetic and uttered poetry; the publication in 1945 and 1946 of the two volumes of Maurice Nadeau's *Histoire du surréalisme* (*The History of Surrealism*), the publications of the Lettrist movement, or the appearance of the anthologies *La Poésie naturelle* (Natural Poetry) and *Poésie de mots inconnus* (Poetry of Unknown Words) (in which the poems of Artaud

Antonin Artaud, "L'attaque des camions de la solde," with a lithograph by Georges Braque, in Iliazd (ed.), *Poésie de mots inconnus*, 1949

appeared alongside those of Albert-Birot, Ball, Bryen, Hausmann, Iliazd, Khlebnikov, Kruchenykh, Schwitters, Seuphor, Tzara…), published in 1949 by Camille Bryen and Iliazd, respectively, are indications of this revival, or were inspired by it. But Artaud, a singular figure belonging to no movement either artistic or political, was also a reference for those who did not recognize themselves in the post-Resistance dichotomy and sought to make poetry an instrument of rebellion and change.

From the postwar period on, it was the young Lettrist poets who were particularly responsive to Artaud's explorations: not only did they follow his publications and manifestations but also, as Jean-Louis Brau explains in his biography of Artaud,[3] they also followed Artaud himself, attempting to meet him and

speak to him; and Artaud noticed them, as evidenced by the mention he makes of them (rather an unflattering mention, it must be said) in a text entitled "Chiotte à l'esprit" (Toilet in Mind).[4]

The Lettrists: Modern-Day Bards Poised for Uprising

The Lettrist movement was created in Paris during the immediate postwar period by a young Romanian of Jewish origin, Isidore Isou, who, using the letter, explored above all the domain of orality. The movement's first publication, the review *La Dictature lettriste* (The Lettrist Dictatorship), of which only one issue appeared, in 1946, alternately presented theoretical-programmatic texts and poems. In the very first text, entitled "Les principes poétiques et musicaux du mouvement lettriste" (The Poetic and Musical Principles of the Lettrist Movement), the Lettrists are presented as "modern-day bards" who compose with the letter and the voice, specifically with the spoken voice. Although Lettrism chose not to include the practice of singing, the letter being defined as "a sound that does not ascend,"[5] it did explore the various volumes of the voice, including screaming, and the whole range of phonatory sounds: lip noises, tongue clacking, breathing sounds, and so on.

A few months after the appearance of this first review, the founding Lettrist text, *Introduction à une nouvelle poésie et à une nouvelle musique* (Introduction to a New Poetry and a New Music), was published by Gallimard. In the introduction, Isou brought to the fore the themes of inexpressibility and of a language that,

according to him, had lost its ability to communicate, a recurrent notion in the postwar years. More specifically, language was presented by Isou as the principal means of censorship used by a society that prevented the new generation from expressing itself, forcing it back into a past that was not its own:

> WORDS / Result from the need to determine things. / Help the elderly remember by forcing the young to forget.[6]

Isou then proposed breaking up language to reach the letter. By means of the letter, defined as the sound unit of language, Isou sought to move away from meaning and to concentrate on sound, to remain, he wrote, in a state of "auditory comprehension." Liberated from its subservience to the word that effaces the "infrarealities," the letter would give rise to "a new poetry and a new music," capable, through its "architecture of lettric rhythms," of "making understandable and tangible the incomprehensible and vague; concretizing silence; writing the nothingness."[7]

From a linguistic perspective, Isou's definition of the "letter" is incorrect, the smallest sound unit of language being the phoneme. But his choice of term indicates a conception of orality inspired particularly by the tradition of Kabbalah, in which reading aloud is the instrument used to "dissect" the holy texts, changing the order of the letters, and listening for other combinations that might be revealing: the purpose is to rediscover the true order of the letters, lost because of Adam's sin, to seek the holy Torah beneath the written Torah. In the Kabbalah, reading aloud is therefore the ultimate process of interpretation. The permutation of letters, furthermore,

is considered to be the very process by which God created the world. At the heart of the Kabbalah, there is a performative conception of language in which to proclaim is to create, as well as a conception of the mystic quest as intrinsic to the body, and this emerges particularly in the technique of reading the permutation developed by the branch of Ecstatic Kabbalah, where the spelling of names is carried out using specific breath work.[8] Returning to the Lettrists, the new expression that they were seeking seemed to be simultaneously an anti-language and a new language, infused with the utopia of an original language; an exploration within which knowledge was first and foremost physical knowledge, pertaining to the body.

The Lettrist approach takes on its full significance if we consider the context in which it emerged and operated. Isou's movement attracted young people, mainly of Jewish origin and some of whom had participated in the Resistance: the movement, then, was burdened both with a tragic memory and with a strong sense of disappointment regarding the lack of political follow-up to the revolutionary ideas of the Resistance. The Lettrists also felt that they were maneuvering in territory that was culturally and politically saturated: on the one hand the prewar avant-garde movements were finding their way into museums and several of their protagonists were still alive and very much present, like Tristan Tzara, Iliazd, Pierre Albert-Birot, Francis Picabia, Hans Arp, Camille Bryen, Kurt Schwitters, Raoul Hausmann,[9] and especially André Breton, an essential reference for the Lettrists; on the other hand, the cultural territory was "controlled" by Jean-Paul Sartre's *Les Temps modernes* and the Comité national des écrivains (CNE, National Writers' Committee) of the French Communist

Party presided by Elsa Triolet and Louis Aragon, a circle that the Lettrists frequented.

In spite of, or because of, such a context, and confronting their sentiment of exclusion, the Lettrists strove to occupy a prominent place on this cultural scene, presenting themselves as the new postwar avant-garde. This did not fail to generate strong protests from the "elders," who published or republished their works in order to demonstrate the anteriority of their investigations.[10]

The Lettrists considered this exclusion to be a condition common to their entire generation, and it was for this reason that in 1950 they founded a political movement, the Front de la jeunesse (Youth Front), which resumed and synthesized Isou's reflections in his *Traité d'économie nucléaire* (Treaty on Nuclear Economy), significantly subtitled *Soulèvement de la jeunesse* (Youth Uprising). The Lettrists defined young people as a new social class, not necessarily characterized by their age but by a situation of marginalization, or, according to Lettrist terminology, of "externality," as opposed to the domain of the active, the "interns." Faced with a system that aimed to keep the "seated" in their place and to exclude the mass of exploited young people, starting by stifling their voices, the Lettrists had to make themselves heard, literally.

By attacking existing language, the Lettrists made orality an instrument for the conquest of the present and of a presence, a tool for deciphering reality, deconstructing it, and recreating it. This quest for a performative language expressed the Lettrists' desire to liberate themselves from a world that they did not recognize, in which they struggled to find their place and where they had difficulty finding any meaning. By separating the signified from the signifier

and concentrating only on the latter, the Lettrist poets sought meaning in reverse, moving away from reason and habits and listening to what sound conveys by itself. Moreover, they endeavored to move beyond arbitrariness, beginning with the rediscovery of the body: simultaneously the body of the poet—whose voice, breath, or the sounds produced by his hands or mouth became poetic material—and the body of the language. In a text published in the bulletin of the Front de la jeunesse, Jean-Louis Brau defined the Lettrists as the "body of youth" (*corps de la jeunesse*), a metaphor that, in the context of their poetic activity, reveals an articulation central to Lettrism: that between the practice of performance—which reintegrates the poet's body through sounds ranging from the breath to the scream—and the desire for action or even for uprising.

In the light of this desire for uprising, the Lettrists also regarded orality as an arm with which they could storm the public space, take up a place there and transform it. They employed various modes of intervention: for example they organized recitals in the famous cellars of Saint-Germain-des-Prés—Le Tabou, Le Relais-Odéon, La Rose Rouge—frequented by the zazous.[11] They also improvised in such places and allowed themselves to be influenced by the jazz music popularized in Paris by French orchestras, in particular Boris Vian's orchestra, and by the arrival of famous musicians from the United States. As Isou and his comrades indicated, *scat singing* made the greatest impact on them due to its proximity to phonetic poetry. Employing improvisation, rhythm work, and tones that made no distinction between musical sound and noise, between the voice and the scream, this music led them toward a liberation of the body.

The Lettrists also improvised in the streets during their wanderings; François Dufrêne, for example, transformed advertising announcements into Lettrist poems. But the Lettrists became known above all for their intentional interruptions within particular contexts: in this respect we can evoke Gabriel Pomerand, who disrupted a performance of Tzara's play *La Fuite* (The Escape) with the cry "Dada is dead! Lettrism has taken its place," followed by a Lettrist declamation; or Jean-Louis Brau, who performed a Lettrist poem about workers' struggles in the middle of a CNE meeting; or Gil J Wolman, who unleashed a medley of screams, mouth sounds, and breathing noises during a meeting of the Paul Valéry literary circle, to the astonishment of all present. These incursions and improvisations—which resuscitated the Dadaist and Surrealist actions in public places—soon contributed to a caesura within the Lettrist movement, since it was probably during these inopportune performances that Wolman and Dufrêne conceived their desire to not only go beyond the letter but also beyond every other written medium.

"Quick: off the page!":[12] Wolman's Megapneumes, Dufrêne's Crirythmes, and Chopin's Audiopoems

According to Isou's conception, the letter was also a means of notation and the poem transcribed on the page a player in the performance, fulfilling a function comparable with that of a musical score. More precisely, it was a support that *tensioned* the performance. While Lettrist poems were born in the spoken form and then

Gil J Wolman,
"Introduction à Wolman,"
Ur. Cahiers pour un dictat culturel (Paris), no. 1, 1950

transcribed, their performance followed the opposite route and became an act of deciphering. Thanks to innovative layouts and original signs, the process of recognition is slowed down in a Lettrist score so that each letter acquires its own sound value. Reading aloud is a fundamental aspect of Lettrist poetry: firstly, it permits the performer to give his full attention to the enactment, "playing" the letters as and when they are discovered (as opposed to learning them by heart, which would result in a rigid interpretation); and secondly, as a sound composition the poem has no value unless it is pronounced, and therefore projected into the space. Thus the reader becomes a *reciter* who must address all their attention to the sound and rhythmic materiality of the composition and know how to play the modulations of their voice and their body.

Introduction à Wolman

Ivre était son fils.
Au début il y avait Wolman.
Cependant, Ivre avait tiré la structure même du mot et lorsqu'il les soumettait dans un ordre véritable, Combinaisons admirables qui lui révélèrent une réalisation conceptuelle. Ivre n'écrit-il pas du Lettrisme qu'il est : « La destruction du mot pour le Rien — l'arrangement du Rien — la lettre — pour la création du Transmots. »

C'était la seule issue possible avec la lettre, valeur immuable. Il fallait détruire la lettre

WOLMAN DESINTEGRE LA CONSONNE, déchaîne la consonne de la voyelle. Wolman rend à la voyelle sa puissance hiéroglyphique abstraite.

Désintégration de la consonne

BG(1) CG(1) DG(1) GF GG(1) GK(1) JG(1) KG(1) GR.
GM GN PG(1) QG(1) GR GS. TG(1) VG(1) GX ZG(1).

Wolman les détruit du SOUFFLE et les structuralise.

1) NEUTRES ex. : K

Wolman structuralise tout SOUFFLE.

② Expiré	k	v	A leurs mesures (4 Temps)
③ Inspiré	k	^	
④ Longue neutre	K	..	A leur durée ici 2 temps
⑤ Longue inspirée	K	.^.	
⑥ Longue expirée	K	.v.	
⑦ Suivie de silence	K	← ←	A leur durée Ici 3 temps par rapport à la lettre neutre A ou parure différence de caractère
⑧ Plus forte ⑤	K		
⑨ Plus forte ⑦	K		
⑩ Plus forte ④	K		

N.B : W = ou

CHACUNE DE CES LETTRES amplifiées peuvent être
1) neutre
2) expirée
3) inspirée
4) longue neutre
5) longue inspirée
6) longue expirée
7) suivie de silence

Avec les voyelles Wolman procède inversement : le souffle devient structurel, se révèle vu à vu de la voyelle.

V	A
◇	E
‹	I
^	O

le processeur structurel reste le dernier argument de la « mort créatrice de la Matière » proclamée par Ivre.

L'unité de mesure de Wolman est le temps-seconde dans le carré inscrit à ses angles. Wolman découvre 4 rythmes audibles dans la seconde.

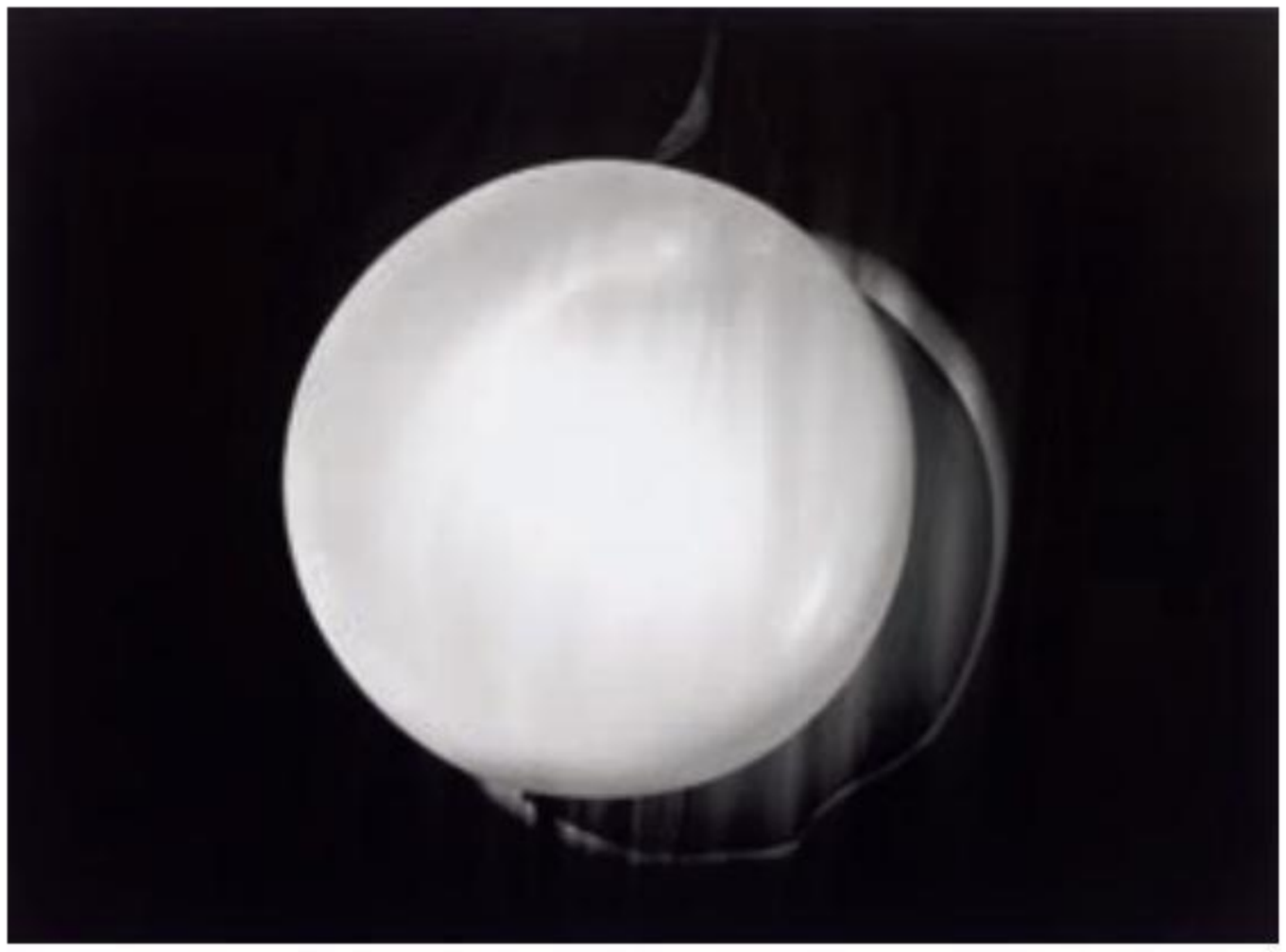
Temps : 4 rythmes
Silence : 2 temps
Longueur : 6 rythmes
L'intervalle neutre : 1 rythme
L'intervalle bleu : 2 rythmes
La lettre neutre : 1 rythme

De chaque lettre émane une masse de vibrations connues interdites. Pour pallier aux faillites de l'oreille, Wolman introduit la simultanéisme visuel (introduction des lignes et de la couleur). Devant l'impossibilité d'anéantissement totale de la voix, Wolman s'adjoint le relief. Ainsi amorce-t-il l'Art intégral qu'il est en train de réaliser avec a a a et CP-Matériaux.

Δ

La pensée qui saisit l'esprit ne s'intègre pas dans la raison : elle est fonctionnelle. Le dépassement de soi (fonctionnel) permet toutes les créations.

GIL J. WOLMAN



Gil J Wolman
L'Anticoncept
(The Anti-Concept),
1951

In contrast to these operations of transcription and deciphering, Wolman, from the very first year of his involvement with the Lettrist movement in 1950, advocated "assaulting" the letter, as he announced in his manifesto "Introduction à Wolman" published in the first issue of the Lettrist revue *Ur. Cahiers pour un dictat culturel*.[13] To this end, he composed pieces based exclusively on "permutations of buccal sounds"[14] and breathing, sounds that rendered paradoxical any attempt at notation. More precisely, Wolman sought to work with different types of respiratory sounds, as if he were situated inside his own body, near the lungs.[15] In this way he attained a form of poetry that he described as "a-linguistic" and "organic," a form of poetry that was not addressed to the intellect of the auditor but which aimed to enter directly into his nervous system and to act physically, like a blow. In other words, Wolman proposed to work only with the very source of utterance, the breath, aspiring to *touch* the audience through the system that is primordial in the transmission of signals and thus the

basis of perception. Megapneumy sought, via the breath of the poet, to set the nerves of the auditor on edge in a revised interpretation of the Artaudian Theater of Cruelty At the end of Wolman's experimental film significantly entitled *L'Anticoncept* (The Anti-Concept, 1951), we can hear an early example of the megapneume, a particularly important one in that Wolman also manipulated the magnetic band, thereby associating proclamation and electroacoustic experimentation.[16]

Following on from Wolman, Dufrêne likewise affirmed the need to transcend the letter, announcing in 1957 the birth of Ultra-Lettrism, which he considered to be both "a prolongation of and a rupture with Isidore Isou's Lettrism of 1946."[17] Dufrêne specified in several manifestos, of which the first is "Fausse Route. Demi-tour gauche pour un cri automatique" (Wrong Track: Left U-Turn for an Automatic Scream, 1953), the articulation of two new imperatives: firstly, moving away from all systems of notation, which had proved inadequate for taking into account all the sounds emitted by the poet; secondly, adopting the tape recorder as a tool for recording and composition because it enabled the poet to be as close as possible to the performance. Thus Dufrêne elaborated what he called "crirythmes," compositions that were entirely improvised, that did not exist in written form either before or after their creation, and whose material consisted in infralinguistic sounds, "pure phonemes" preceding the formation not only of words but also of syllables. In other words, the crirythme was not phonetic poetry but "phonatory" poetry, "endeavoring to make audible the organic and instinctive substrates of the voice and of the spoken word (breath, sighs, wheezes, modifications, modulations, laughs, screams)."[18]

In the text “D’un pré-lettrisme à l’ultra-lettrisme” (From a Pre-Lettrism to Ultra-Lettrism), Dufrêne depicts Artaud as a leading figure in this transcendence of the letter and of Lettrism. But he also emphasizes the continuity of his own experiments under the name of Mômo from the time of his entry into Isou’s movement in 1946, evidenced in the title of one of his first Lettrist poems, composed at the age of sixteen: “J’interroge et j’invective, poème à hurler à la mémoire d’Antonin Artaud” (I question and I curse, poem to be shouted in memory of Antonin Artaud). It is in this sense that we can understand the title “From a Pre-Lettrism to Ultra-Lettrism”: Artaud, whose investigations preceded Lettrism, also guided Dufrêne to Ultra-Lettrism, the moment of emancipation in which Dufrêne liberated himself both from Lettrism and from writing by reconnecting with the Artaudian aspiration to get off the page.

Through this departure from written notation and their immersion in the sounds of the phonatory body, Wolman and Dufrêne pursued the utopian quest for a performative language into which they had been initiated by the Lettrism of Isou. But in the transcendence of the phonetic sound that they practiced, the desire to abandon all separation between spirit and body, between sound and meaning, was radicalized by means of a total immersion in the pure matter of utterance. The tape recorder played a fundamental role in these explorations and not only because by replacing writing it made possible, according to these poets, a direct relationship between composition and utterance. Dufrêne emphasized another aspect that was equally important if not more so: the tape recorder enabled the poet to hear his own voice in all its acoustic subtlety. In other words, the fidelity of the tape recorder is a

"fidelity to excess,"[19] as Dufrêne wrote: reproduction, precisely because it is mechanical, independent from the process of selection that characterizes all forms of auditory subjectivity, renders audible what is inaudible to the ear alone and thus enables the poet to continue experimenting on the level of pure utterance, aided by the possibility of manipulation presented by the cassette tape. Making audible and working with infralinguistic sounds signified for Dufrêne the extension of the "sphere of the communicable"[20] beyond the confines of known language.

Wolman with his megapneumes and Dufrêne with his crirythmes inaugurated de facto a new domain of poetic experimentation, bringing together orality and sound technology, a poetic domain that Henri Chopin would name "sound poetry" a few years later. Chopin continued this exploration of the phonatory body in his "audiopoems," less in an attempt to communicate the impact of a body that screams, rises up, or asphyxiates, as in the works of Wolman and Dufrêne, than in an attentive auscultation, like a long acoustic "tracking shot" immersed in the depths of the breath. This auscultation was carried out by means of the microphone, employed as a probe that penetrated the vocal apparatus and permitted the discovery of an unexpected world of sound, as well as by means of electroacoustic manipulations. By contacting a sound dimension that lay below the level of linguistic articulation, and by "expanding" the voice to the limits of recognizability,[21] Chopin created a form of utterance that existed only through sound technology, conceived as a sensorial prolongation. Poised between his desire to retrieve the hidden origins of human expression and that of attaining an expanded perception, Chopin

confronted his traumatic experience in World War II, associated with confinement and death.[22] Through his sound poetry he wanted to celebrate life in and with the body: a body that was simply a body, vulnerable but vibrant, exuberant, lusting, in constant movement and metamorphosis, ceaselessly developing in its multiplicity and multivocity.

Technically speaking, these investigations were developed through contact with electroacoustic experimentation and the frequentation of specially equipped radio studios, initially that of the Swedish production and broadcasting company Fylkingen, which from 1968 organized an international festival of experimental poetry and music, Text-Sound Compositions. The initiative for the festival's first edition came from the composer Bengt Emil Johnson: during a visit to Paris, Johnson had got to know the work of Dufrêne, Chopin, and Bernard Heidsieck (the other leading figure of poetry-performance in France); consequently, he conceived the project of the festival and invited these artists to Stockholm. This festival marked a turning point in the history of poetry performance: in the first place, it facilitated encounters between poets and composers from different countries; but, above all, Fylkingen made a radio studio and sound technicians available to the poets and enabled them to benefit from the support of the Moderna Museet of Stockholm to release records. Chopin, Dufrêne, and Heidsieck, however, always made a distinction between sound poetry and experimental music, defining their practice as a form of poetry in space, in which poet and performer coincide and in which the poet works with their own vocal material or, better still, with their own "speaking body."

1
Antonin Artaud, "Le Mexique et la civilisation" (1935–36), in *Œuvres*, ed. Évelyne Grossman, Collection Quarto (Paris: Gallimard, 2004), 678.

2
Cristina De Simone, "Le théâtre d'un souffleur de verre. La recherche du dernier Artaud (1945–1948)," in *Proféractions! Poésie en action à Paris (1946–1969)*, Collection L'Écart absolu (Dijon: Les presses du réel, 2018), 19–123.

3
Jean-Louis Brau, *Antonin Artaud* (Paris: La Table Ronde, 1971).

4
Antonin Artaud, "Chiotte à l'esprit," *Tel Quel* (Paris), no. 3 (Fall 1960).

5
Isidore Isou, "Les principes poétiques et musicaux du mouvement lettriste," *La Dictature lettriste* (Paris), no. 1 (1946): 18.

6
Isidore Isou, "Le manifeste de la poésie lettriste," in *Introduction à une nouvelle poésie et à une nouvelle musique* (Paris: Gallimard, 1947), n.p.; translated into English as "The Manifesto of Lettrist Poetry," trans. David W. Seaman, in *Lettrisme: Into the Present*, ed. Stephen C. Foster, exh. cat. University of Iowa Museum of Art, Iowa City, special issue of *Visible Language* 17, no. 3 (July 1983): 71.

7
Ibid.; Eng.: 73.

8
See Umberto Eco, "Kabbalism and Lullism in Modern Culture" and "The Kabbalistic Pansemioticism," in *The Search for the Perfect Language*, trans. James Fentress (Malden, MA: Blackwell, 1995), 117–43 and 25–33.

9
Kurt Schwitters (who died in 1948, the same year as Artaud) and Raoul Hausmann did not live in Paris, but had several links with the capital, especially Hausmann, who from Limoges closely followed the Parisian poetic and intellectual scene in a way that was often polemical.

10
This was the case for Iliazd, Bryen, Hausmann, and Schwitters.

11
During the days of the Lettrists, the "zazous" were young people that gathered around the nightclubs in Saint-Germain-des-Prés, where they danced to swing music. Under the Occupation, they stood out for their original attitudes and style, going against the social mandates of the time. In particular, they displayed a disengaged attitude to politics and the military.

12
François Dufrêne, "Pragmatique du crirythme" (1953), in *Archi-Made*, ed. Didier Semin in conjunction with Marie-Anne Sichère (Paris: ENSBA, 2005), 115–16.

13
Gil J Wolman, "Introduction à Wolman," in *Défense de mourir* (Paris: Allia, 2001), 13.

14
Henri Chopin, *Poésie sonore internationale* (Paris: Jean-Michel Place, 1979), 56.

15
See Kaira M. Cabañas, *Off-Screen Cinema: Isidore Isou and the Lettrist Avant-Garde* (Chicago and London: University of Chicago Press, 2014), 90.

16
This megapneume also shows Wolman's sense of humor: I allow the listeners judge for themselves. https://ubusound.memoryoftheworld.org/Gil_J_Wolman/Wolman_Gil_L_Anticoncept/Wolman_Gil_L_Anticoncept_08_Post_scriptum_1999.mp3 (Megapneume from *L'Anticoncept*, experimental film by Gil J Wolman, 1952).

17
François Dufrêne, interview with Pierre Restany, "L'avant-garde," on *En français dans le texte*, presented by Louis Pauwels, Chaîne 1, ORTF, April 25, 1961.

18
Jean-Pierre Bobillot, *Poésie sonore. Éléments de typologie historique* (Paris: Le Clou dans le Fer, 2009), 43.

19
Dufrêne, "Pragmatique du crirythme," 259.

20
François Dufrêne, "Le crirythme et le reste" (1967), in *Archi-Made*, ed. Semin, 287.

21
See Henri Chopin, *La poésie sonore et le cri*, *Licence: musiques, arts, littérature*, no. 0 (Paris: Association Licences, 2000), 9.

22
See Cristina De Simone, "Henri Chopin et l'invention de la voix," in *Dispositifs sonores. Corps, scènes, atmosphères*, ed. Jean-Marc Larrue et al. (Montreal: Les Presses de l'Université de Montréal, 2019), 83–101.

OPENING DOORS

Javier Ariza

One of the many possible readings of the twentieth century is that which investigates the poetics of sound as matter and as a physical phenomenon in artistic practices. However, owing to multiple interferences, the structure of this narrative is rhizomatic rather than linear. This singularity means that each of us is free to trace our own path, since references, stimuli, motivations, and influences emerge in a multifocal way and feed back off each other, independently of disciplines, artistic currents, and supposed genealogies.

There was a flash at the dawn of the twentieth century, with the aesthetic defense of machines and of the musical value of noise in the century's first historical avant-garde, Futurism.[1] The word was emancipated from its traditional metaphorical medium, and the echo of its liberating spirit spread through the arts, giving rise to surprising intersections between what were then discrete disciplines such as music and the plastic arts. An example is embodied by the painter Luigi Russolo, both for his daring in publishing his impassioned theoretical manifesto *L'Arte dei rumori* (*The Art of Noises*, 1913), and for his determination to put it into practice with fellow painter Ugo Piatti. The culmination of his audacity took place in the familiar context of conventional music: on a theater stage, in front of an audience, playing his own scores on the enigmatic instruments he had built, which he referred to by the generic name "intonarumori" ("noise intoners"). The tenacity, attitude, and rigor of his performance made him, as an artist, equal to any musician in the ordinary sense.[2]

Russolo's manifesto indicated some of the ways in which sound would spread across disciplines in the course of the twentieth century. It hailed the physical dimension of sound at the service of the visual

arts;[3] it advocated a methodology of research into the creative construction of devices that allow performers to modulate sound-noise as a musical value through the vibration of the material used; it blurred the boundaries that traditionally separated the plastic arts and music; it introduced two aspects in relation to the sound of matter (one more pragmatic, in the sense of the creation of a new musical instrument, the other more poetic, in the sense of matter as a sculptural object with sound attributes); and, finally, it suggested the possibility of creative work inspired by the sounds of everyday life as a means of exploring new media, spaces, and exhibition formats.

The construction of a "musical instrument" in this context is connected to the traditional image of the luthier, who reconstructs certain shapes and sounds based on a given model. However, those creating devices from the perspective of the visual arts, unlike traditional luthiers, faced the challenge of obtaining new forms, and through them new sounds. They could do this either through the creative exploration of the sound properties of matter, or through a new experimental—not virtuoso—approach to playing the constructed objects. This shift in the shape, function, and playing of instruments branched out in many directions throughout the twentieth century. In dialogue with the arts, Harry Partch, a pioneer in building and playing new musical instruments, defended music as a field of individual creative research. In his influential book *Genesis of a Music* (1949), Partch noted that the musicians of his time had an unprecedented historical opportunity to make creative contributions, on a personal level, comparable to those that were occurring in the visual arts.[4] In dialogue with music, the versatile Bauhaus-trained architect Jean Weinfeld was attracted by the shapes of traditional musical instruments, which

he believed were imbued with the memory of silent sounds accumulated throughout their history.[5] In the 1980s, motivated by this idea, he built a series of original string instruments he called “fonics,” which doubled as sculptures.[6] Weinfeld claimed that the presence of the stretched strings in the objects automatically suggested a conceptual link to a musical instrument in the minds of those who saw them.[7] The multiplicity of positions vis-à-vis a work also concerns the creator, not just the spectator. The brothers François and Bernard Baschet saw their work as a form of boundary-crossing research integrating the skills of musicians, sculptors, poets, craftsmen, and stage directors. Their sound structures and sculptures often offer formal solutions that are not immediately recognizable as musical instruments. They are mostly made of rods and thin sheets of metal, curved and folded in a clear reference to Japanese origami, and sometimes even incorporate delicate glass.[8] The brothers believed that their works could be theoretically approached from two angles: as musical instruments on which to perform concerts, and as object-sculptures for exhibition.[9] All in all, the Baschets’ sound sculptures conveyed a didactic message and fulfilled a social function that since the 1950s had been enriched by research into new forms and the quest for different sonorities. Their works encouraged manual interaction with a creative audience, forgoing any kind of electric or electronic means. In this way, the art scene gradually incorporated a field of participatory sculpture in which touch, percussion, and the manual exploration of the physical components is required to produce sound. Other examples include the enigmatic metal works by Reinhold Pieper Marxhausen, Harry Bertoia’s vertical “sonambients,” and the stone sculptures by Elmar

Daucher, who, inspired by an ancestral practice, explores the sounds of resonating stone blocks carved with precise parallel cuts.

In the course of the twentieth century, many artists alluded to the referential nature of musical instruments as visual allegory. Examples of works that express this idea through a silent aesthetic include Man Ray's *Le Violon d'Ingres* (Ingres's Violin, 1924), and Joseph Beuys's *Homogeneous Infiltration for Piano* (1966) and *Homogeneous Infiltration for Cello* (1967). Other artists directly used instruments in combination with different objects or integrated mechanisms in order to achieve new sounds. The artist Joe Jones, associated with Fluxus, did this repeatedly, even displaying a collection of assorted sound machines in the window of his own music store (1968–70). Sound was produced by the movement triggered by small motors, powered by batteries, electricity, or solar cells. John Cage conceptually transmuted the sound of the piano from 1938 onward through the insertion of different objects, giving rise to the now familiar term, "prepared piano." In contrast to Cage's interventions, which did not damage the instruments, many artists—notably those associated with the Fluxus movement—altered the sound of musical instruments by means of violent physical modifications or interventions. These artists demystified the fetish value of the musical instrument through a new approach to performance (with sometimes irreversible effects on the physical integrity of the instrument), in line with the instructions issued by Tristan Tzara in his Dada manifesto: "Musicians smash your blind instruments on the stage."[10] This message is reflected in scores by Robert Bozzi (*Choice 3*, *Choice 8*, *Choice 12, Variation*, and *Choice 16*, all from 1966), George Maciunas (*Solo*

for Violin, 1962), Nam June Paik (*One for Violin*, 1962), and Philip Corner (*Piano Activities*, 1962), to name a few.[11] The destruction or apparent abuse of musical instruments by Fluxus artists should not be interpreted as irreverence, but rather as a sign of transgression of cultural conventions that is in perfect harmony with their Dada predecessors.[12] The same can be said, in another context, of Annea Lockwood's *Piano Burning* (1968), whose unequivocal title refers to the sound produced by the action and effect of fire on a piano until it is reduced to ashes. The aesthetic of this piece reflects the evanescence of matter that is as fragile and ephemeral as sound. Other artists like Laurie Anderson, with her modified violins, and Nam June Paik, with works like *TV Cello* (1971), reinterpret musical instruments from an electronic perspective that subverts and transforms both their formal and conceptual aspects and their relationship with the performer.

The links between physical matter and sound expanded with the contributions of an artist who was a major influence on twentieth-century art, Marcel Duchamp. In one of his notes—which are both brief and suggestive—he mentions the terms "musical sculpture" and "sound sculpture": "Musical sculpture. Sounds lasting and leaving from different places and forming a sounding sculpture that lasts."[13] He reformulates the same idea in another note, in which he suggests creating "an immense Venus de Milo made of sounds around the listener."[14] Both notes offer the possibility of creating an artwork consisting exclusively of three-dimensional, enveloping arrangements of sound. Likewise, they both refer to the process of the dematerialization of the work of art, and herald a new kind of permeable work, in which the center is undefined and has shifted toward the

Annea Lockwood
Piano Burning, 1968

spectator. The practical implementation of such an open protocol is a creative challenge because it allows an infinite number of possible combinations of aspects such as the duration of sound, the volume, the characteristics of the space, the number and type of sound sources, their degree of visibility, and the presence and compatibility of other objects. Consequently, Duchamp discovered in Alexander Calder's delicate mobile sculptures points in common with the artistic philosophy he had already expressed in previous works such as *Roue de bicyclette* (Bicycle Wheel, 1913) and *Rotative plaques verre (optique de précision)* (Rotary Glass Plaques [Precision Optics], 1920). Both artists shared an interest in chance and indeterminacy, in exploring art as play, and in kinetics as the transmutation of matter. Duchamp emphasized the multisensory aspect of Calder's mobiles when he said, "The symphony is complete when color and sound join in and call on our senses to follow the unwritten score."[15] Incidental sound was inherent to Calder's kinetic sculptures. Its perception by spectators brings us close to Duchamp's notion of "infrathin" to refer to subtle and almost unnoticed phenomena. This idea of the sensory perception of infinitesimal or barely noticeable events coincides with the sentiments expressed by Filippo Tommaso Marinetti and Pino Masnata in the manifesto "La Radia" (1933), which claimed that "La Radia" would be: "The reception, amplification, and transfiguration of vibrations emitted by matter. Just as today we listen to the song of the forest and the sea so tomorrow shall we be seduced by the vibrations of a diamond or a flower."[16] This hypothesis was corroborated in the course of the twentieth century by many hybrid creations that placed equal emphasis on sound and visual aspects. Examples of this include Leif Brush's project for a forest *Inside*

the Hidden Landscape (1978); Richard Lerman's works exploring the use of contact microphones to amplify the sound of objects; Terry Fox's project *Instruments to be Played by the Movement of the Earth* (1987); and the remarkable work of Greek artist Takis, who is interested in rendering visible and audible the invisible forces that interact with the material world, such as, for example, electromagnetism. From a purely conceptual context, Robert Morris acoustically expressed the invisibility of the creative process in *Box with the Sound of Its Own Making* (1961).

As a result of the incorporation of movement into sculpture in the course of the twentieth century—whether by natural, mechanical, or electromechanical means—incidental sound and noise became an inseparable part of artworks. Through a symbiotic relationship, many works were intentionally produced to explore this new attribute. Their acoustic organization offers varying levels of emphasis. Jean Tinguely's kinetic sculptural machines embody a critique of industrial society and visually display their mechanical components—gears, structures, motors, connections, and electronic devices—to intensify the primitive, almost organic expression of the noisy, chaotic technology that forms them. In this sense, his sculpture-performance *Homage to New York* (1960) is one of the works that best expresses the visceral nature of the noise emitted by an incomprehensible mechanical being that self-destructs. At the opposite aesthetic pole, Pol Bury's kinetic sculptures visually conceal the electromechanical elements that transfer movement to the exterior. The formal elements, which are often organic and indeterminate in shape, move very slowly in a dance that generates an ethereal emanation of small

Terry Fox, *Instruments to be Played by the Movement of the Earth*, 1987

sounds requiring attentive, careful listening. At the same time, there are works in which the sound is not caused by the kinetic movement of the sculpture, but depends on the movement and interaction of visitors within an electronic setting, as in LUGAN's *Grifos sonoros* (Faucets with Sound, 1972).

In a cross-cutting context such as this, it is clear that the line between kinetic sculpture and sound sculpture is blurred. The catalogue of the exhibition *Sound Sculpture* (1975) describes the term as "a new form of art."[17] This suggestive claim, however, draws attention to the complexity that results from the attempt to unify such a varied range of approaches and expressions, which are often individual in nature and include works that aspire to be instrumental, sculptural, graphic, performative, ambient, and based on new media. Contemplating sculpture in an expanded context brings

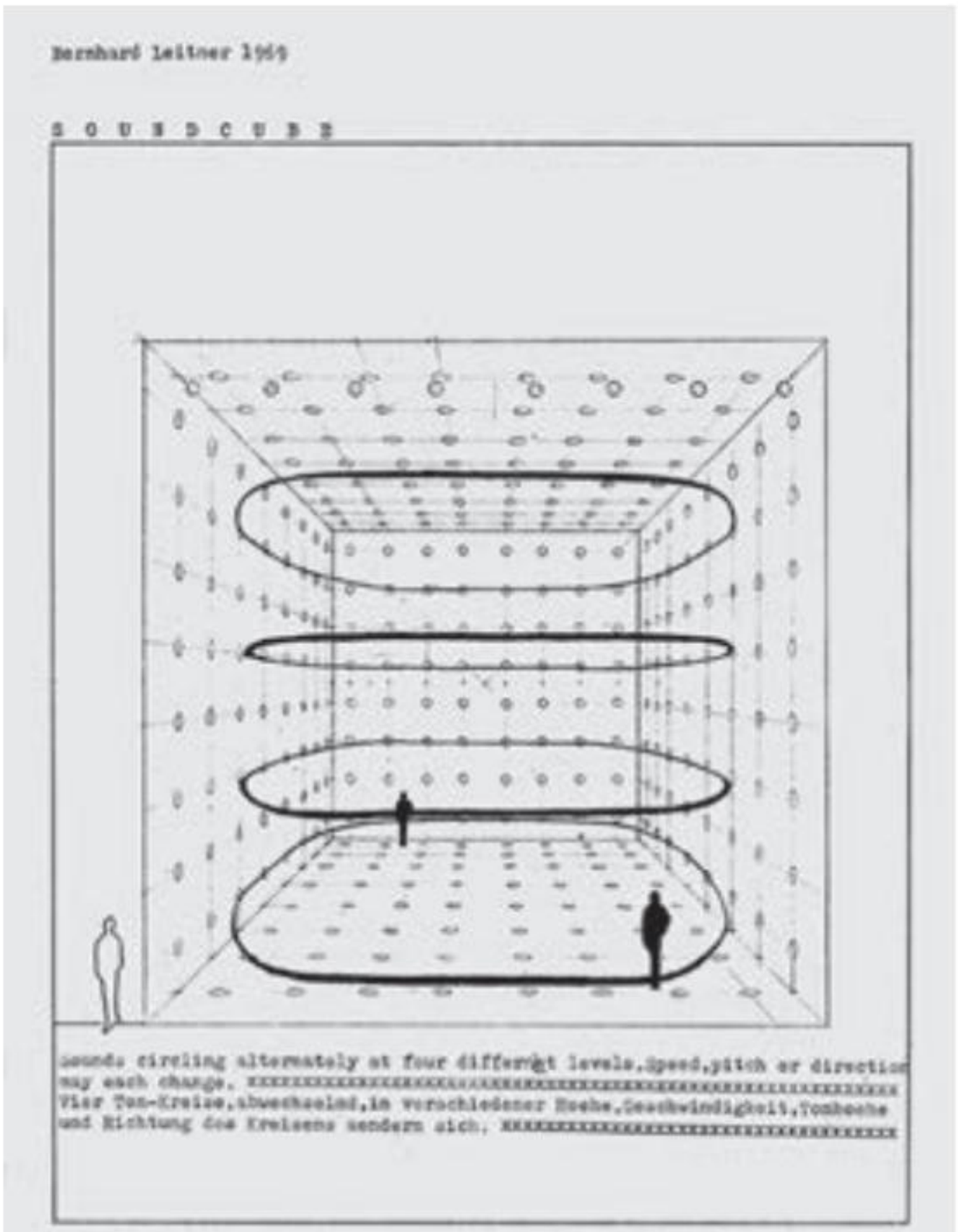
to mind the words written by Rosalind Krauss in 1979: "the category has now been forced to cover such a heterogeneity that it is, itself, in danger of collapsing."[18] Thus we recognize the importance of the increasing presence of the term "sound art" from 1983 onward to encompass many different forms of expression from various fields (including sculpture and sound installation), bringing in different points of view that enrich the perception of sound as a common objective.[19] In this sense, Duchamp's description of sound as musical sculpture was significant for twentieth century art in two ways. On the one hand, it was a plea for hearing over the dominant sense of sight. At the same time, it was a declaration of the creative act as a common territory, free of disciplinary barriers. In *À bruit secret* (With Hidden Noise, 1916), Duchamp presents an intellectual puzzle: a sculpture in which the potential source of sound is inaccessible to the beholder, drawing attention to the inability of sight or sound to come up with a definite answer to the unsolvable enigma inherent in it. This work also makes reference to chance and indeterminacy, and to the latent richness of an apparent silence filled with infinite possibilities of sound. Duchamp influenced John Cage, who shared his views when he said that the perception of ambient sounds defines a room, and that they become sculptural.[20] There are countless works that illustrate this concept from different perspectives. Cage himself implemented it in various spaces, scales, and formats: from a minimal formalization in *4′33″* (1952), to the multidisciplinary *Musicircus* events organized from 1967. Alvin Lucier reflected the resonance of specific rooms in *I Am Sitting in a Room* (1969), and Paul Panhuysen did so from the 1980s through his famous long string installations, which crossed the interior and

exterior of buildings. Nicolas Collins exemplified the concept in installations such as *Under the Sun* (1976), which explores the acoustic properties of architecture through the sound generated by a vibrating string. Isidoro Valcárcel Medina did so through the gradual accumulation of sounds in his installation *A continuación. Un relato en doce jornadas: lugares, sonidos, palabras* (Next. A Tale in Twelve Days: Places, Sounds, Words, 1970), and Max Neuhaus, in 1977, with an unusual installation in Times Square that reminds us of the words of William Hellermann, transcribed by Don Goddard, suggesting that "hearing is another form of seeing."[21] Meanwhile, the work of the artist and architect Bernhard Leitner highlights the sculptural status of sound from the twentieth century onward as a result of the many technologies that allow it to be moved in any direction. Leitner avoids using the term "music" in reference to his own works, which he explicitly links to the plastic arts. Instead, he describes them as sound spaces or sculptures, since he uses sound as a sculptural medium, combined with other materials such as wood, glass, and plastic.[22] These immersive sound architectures, which he has been making since the 1960s, are characterized by the use of multiple speakers to create a multichannel sound environment.[23] Finally, Laurie Anderson treats the body as architecture in her magnificent work *Handphone Table* (1978), in which listeners are able to acoustically perceive sound waves transmitted through objects and their bodies.

Other works—such as Cage's *Rozart Mix* (1965) and *33 1/3* (1969), and William Anastasi's *The World's Greatest Music* (1977)—illustrate the interest of many artists in the construction of sound spaces through the use of multiple technological playback sources, with

a particular emphasis on tape recorders and record players. Sound reproduction equipment was no longer merely a means of playing sound, it became a creative medium.[24] These technological instruments—recording and reproduction devices, amplifiers, cables, speakers, microphones, headphones, plugs, music stands, television sets, radio sets, and so on—started to be presented as central elements, inseparable from artistic works that transmute their essence to technological media, and at the same time convey the physical aspect

Bernhard Leitner, *Soundcube*, 1969



of media in a new electronic era. These works are often visually displayed in space without downplaying the presence of technical components, which is largely what they are comprised of. A paradigmatic example of the juxtaposition of languages and the creative subversion of technology is Nam June Paik's iconic 1963 exhibition *Exposition of Music—Electronic Television*, at Galerie Parnass in Wuppertal.[25] From a technological point of view, the electronic components of these sculptures articulate their own raison d'être, insofar as they refer to a disembodied essence developed in a new material. This idea is also conveyed by sound artists such as Peter Vogel and Walter Giers. In contrast to this liquid conception of sound, there are also more solid approaches, in which sound is presented as an element of everyday life through the use of household objects. As for hybrid acoustic spaces, examples can be found in the work of artists such as Dick Higgins, with *Mechanical Music No. 1* (1959), and Wolf Vostell, with *Fluxus-Sinfonie für 40 Staubsauger* (Fluxus Symphony for 40 Vacuum Cleaners, 1976).

In these works, audio media such as vinyl records and cassette tapes are not just consumer products but also allegorical objects that translate the intangible and ephemeral nature of sound into palpable, portable matter. Their poetic, self-referential quality has been a creative stimulus for artists using them as malleable matter and sculptural elements, as in Milan Knížák's *Destroyed Music*, made from physically modified vinyl records from 1965 onward. These types of works seek to establish a synesthetic link with sound through the visual display of the media on which it was recorded. They influenced artists such as Sarkis, who used magnetic audio tape—released from its case and in

complete visual chaos—as a formless material in some of his sculptures and installations dating from the 1980s. Other artists such as Rolf Julius in *Sound Cooking* (1984) and Takehisa Kosugi with *Interspection for 54 Sounds* (1980), alluded to synesthesia from a haptic approach to sound. Their installations manage to visually convey sound waves through the physical material that partially covers the vibrating cones of the speakers, establishing a multisensory relationship that endows sound with a body, an energy that relays it.[26]

The twentieth century saw the transformation and translation of energy into new expressive forms. In relation to sound, this included the suggestive process of making the immaterial tangible, and the invisible visible. The aim of avant-garde artists is to "open doors," as the Baschet brothers wrote in a metaphorical sense.[27] Throughout the past century, the opening of these doors has allowed circulation and convergence on a scale and intensity unprecedented in the history of art. Through them, the essence of an art of noises flowed in multiple directions, enriching artistic practice with a multisensory, interdisciplinary understanding. Like the echo of a sound from the sphere of experimental music, but perfectly applicable to the visual arts, we are enveloped by a reflection written by John Cage in 1955, which many artists still consider valid: "music (the imaginary separation of hearing from the other senses) does not exist."[28]

1
The founding manifesto of Futurism was published in the Paris newspaper *Le Figaro*, on February 20, 1909.

2
The manifesto "L'Arte dei rumori" was published in Milan on March 11, 1913. In 1916, Luigi Russolo published his book *L'Arte dei rumori* (Milan: Edizioni Futuriste di "Poesia"); Eng. *The Art of Noises*, trans. Barclay Brown (New York: Pendragon Press, 1986).

3
"We finally have *noise-sound* material capable of assuming without exception all the forms that the futurist artist may wish and know how to give them." Russolo, *The Art of Noises*, 66.

4
Harry Partch, *Genesis of a Music: An Account of a Creative Work, Its Roots and Its Fulfillments* (1949), 2nd enlarged ed. (New York: Da Capo Press, 1974), xviii.

5
Sound Art: Sound as a Medium Art, exhibition at ZKM | Center for Art and Media Karlsruhe, 2012–13.

6
The LP *Dïngx* (1985) includes compositions by Myster Shadow-Sky performed on original instruments by Jean Weinfeld.

7
Jean Weinfeld, "Witness of a Century," in René van Peer, *Interviews with Sound Artists Taking Part in the Festival ECHO: The Images of Sound II* (Eindhoven: Het Apollohuis, 1987), 39–40.

8
Écouter par les yeux. Objets et environnements sonores, exh. cat. ARC – Musée d'Art moderne de la Ville de Paris (Paris: ARC, 1980), 48.

9
Bernard Baschet, "Structures sonores," *Leonardo* 1, no. 4 (October 1968): 393–403.

10
Tristan Tzara, "Proclamation sans pretention," *Die Schammade* 1 (February 1920); Eng.: "Unpretentious Proclamation," in *Seven Dada Manifestos and Lampisteries*, trans. Barbara Wright (London: Calder Publications, 1977; 4th ed. 1992), 16.

11
Scores compiled in *The Fluxus Performance Workbook*, ed. Ken Friedman, special issue, *El Djarida Magazine*, no. 9 (1990).

12
The transformation of matter as a perceptible change in space and time was sensed by Man Ray for very different reasons in *Object to Be Destroyed* (1923–32). This visual-sound synthesis work is accompanied by instructions establishing that it is to be destroyed in a single hammer blow, in *This Quarter* 5, no. 1 (September 1932): 55.

13
Marcel Duchamp, *La Mariée mise à nu par ses célibataires, même (Boîte verte)* (The Bride Stripped Bare by Her Bachelors, Even [The Green Box]), 1934, includes documents, diagrams, and notes made from 1912 to 1915.

14
Paul Matisse, ed. and trans., *Marcel Duchamp: Notes* (Boston: G. K. Hall, 1983), note 183.

15
Marcel Duchamp, cited in Michel Seuphor, *The Sculpture of This Century: Dictionary of Modern Sculpture*, trans. Haakon Chevalier (New York: G. Braziller, 1959), 85.

16
Filippo Tommaso Marinetti and Pino Masnata, "La Radia," *La Gazzetta del Popolo*, September 22, 1933; Eng.: "La Radia," trans. Stephen Sartarelli, in *Wireless Imagination: Sound, Radio, and the Avant-Garde*, ed. Douglas Kahn and Gregory Whitehead (Cambridge, MA: MIT Press, 1992), 267.

17
John Grayson, *Sound Sculpture: A Collection of Essays by Artists Surveying the Techniques, Applications and Future Directions of Sound Sculpture* (Vancouver: A.R.C. Publications, 1975), back cover.

18
Rosalind Krauss, "Sculpture in the Expanded Field," *October* 8 (Spring 1979): 33.

19
We make this time reference in relation with the exhibition *Sound/Art* held in New York in 1983 and curated by William Hellermann, founder of the Sound Art Foundation in 1982.

20
José Luis García del Busto, "John Cage: Hay que hacer que los sonidos sean libres," *El País*, May 4, 1984, https://elpais.com/diario/1984/05/04/cultura/452469608_850215.html.

21
Don Goddard, "Sound/Art: Living Presences," in *Sound/Art*, ed. William Hellermann, exh. cat. The Sculpture Center, New York; BACA/DCC Gallery, Brooklyn (New York: The Foundation, 1983), n.p.

22
Bernhard Leitner, conversation with Bettina Krogemann, Art 43 Basel, 2012; available online at https://vernissage.tv/2012/06/19/bernhard-leitner-sound-suit-georg-kargl-fine-arts-art-43-basel/.

23
This characteristic makes it possible to create acoustic movement between them, prompting listeners to explore the space. Leitner's work combines works that people can move through—*Sound Tube* (1971) and *Sound Lines Sculpture* (1972)—and others that allow the three-dimensional perception of sound, not just aurally, but also as vibration conveyed through matter and the body—*Sound Chair* (1975), *Sound Suit* (1975), and *Portable Space* (1975).

24
See László Moholy-Nagy, "Neue Gestaltung in der Musik. Möglichkeiten des Grammophons," *Der Sturm* 14, no. 7 (1923): 102–6; Eng.: "New Form in Music: Potentialities of the Phonograph," in *Moholy-Nagy*, ed. Krisztina Passuth (New York: Thames and Hudson, 1985), 291–92.

25
The use of the electronic image in video format through television sets took on great importance, with the TV understood as both container (object) and content (medium) creating a work in which the two were inseparable.

26
The expression of sound as body and anonymous identity is expressed in Gary Hill's unsettling *Mediations* (1979–86).

27
Écouter par les yeux, 48.

28
John Cage, "Experimental Music: Doctrine" (1955), in *Silence: Lectures and Writings* (Cambridge, MA: MIT Press, 1961), 14.

SOUND ART AND ELECTROACOUSTICS FROM A LATIN AMERICAN PERSPECTIVE

Unofficial Histories
of a Forgotten Land

Ricardo Dal Farra

The custodianship of knowledge, of creativity, of (the version of) knowledge as it happened, of the proper way to think about and understand the art world, and all that flows from this: Who does it belong to?

If we are unacquainted with something, does it not exist? If we do not understand something, is it automatically wrong? It often seems as if certain sources are always reliable, while others have to be checked repeatedly before being accepted as valid. We are afraid to share lest others occupy our territory, we maintain a certain acquired hegemony, control, monopoly. Like beacons guiding us to keep us from crashing into unseen rocks, certain cities, cultures, societies, institutions, and individuals show us the right path, the one that leads to understanding. What path are we to take, or to make, otherwise? If the undergrowth keeps us from seeing the lake, perhaps it is not the undergrowth's fault. It may be that we did not know how to search, look, and see. We are learning at every moment, and life shows us that there are unexpected worlds, of all dimensions, to discover. And we transform our fear of the dark into science in order to soothe our anxiety (to paraphrase Jorge Wagensberg) as we try to uncover numerous mysteries. Thus, science comes to the rescue, seeking to explain and to tell us that everything has a reason for being. Sometimes art addresses precisely that. Other times, it turns to the things that we are unable to delimit and describe clearly and effectively but which, nevertheless, exist.

In the meantime, between art, science, and the technologies that astonish us (or those we sometimes imagine have always been almost at hand), history happens. Not just in one place but in many, and within models and frameworks that we don't always

understand. The combination and coordination of certain sounds makes spoken communication seem almost innate to human beings (and perhaps not just human beings), a gift, as though there had not been a very long process leading us here, so that it can take place the way it does today. Sound, a wake-up call, tells us a great deal: it indicates, points out, warns, guides, alerts, and amuses us. And when sounds are organized as what we call music, they attain a remarkable degree of abstraction, reaching unfathomable depths that touch our feelings and the way we act, both individually and collectively.

In the middle of all this we have sound art and what it represents, what it means to different people, groups, communities of specialists, novices, creators and onlookers, audiences and participants, experts and makers. This is not the place to give an irrefutable definition of sound art. However, we can say that this text offers the opportunity to approach it from a broad perspective, which sometimes merges with a certain kind of music, or with various fields of art. In any case, sound art has gradually earned its place in very different fields where sound and art intersect (but usually in a different way to what we traditionally call music).

Some theorists place music in the concert hall and sound art beyond its walls. Others define sound art broadly, suggesting that it encompasses everything (in regard to artistic projects using sound) that does not fall within the concept of music. Many thinkers, musicians, and artists have certainly paved the way, and John Cage must inevitably be mentioned as somebody who left indelible marks in this respect. But so did movements like Fluxus and Dada, and artists like R. Murray Schafer, Pauline Oliveros, Iannis Xenakis,

Pierre Schaeffer, and many others who sowed the seeds of what is happening today.

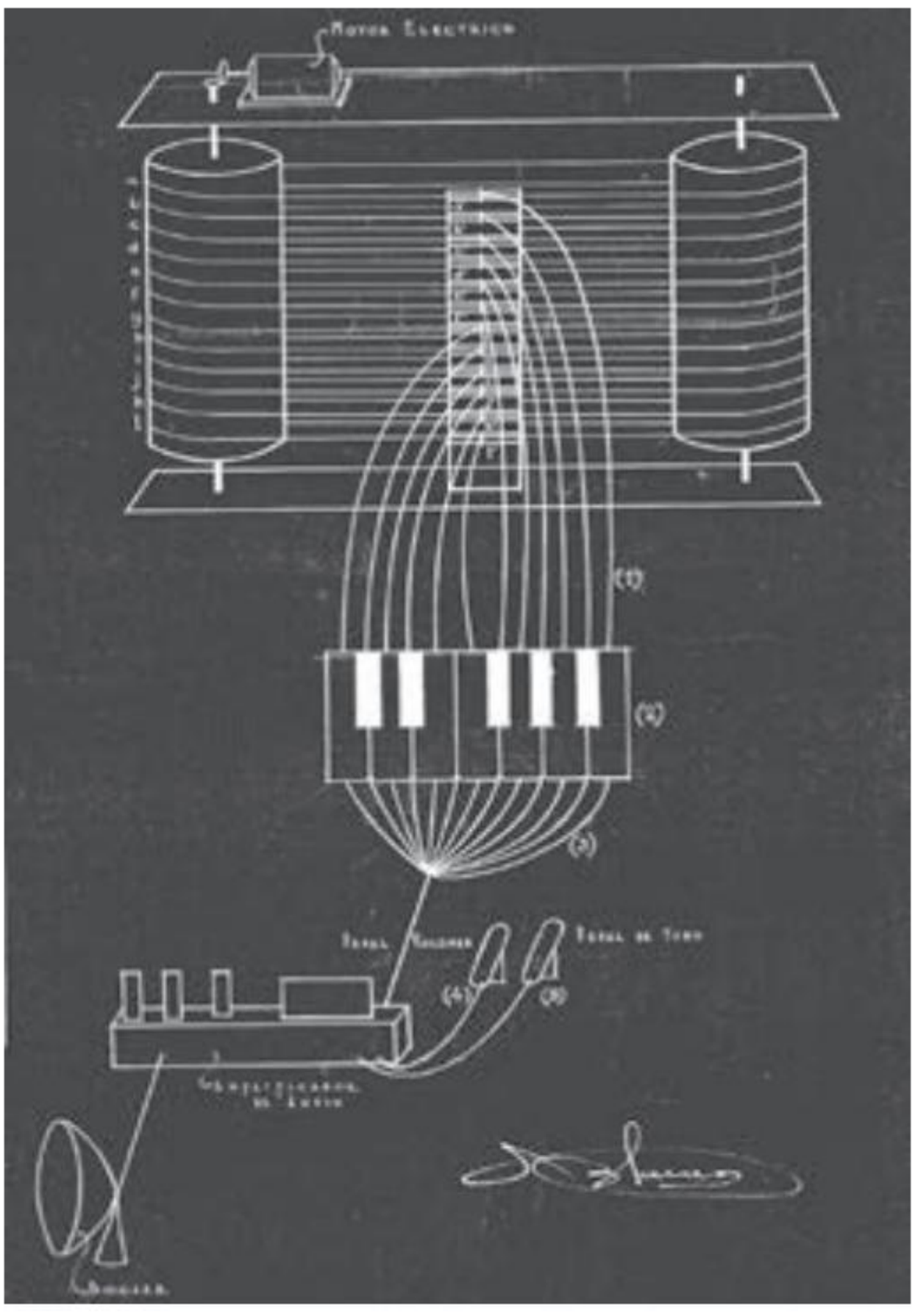
However, there always seems to be at least one missing link, and we do not really know why or how it went missing (although in some cases we don't really want to know). Even today it takes a considerable amount of effort to discover the history of certain subjects, or just some of the steps taken, in certain parts of the globe. Although some people firmly believe that if anything is not (at least mentioned) on the internet today it is because it does not exist, our research, and the experiences of some readers of these words, indicate otherwise. At least in the field of sound art, we only know of a few initiatives and developments—mostly recent works and experiments—of what has been happening during the last few decades in (Spanish- and Portuguese-speaking) Latin America.

Rather than seeking to be exhaustive, this text is simply an example of the vast field that opens up when we decide to start looking for (and listening to) some of the many things that have been created, whether purely artistic works or technological tools developed for use in the creation, transformation, and storage (of representations) of sound.

Re-Recording the Past

It has been one hundred years since the birth of Juan Blanco, the Cuban lawyer and composer internationally renowned for his vast electronic music oeuvre. However, it is less known that Blanco also designed a musical instrument, which he called the "multiórgano"

(multiorgan), that allowed different sounds to be recorded on twelve magnetophonic wire loops. An entire octave of the chromatically recorded voices or notes played on any kind of tonal instrument could be controlled through a keyboard built into the structure of the instrument. The tuning was adjusted by the speed control of its motor, and two pedals modulated the "volume" and "tone." In 1942, Blanco presented his design at the Patent and Trademark Office in Cuba, years before the American inventor Harry Chamberlin made the keyboard instrument that carries his name



Juan Blanco, Design of the multiórgano, 1942

based on the same principle as the multiórgano. Interestingly, Chamberlin's instrument was later developed in England and from the 1960s it was sold under the name Mellotron, which is now considered a direct predecessor of the sampler (the Mellotron is based on analog technology, the sampler on digital technology). Beginning in the 1980s, samplers changed the way music is made almost everywhere in the world, and transformed the music industry.[1]

The multiórgano, which was conceived as a musical instrument, is thus connected to the development of the sampler. Digital samplers, and the principles on which they are based, are now used in all kinds of artistic creations that include sound. They are a key element in the transformation that has led to new modes of sound production. This example and others mentioned in this text should be understood within a broad framework in which sound art is a whole world based on experimentation and innovation as the pillars of an art that often comes out of music, sometimes out of the visual arts, and increasingly out of various sources and hybrid concepts.

The relationship between sound art and the visual arts has been explored for a long time and in many different ways. Electronic technology has been part of this exploration, giving rise to interesting experiences and results with groundbreaking instruments developed in countries such as Russia, Canada, France, and the United States, but also in Latin America. In 1960s Argentina, for example, Fernando von Reichenbach developed the Catalina, or graphic analog converter, to be used at the Centro Latinoamericano de Altos Estudios Musicales (CLAEM, Latin American Center for Advanced Musical Studies), Torcuato Di Tella Institute,

in Buenos Aires. This instrument was able to convert graphics drawn on a roll of paper into electronic signals, which were, in turn, used to control analog modules generated and modified through sound. Once a score had been drawn, the roll of paper was moved along by mechanical means, and the graphics were captured by a video camera. The electric signals thus obtained could be used with a voltage-controlled oscillator (VCO) to modulate the frequency variations in accordance with the original graphic. The Catalina was used in several works, but the best known for the relationship between the visual score and the resulting sound is probably Pedro Caryevschi's work for magnetic tape, *Analogías Paraboloides* (Paraboloid Analogies, 1970). The Catalina allowed users to draw two lines, which were read separately by the camera and converted into two different control signals. As Reichenbach remembers, "There were no computers so there had to be a way to draw heights or intensities or both at the same time; we had two drawing channels."[2]

When *Analogías Paraboloides* was made, the CLAEM Electronic Music Laboratory only had one oscillator (on loan) that could be controlled by variations in electrical voltage. However, looking at Caryevschi's score, we can see that forty-eight lines make up the frequency control graph that was to be read by the converter. To produce the piece, each of these lines was drawn separately, and the resulting sounds were recorded individually, in order to create the final sound construction based on the superimposition of the forty-eight monophonic recordings. It is important to remember the limited possibilities of analog magnetic recordings at the time.

The Art of (Sound) Organization

Sounds are organized by artists, composers, and creators. And also by the people who listen to their works, audiences who participate in the creative circle by paying attention: believing, listening, and hearing, adding their own motivation to the original intention of those who arranged them.

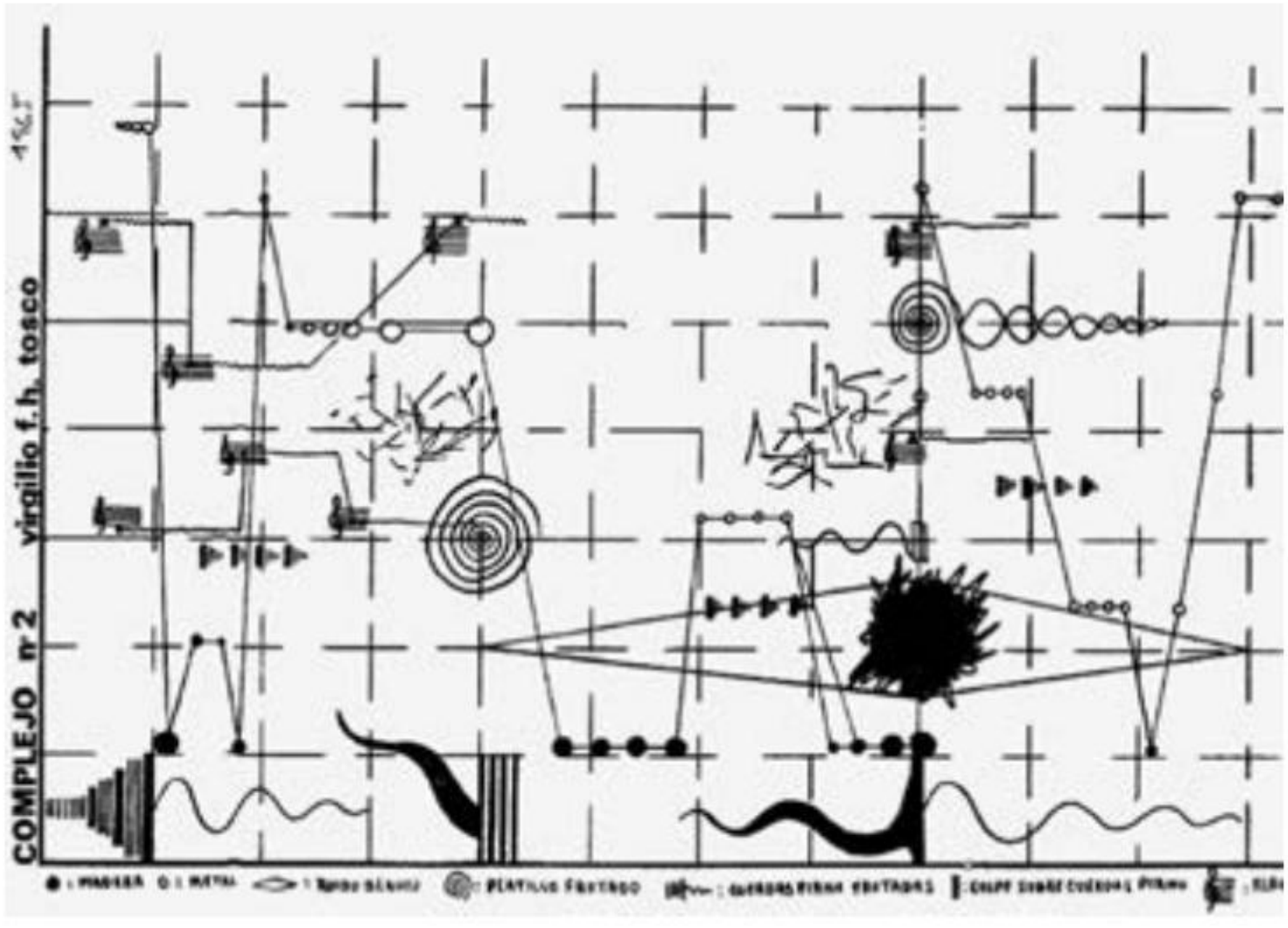
In the twentieth century, pioneering experiments in the organization of sound began to appear in Spanish- and Portuguese-speaking Latin American countries, in line with prevailing trends in other parts of the world, and also in conjunction with elements of local hybrid cultures. Reimagined sounds, readjusted sounds, sounds transformed by innovative technologies, started to turn up in Latin America soon after they had been heard in small circles in Europe and North America. Sometimes these new developments were confined to the realm of sound, and other times they occurred in the field of sound linked to images, or images linked to sound. And sometimes they were the result of the intersection of several worlds.

After producing eight studies using records—a recording technology that predates magnetic tape—in Buenos Aires between 1950 and 1953, Mauricio Kagel worked with recorded sounds for his work *Música para la Torre* (Music for the Tower). The piece was a soundtrack for the Torre de América (Tower of America) designed by architect César Janello for the Feria de América, an industrial expo held in the province of Mendoza, Argentina, in 1954. Kagel's sounds were spatialized and synchronized with the lighting system, so that the tower became a monumental multimedia sculpture fifty meters

high. The sound material, which included instrumental and concrete music (machine noises, for example) was recorded on ten monophonic tapes, and the total duration was around two hours.[3]

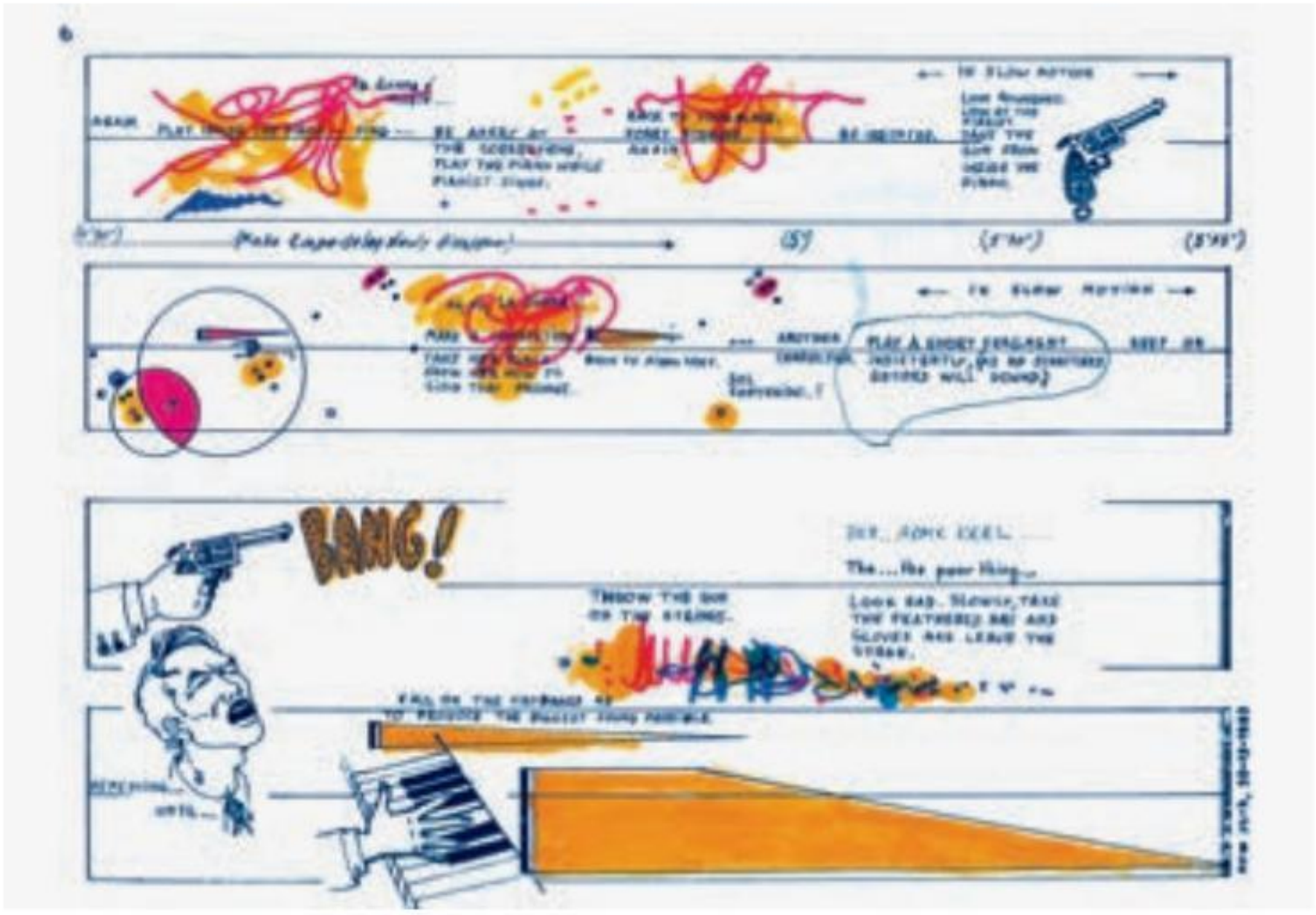
But before arriving at the use of electroacoustic technology to link images and sounds, some artists had already established subtle connections that were, in some cases, confined to their minds. The Argentinean artist Óscar Agustín Alejandro Schulz Solari, better known as Xul Solar, is well known as a painter, sculptor, writer, and even inventor of imaginary languages, but his musical (and architectural) studies had a decisive influence on his work. This is how he came to invent an instrument somewhat similar to the piano, but with three rows of keys (some colored, some textured, and of various shapes), and a musical scale of six notes (in other words, unlike the traditional eight-note scale used in Western culture). He also modified a celesta and a harmonium, and created a musical notation system. There are direct references to music in several of his paintings,[4] although the actual sounds remained in the artist's inspiration and in the imagination of those who see his work.

Just as the sound world can lead us to the visual arts field, the opposite also occurs. Organized sounds are not only the result of artists using traditional musical notation on a staff. There are many other types of graphic symbols that, in addition to guiding the sound/musical work, can also be exhibited as works of art, thus transcending their original function as a score. One of many examples is Virgilio Tosco's 1965 piece *Complejo No. 2* (Complex No. 2), for recorders, piano, percussion, aluminum plates, bronze discs, wooden objects, and electronically generated white noise.



Virgilio Tosco, *Complejo No. 2* (Complex No. 2), 1965

A different approach was taken by the Argentinian-Canadian artist alcides lanza in his piece *ekphonesis II (1968-III)*, originally composed in 1968 at the request of a Mexican soprano, who decided against performing it when she saw the score. It is an open work, in which the singer and the pianist have a great deal of freedom, and the electronic material can vary from one performance to the next. The relationship between image and sound in *ekphonesis II (1968-III)* is expressed, on the one hand, through the striking drawings that make up the score itself. But lanza's evolving piece also includes dozens of slides that are projected during the performance: around fifty when it was composed in 1968, and close to two hundred from 1971, when he started using two projectors pointing at the same screen, sometimes superimposing the images of both. The slides



alcides lanza, *ekphonesis II (1968-III)*, 1968

range from a portrait of Richard Wagner to skeletons and photos of animals, monsters, works of art, starving people, and spaceships.

Brazilian artist Guilherme Vaz, a precursor of sound and conceptual art in his country, presented *Música para Folha de Papel* (Music for Paper Sheet) at the 8th Biennale de Paris in 1973. At the start of his performance, Vaz declared that his work was a musical composition, and started to slowly tear a sheet of paper in front of the microphone. When he finished tearing the sheet, he said, "end of the musical composition." Interested in musical notation and in the relationship between image and sound, his work *Silêncio* (Silence) consists of a photograph taken in the 1980s that shows him holding a large music staff paper—of the kind used to write orchestral scores—on which the word "SILENCIO"

is written in large letters. Vaz was a versatile artist, composer, director, and sound artist interested in jazz and experimental music. His body of work also includes installations, sound objects, instructions, photographs, videos, paintings, and drawings. He wrote music for over sixty films and was among the first composers to work with concrete music in Brazilian cinema, starting with *Fome de amor* (Hunger for Love), directed by Nelson Pereira dos Santos in 1967. Especially in his last years, much of his output was strongly influenced by working closely with various indigenous cultures in Brazil.

Ulises Carrión was a writer, published books and magazines, and made mail art and video art. After emigrating from Mexico to the Netherlands, his reflections on language led him to produce works that we can now categorize within the realm of sound art. In 1977, he compiled some of these works on a cassette entitled *The Poet's Tongue*: "Hamlet for Two Voices," "Aritmética," and "Three Spanish Pieces." Antonio Russek, a renowned composer and sound artist with a prolific output, is also Mexican. He created his first work using concrete sounds in 1977, and in the 1980s he set up the Centro Independiente de Investigación Musical y Multimedia (CIIMM, Independent Center for Music and Multimedia Research) in Mexico City. His extensive body of work includes electroacoustic and hybrid pieces as well as sound sculptures, installations, and other modes of expression. Russek's output is large and varied, sometimes involving collaboration with other Mexican artists, such as Vicente Rojo Cama, with whom he co-created the interdisciplinary production *Multimedia y Tecnología en el Arte* (Multimedia and Technology in Art) at the Museo Nacional de Antropología e Historia de México in 1982. The following year, the two artists took

part in a sociological art experience led by Hervé Fischer at the Museo de Arte Moderno in Mexico City. Another Mexican sound artist, Manuel Rocha Iturbide, says of Russek that "his music clearly lies between the visual and sound fields," and also mentions his fellow artist's sculptural work using sound. Rocha's own work opens up from musical composition to a rich and varied field of installations made up of objects and space, in conjunction with sounds (which may be present, awaited, or simply left to the imagination of those who contemplate them). Since 1987, these works have been an increasing part of his oeuvre, which, in addition to his musical compositions, includes video installation, sound art, works for video, sculpture, installations, graphics, sound sculpture, and sound installations.

The creative work of the author of this text, Ricardo Dal Farra, has developed since the mid-1970s from the forms of electroacoustic music and sound art to branch out into visual music, immersive audiovisual formats, and electronic arts. It includes interactive digital art pieces based on images and sounds generated in real time, such as *Interacciones* (Interactions, 1990), works in which the visual and sound material emerge from a single algorithm, and works based on feedback between sound and image, using various forms of analysis and representation, such as data visualization and sonification.

Between Noises

This text and these examples are intended to inspire a broader and more in-depth exploration, to arouse curiosity about this creative world that we could miss

out on discovering. The text mentions only a few names associated with the vast body of sound art, experimental music, and works straddling visual and sound art by Latin American artists and researchers who have been contributing to the complex and elaborate cultural world of humans for decades.

It should also be noted that while the work of some artists fits within recognized artistic disciplines, we are increasingly finding new modes of production and artists who do not identify with specific labels such as artist, composer, or director. Jorge Barco, Carlos Gómez, Ana María Romano, and Ricardo Arias in Colombia; Enrique Zamudio, Claudia González Godoy, and Constanza Piña in Chile; and Luz María Sánchez, Israel Martínez, and Fernando Ortega in Mexico, are just some of the many artists who inhabit the various hybrid spaces between installation, sculpture, sound art, video, photography, music, interactive textiles, and, essentially, what we call electronic art. There is still much to explore and discover, from León Ferrari's "artifacts for drawing sounds" from the 1980s and Mauricio Bejarano's inaudible, disconnected *Silencios elocuentes* (Eloquent Silences), to the new generations who perceive and/or adopt different kinds of relationships between visual and sound creation, even ignoring the differences between them.

What we have here so far are names and some dates; a few—albeit important—examples that form part of the vast field of sound art, experimental music, and works that intertwine and cross-pollinate visual and sound arts, with the Latin American scene as the starting point for exploration. There are increasing numbers of works and spaces for reflection, education, and also collaborative process in the region. Networks, symposiums, university

degrees, and open laboratories are the nerves connecting and promoting creative actions and the thinking that underlies them.

There is also a growing number of initiatives supporting the study of Latin American precedents of works like the ones mentioned in this text. The Latin American Electroacoustic Music Collection at the Daniel Langlois Foundation for Art, Science, and Technology in Montreal, for example, has been fulfilling part of this mission.[5] Although the collection (created by the author of this text) focuses on electroacoustic music, it includes a great many works that are considered part of the heritage of Latin American sound art.

The efforts of institutions and individuals, be they academics or independent artists and researchers, are unearthing works by pioneering artists in the field of sound art, and making them visible and audible. The road is long, but as we travel on it (or as we make it) we rediscover things that we may not have properly noticed at the time, and that we certainly did not know how to convey—the achievements, experiments, doubts, the art—to those who were willing to pay attention.

1
It is interesting to note that the vast majority of historical accounts of the now famous sampler tend to mention the English musical instrument and the American entrepreneur as precursors, while the Cuban's pioneering multiórgano is usually left out (probably often out of ignorance, although it has also been intentionally omitted).

2
Ricardo Dal Farra, unpublished interview with Fernando von Reichenbach, 2003.

3

Hugh Davies, *Répertoire international des musiques électroacoustiques / International Electronic Music Catalog*, Paris and New York, Groupe de Recherches Musicales, ORTF / The Independent Electronic Music Center, 1968; available online at https://archive.org/stream/InternationalElectronicMusicCatalog/EMR2_3_djvu.txt.

4
Examples include *En ritmiko* (1922), *San Danza* (1925), *Barreras melódicas* and *Contrapunto de puntas* (both 1948), *Cinco melodías* and *Impromptu de Chopin* (both 1949), *Coral Bach* (1950), and *Hiercoeco zieli según natura* (n.d.).

5

Ricardo Dal Farra, *Latin American Electroacoustic Music Collection*, 2006; available online at http://www. fondation-langlois.org/html/e/page.php?NumPage=556.

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Historical Texts

1916

LUIGI RUSSOLO

The Art of Noises
New Acoustical Pleasures

1923

LÁSZLÓ MOHOLY-NAGY

New Form in Music:
Potentialities of the Phonograph

1966

PIERRE SCHAEFFER

Acousmatics

1970

PAULINE OLIVEROS

And Don't Call them
"Lady" Composers

1977

HENRI CHOPIN

Again, yet again
poésie sonore

LUIGI RUSSOLO

The Art of Noises
New Acoustical Pleasures

The evolution of music, moving toward ever *greater complexity* (as I pointed out before in my manifesto The Art of Noises) in rhythm, in ever more complicated and dissonant harmonies, and in ever more unusual orchestral colors, is a convincing proof of the absolute need of our sensibility to change the sensations received by our ears. This continuous and necessary force of change has always been constant in its direction toward the *more complex*. And for every new leap forward by innovative musicians, the inevitable protests of the public have burst forth, and the just as inevitable disapproval of the knowledgeable critics.

None of this hostility was ever capable of stopping the fated evolution of music. In a sudden change of climate, the most contested of new manifestations ended by being accepted and applauded. Certain forms that at first excited astonishment and indignation were not long in being heard with indifference, as logical and natural. Who is amazed anymore at the famous dissonant chord of Beethoven's *Ninth Symphony*? Who still thinks Berlioz' fortissimos are too loud? And are not the most recent discoveries of Debussy and Strauss now accepted by the majority, having become logical and normal for our ears?

The reason for these instances of rapid acceptance lies in the fact that our acoustical sensibility is being continually assaulted by the diversely dissonant chords and the much more complicated timbres found in the noises of life and nature. And more decisive in music than any other art is the importance of their usefulness and role in supporting certain given sensations for the senses (considered in their physiological essence).

The soul cannot feel pleasure when the sensation that should have produced it has actually given pain to the transmitting sense. Thus, it would not have been possible for music to evolve so decisively toward dissonance if our ear had not become accustomed to the complex noise of fervid, rapid and intense

modern life. But although they suffer upon receiving violent emotion to which they are not accustomed, our senses take almost no notice of those that are on the contrary too familiar to hear. And this is why in modern music the search for timbres and orchestral colors obtained through the strangest and most artificial dissonances has now become a dominant and constant concern.

In modern music everything is sacrificed to this search while the former concerns, style, line, and form, are now completely ignored. Nevertheless, none of these new effects that can be obtained with the conventional orchestra turns out to be anything that astounds our ear once it has become indifferent to dissonances.

Now, it is absolutely impossible for a composer to move the soul without first moving the ear. (It must be understood that I am not alluding to the soul of a seamstress or a hairdresser but to that of an artist, or at least to that of an evolved and truly modern man.) And in this circumstance, which only innovators take into account, lies the pitiless condemnation of all those who believe that music can be made by repeating the usual sentimental strumming, the usual melodic clichés, and the usual melodramatic situations with violin solos and trumpets.

Stir the senses and you will also stir the brain! Stir the senses with the unexpected, the mysterious, the unknown, and you will truly move the soul, intensely and profoundly! Here lies the destined and absolute necessity of borrowing the timbres of sounds directly from the timbres of the noises of life. Here—with the sole exception of the meagerness of orchestral timbres—lies the unbounded richness of the timbres of noises.

But it is necessary that these noise timbres become *abstract material* for works of art to be formed from them. *As it comes to us from life*, in fact, noise immediately reminds us of life itself, making us think of the things that produce the noises that we are hearing.

This reminder of life has the character of an impressionistic and fragmentary episode of life itself. And as I conceive it, *The Art of Noises* would certainly not limit itself to an impressionistic and fragmentary reproduction of the noises of life. Thus, the ear must hear these noises mastered, servile, completely controlled, conquered and constrained to become elements of art. (This is the continual battle of the artist with his materials.) Noise must become a prime element to mould into the work of art. That is, it has to lose its accidental character in order to become an element sufficiently abstract to achieve the necessary transformation of any prime element into abstract element of art.

And so: although the resemblance of timbre with natural noises may be attained by my noise instruments, even to the point of deceiving the ear, the noise, as soon as it is heard to change in pitch, loses its character of *result*. It is no longer an *effect* bound to the causes that produce it (motive energy, striking, friction through speed, bumping, and so on) owing to and inherent in the purpose of the machine or thing that makes the noise. And since the noise is freed from the necessities that produce it, we dominate it by transforming at will its pitch, its intensity and rhythm. We hear it suddenly become autonomous and malleable material, ready to be moulded to the will of the artist, who transforms it into an element of emotion, into a work of art.

This lyrical and artistic coordination of the chaos of noise in life constitutes our *new acoustical pleasure*, capable of truly stirring our nerves, of deeply moving our soul, and of multiplying a hundredfold the rhythm of our life.

———

"L'Arte dei rumori. Nuova voluttà acustica," in *L'Arte dei rumori* (1913) (Milan: Edizioni Futuriste di "Poesia," 1916) Eng.: "The Art of Noises: New Acoustical Pleasures," in *The Art of Noises*, trans. Barclay Brown (New York: Pendragon Press, 1987), 85–87.

LÁSZLÓ MOHOLY-NAGY

New Form in Music: Potentialities of the Phonograph

Among present-day musical experiments, an important role is played by researches conducted with amplifiers which open up new paths in the production of acoustic phenomena. The aims of the Italian Bruitists, in constructing new instruments with new sound-formations, have been substantially fulfilled by experiments with the amplification tube as a specific instrument which permits the production of all sorts of acoustic phenomena. However, this alone does not exhaust the potentialities that might be expected as regards the transformation of *music*. I refer to the excellent paper by P. Mondrian, "New form in music and the Italian Bruitists" (De Stijl), where the basic principles of innovation in creation with sound are analysed.

Mondrian says among other things, "Music cannot develop through enrichment in terms of sounds or through refinement, but through the abolition of the duality of the individual and the universal, the natural and the spiritual; in other words, the achievement of human equilibrium is the aim of all creation." And he goes on: "Noises in nature result from simultaneous and continual fusion. By having partly destroyed this fusion and continuum, the music of the past has derived from this noise certain sounds which it has arranged in a certain harmony. In order to achieve a more universal mode of creation, the new music will have to attempt a new order of sounds and non-sounds (certain noises). The main point is to deliver ourselves through creation from the 'natural,' from the 'animal,' the characteristics of which are fusion and repetition. If the fusion and hereby the predominance of the individual is to be avoided, instruments will have to form the sort of sounds in which both wavelength and frequency must remain as even as possible. Therefore instruments must be constructed in such a way that every after-oscillation can immediately be interrupted. This kind of creation is inconceivable without a different technique and different instruments."

If they are to be realized at all *externally* by technical inventions,

these postulates will actually be met through employing the amplification tube.

My ambitions in the same field of experimental transformation in music are of another kind, though closely connected with the thinking of Mondrian. In what follows I shall pass over the motives for new sound-creation and shall present just one suggested means for its possible realization with the help of a new means of expression.

I have already suggested that the phonograph be transformed from an instrument of reproduction into one of production; this will cause the sound phenomenon itself to be created on the record, which carried no prior acoustic message, by the incision of groove-script lines as required.

Since my description of this process served elsewhere as an example to illustrate another idea, I was very brief in specifying the potentialities, without presenting detailed arguments, for the transformation of our musical conceptions along these lines. In

*
Our present scale is approximately one thousand years old, and it is not absolutely necessary to be bound by its inadequacies today.

speculative terms, the following is clear:

1. By establishing a groove-script alphabet an overall instrument is created which supersedes all instruments used so far.

2. Graphic symbols will permit the establishing of a new graphic and mechanical scale,* that is, the creation of a new mechanical harmony, whereby the individual graphic symbols will be examined and their relations formulated within a rule. (We may allude here to an idea that sounds rather utopian as yet; namely, the transposing of graphic designs into music on the basis of strict regularities of relationships.)

3. The composer would be able to create his composition for immediate reproduction on the disc itself, thus he will not be dependent on the absolute knowledge of the interpretative artist. So far, the latter was in most cases able to smuggle his own spiritual experience into the composition written in note form.

The new potentialities afforded by the phonograph will re-establish the amateurish musical education of our day on a more wholesome basis. Instead of the numerous "reproductive talents," who have actually nothing to do with *real* sound-creation (in either an active or a passive sense), the people will be educated to the *real* reception or creation of music.

4. The introduction of this system in musical performances will also facilitate to a significant degree independence from large orchestral enterprises, and the large-scale distribution of original creations by means of a simple instrument.

(The efficiency of the phonograph has been substantially improved lately by certain technical innovations. Among others, there are two important inventions in this field. One is electrical operation, the other a newly invented diaphragm which ensures almost completely friction-free reproduction of recorded compositions. I think that if we regard these as a necessary condition, then we shall have technically perfect apparatuses within the shortest time.)

I consider that the following practical experiments with the phonograph in the realm of musical composition should be initiated:

1. Since the grooves on the mechanically produced record are microscopic in size, we shall first have to devise a method for reducing by technological means down to the normal size of a present-day record any large-scale groove-script record that can conveniently be worked on by hand. It would be desirable to make a photograph of a present-day (reproductive) record and to make a photo-cliché or photo-engraving of the photograph by a zincographical or galvanoplastical process. Should such a record prove to be just more or less playable, the basis for subsequent work along these lines will be established.

2. Study of the graphic symbols of the most different (simultaneous

and isolated) acoustical phenomena. Use of projectors. Film. (Specialist works on physics already include detailed descriptions thereof.)

3. Examination of mechanical, metallic and mineral sounds. From these, attempts to devise—for the time being, in a graphic way—a special language. Special attention to be paid to symbols created by different tonalities.

4. Graphic production of the largest contrasting relations. (Before beginning experiments on the wax plate, it is suggested that one trace with a needle the graphic wave lines of music on a [reproductive] phonograph disc; these lines will become well known to the experimenter who will acquire therefrom a sense for graphic representation.)

5. Finally, there are improvisations on the wax plate to be considered, the phonetic results of which are theoretically unforeseeable, but which may permit us to expect significant incentives since the instrument is rather unknown to us.

"Neue Gestaltung in der Musik. Möglichkeiten des Grammophons," *Der Sturm* 14, no. 7 (July 1923): 102–6; Eng.: "New Form in Music: Potentialities of the Phonograph," in *Moholy-Nagy,* ed. Krisztina Passuth (New York: Thames and Hudson, 1985), 291–92.

PIERRE SCHAEFFER

Acousmatics

The Relevance of an Ancient Experience

Acousmatic, the *Larousse* dictionary tells us, is the: "*Name given to the disciples of Pythagoras who, for five years, listened to his teachings while he was hidden behind a curtain, without seeing him, while observing a strict silence.*" Hidden from their eyes, only the voice of their master reached the disciples.

It is to this initiatory experience that we are linking the notion of acousmatics, given the use we would like to make of it here. The *Larousse* dictionary continues: "*Acousmatic, adjective: is said of a noise that one hears without seeing what causes it.*" This term [...] marks the perceptive reality of sound as such, as distinguished from the modes of its production and transmission. The new phenomenon of telecommunications and the massive diffusion of messages exists only *in relation to* and *as a function of* a fact that has been rooted in human experience from the beginning: natural, sonorous communication. This is why we can, without anachronism, return to an ancient tradition which, no less nor otherwise than contemporary radio and recordings, gives back to the ear alone the entire responsibility of a perception that ordinarily rests on other sensible witnesses. In ancient times, the apparatus was a curtain; today, it is the radio and the methods of reproduction, along with the whole set of electro-acoustic transformations, that place us, modern listeners to an invisible voice, under similar conditions.

Acoustic and Acousmatic

We would utilize this experience erroneously if we subjected it to a Cartesian decomposition by distinguishing the "objective"—what is behind the curtain—from the "subjective"—the reaction of the auditor to these stimuli. In such a perspective, it is the so-called "objective" elements that contain the references of the elucidation to be undertaken: frequencies, durations,

amplitudes...; the curiosity put into play is that of acoustics. In relation to this approach, acousmatics corresponds to a reversal of the usual procedure. Its interrogation is symmetrical: it is no longer a question of knowing how a subjective listening interprets or deforms "reality," of studying reactions to stimuli. It is the listening itself that becomes the origin of the phenomenon to be studied. The concealment of the causes does not result from a technical imperfection, nor is it an occasional process of variation: it becomes a precondition, a deliberate placing-in-condition of the subject. It is *toward it*, then, that the question turns around: "What am I hearing?... What exactly are you hearing"—in the sense that one asks the subject to describe not the external references of the sound it perceives but the perception itself.

Nonetheless, acoustics and acousmatics are not opposed to each other like the objective and the subjective. If the first approach, starting with physics, must go as far as the "reactions of the subject" and thereby integrate, in the end, the psychological elements, the second approach must in effect be unaware of the measures and experiences that are applicable only to the physical object, the "signal" of acousticians. But for all that, its investigations, turned toward the subject, cannot abandon its claim to *an objectivity that is proper to it*: if what it studies were reduced to the changing impressions of each listener, all communication would become impossible; Pythagoras' disciples would have to give up naming, describing, and understanding what they were hearing *in common*; a particular listener would even have to give up understanding himself from one moment to the next. The question, in this case, would be how to rediscover, through confronting subjectivities, something several experimenters might agree on.

The Acousmatic Field

In the sense of acoustics, we started with the physical signal

and studied its transformations via electro-acoustic processes, in tacit reference to the norms of a supposedly known listening—a listening that grasps frequencies, durations, etc. By contrast, the acousmatic situation, in a general fashion, symbolically precludes any relation with what is visible, touchable, measurable. Moreover, between the experience of Pythagoras and our experiences of radio and recordings, the differences separating direct listening (through a curtain) and indirect listening (through a speaker) in the end become negligible. Under these conditions, what are the characteristics of the current acousmatic situation?

a) *Pure Listening*
For the traditional musician and for the acoustician, an important aspect of the recognition of sounds is the identification of the sonorous sources. When the latter are effectuated without the support of vision, musical conditioning is unsettled. Often a surprise, sometimes uncertain, we will discover that much of what we thought was heard was in reality only seen, and explicated, through the context. This is why certain sounds produced by instruments as different as string instruments and wind instruments can be confused.

b) *Listening to Effects*
In listening to sonorous objects [*objets sonores*] whose instrumental causes are hidden, we are led to forget the latter and to take an interest in these objects for themselves. The dissociation of seeing and hearing here encourages another way of listening: we listen to the sonorous forms, without any aim other than that of hearing them better, in order to be able to describe them through an analysis of the content of our perceptions.

In fact, Pythagoras' curtain is not enough to discourage our curiosity about causes, to which we are instinctively, almost irresistibly drawn. But the repetition of the physical signal, which recording makes possible, assists us here in two ways: by exhausting this curiosity,

it gradually brings the sonorous object to the fore as a perception worthy of being observed for itself; on the other hand, as a result of ever more attentive and more refined listenings, it progressively reveals to us the richness of this perception.

c) *Variations in Listening*
Furthermore, since these repetitions are brought about in physically identical conditions, we become aware of the variations in our listening and better understand what is in general termed its "subjectivity." This does not refer, as one might perhaps tend to think, to an imperfection or a kind of "fuzziness" [*flou*] that would scramble the clarity of the physical signal; but rather to particular clarifications or precise directions that reveal, in each case, a new aspect of the object, toward which our attention is deliberately or unconsciously focused.

d) *Variations in the Signal*
Finally, we should mention the special possibilities we have for intervening in the sound, the implementation of which accentuates the previously described features of the acousmatic situation. We have focused on the physical signal fixed on a disk or magnetic tape; we can act on it, dissect it. We can also make different recordings of a single sonorous event, approaching the sound at the moment of its taping [*prise de son*] from various angles, just as one can film a scene using different shots [*prise de vues*]. Assuming that we limit ourselves to a single recording, we can still read the latter more or less quickly, more or less loudly, or even cut it into pieces, thereby presenting the listener with several versions of what was originally a unique event. What does this deployment of diverging sonorous effects from a single material cause represent, from the point of view of the acousmatic experience? What correlation can we expect between the modifications that are imposed on what is recorded on the tape and the variations in what we are hearing?

On the Sonorous Object: What It Is Not

We have spoken at several points of the sonorous object, utilizing a notion that has already been introduced, but not clarified. It is clear, in light of the present chapter, that we were able to propose this notion in advance only because we were implicitly referring to the acousmatic situation that has just been described. If there is a sonorous object, it is only insofar as there is a blind listening [*écoute*] to sonorous effects and contents: the sonorous object is never revealed clearly.

Given this specification, it is easy for us to avoid erroneous responses to the question raised at the end of the preceding paragraph.

a) *The sonorous object is not the instrument that was played.*
It is obvious that when we say "That's a violin" or "That's a creaking door," we are alluding to the *sound* emitted by the violin, to the *creaking* of the door. But the distinction we would like to establish between the instrument and the sonorous object is even more radical: if someone plays us a tape which records a sound whose origin we are unable to identify, what are we hearing? Precisely what we are calling a sonorous object, independent of any causal reference, which is designated by the terms *sonorous body*, *sonorous source* or *instrument*.

b) *The sonorous object is not the magnetic tape.*
Although it is materialized by the magnetic tape, the object, as we are defining it, is not on the tape either. What is on the tape is only the magnetic trace of a signal: a *sonorous support* or an *acoustic signal*. When listened to by a dog, a child, a Martian, or the citizen of another musical civilization, this signal takes on another meaning or sense. The object is not an object *except* to our listening, it is relative to it. We can act on the tape physically, cutting it, modifying its replay speed. Only the act of listening

by a listener [*seule l'écoute d'un auditeur*] can provide us with an account of the perceptible result of these manipulations. Coming from a world in which we are able to intervene, the sonorous object is nonetheless *contained entirely in our perceptive consciousness*.

c) *A few centimeters of magnetic tape can contain a number of different sonorous objects.*
This remark follows from the preceding one. The manipulations just mentioned do not modify a sonorous object having an intrinsic existence. They have *created other objects* from it. There is, of course, a *correlation* between the manipulations to which one subjects a tape or its diverse conditions of reading, the conditions of our listening and the perceived object.

A simple correlation? Not at all, it must be expected. Suppose, for example, that we listened to a sound recorded at normal speed, then slowed down, then again at normal speed. The slowed-down portion, acting like a magnifying glass in relation to the temporal structure of the sound, will have allowed us to discern certain details—of grain, for example—which our listening, thus alerted and informed, will rediscover in the second passage at normal speed. We must let ourselves be guided here by the evidence, and the very way we have had to formulate our supposition dictates the response: it is indeed the *same* sonorous object, subjected to different means of observation, that we are comparing to itself, original and transposed. But what makes it one and the same object is precisely our will to comparison (and also the fact that the operation to which we have subjected it, in this very intention to compare it to itself, has modified it, without rendering it unrecognizable).

Suppose now that we play this slowed-down sound to an unwarned listener. Two cases can arise. Either the listener will still recognize the instrumental origin and, at the same time, the manipulation; for him there will be *an original sonorous source* that in fact *he does not hear*, but to which, however, his listening

refers him: what he hears is effectively a *transposed version*. Or else he will not identify the real origin, will not suspect the transposition, and he will then hear *an original sonorous object*, which will be so *automatically*. (It cannot be a question of an illusion or a lack of information, since in the acousmatic attitude our perceptions cannot rest on anything external.) Inversely, for those of us who have just subjected the sonorous object to one or more transpositions, it is likely that there will be a unique object and its different transposed versions. However, it may also happen that, abandoning any intention to comparison, we attach ourselves exclusively to one or the other of these versions, in order to make use of them, for example, in a composition; they will then become for us so many original sonorous objects, completely independent of their common origin.

We could devote ourselves to similar analyses of other types of manipulations (or variations of the act of recording [*prise de son*]) which, as a function of our intention, our knowledge, and our prior training, will have as their result either variations of a single sonorous object, or the creation of diverse sonorous objects. With the slowing-down, we have voluntarily chosen a modification that lends itself to equivocation. Other manipulations can transform an object in such a way that it becomes impossible to grasp any perceptible relations between the two versions. In this case, we will not speak of the permanence of a single sonorous object, if the identification no longer rests on anything but the recollection of the diverse operations to which "something that was on the magnetic tape" was subjected. If it is impossible for a listener to recognize a kinship between the diverse sonorous results—even guided by recollections and a will to comparison—we will say that the manipulations of a single signal have given way to diverse sonorous objects, whatever our intention may have been.

d) *But the sonorous object is not a state of the mind* [*âme*].

To avoid confusing it with its physical cause, or a "stimulus," we seemed to have grounded the sonorous object on our subjectivity. But—our last remarks already indicate this—the sonorous object is not modified by all that, neither with the variations in listening from one individual to another, nor with the incessant variations in our attention and our sensibility. Far from being subjective (in the sense of individuals), incommunicable and practically ungraspable, sonorous objects, as we shall see, can be clearly described and analyzed. We can gain knowledge of them. We can, we hope, transmit this knowledge.

Our rapid examination of the characteristics of the sonorous object reveals this ambiguity: as an objectivity linked to a subjectivity, it will surprise us only if we obstinately insist on opposing "psychologies" and "external realities" as antinomic. Theories of knowledge did not have to wait for the sonorous object to perceive the contradiction that we are indicating here, and which is not revealed in the acousmatic situation as such [....]

The Originality of the Acousmatic Procedure

Our approach is thus distinguished from the spontaneous instrumental practice in which [...] everything is given at once: the instrument, as the element and means of a musical civilization, and the corresponding virtuosity, and thus a certain structuration of the music extracted from it. Nor do we any longer lay claim to "the most general instrument that exists"; what we are aiming at, in fact, and which follows from the preceding remarks, is the most general musical situation that exists. We can now describe it explicitly. We have at our disposal the generality of sounds—at least in principle—without having to produce them; all we have to do is push the button on a tape recorder. Deliberately forgetting every reference to instrumental causes or preexisting musical significations, we then seek to

devote ourselves entirely and exclusively to *listening*, to discover the instinctive paths that lead from the pure "sonorous" to the purely "musical." Such is the suggestion of acousmatics: to deny the instrument and cultural conditioning, *to put in front of us the us and its musical "possibility."*

One more remark before finishing [....] In the course of this chapter, we have already begun to *hear* with another ear [....] The interest of this remark is not a matter of pure form: it consists in noting that the operative technique has itself created the conditions of a new listening. Let us give audio-visual techniques what is owed to them: we expect from them unheard-of sounds, new timbres, deafening plays—in a word, instrumental progress. Indeed, they provide all that, but very quickly we no longer know what to do with it all; these new instruments are not added easily to the old ones, and the questions they pose singularly disrupt received notions. The tape recorder has the virtue of Pythagoras' curtain: if it creates new phenomena to observe, it creates above all new conditions of observation [....]

———

"Acousmatique," in *Traité des objets musicaux* (Paris: Seuil, 1966); Eng.: "Acousmatics," in *Audio Culture: Readings in Modern Music*, ed. Christoph Cox and Daniel Warner (New York and London: Continuum, 2004), 76–81.

PAULINE OLIVEROS

And Don't Call them "Lady" Composers

Why have there been no "great" women composers? The question is often asked. The answer is no mystery. In the past, talent, education, ability, interests, motivation were irrelevant because being female was a unique qualification for domestic work and for continual obedience to and dependence upon men.

This is no less true today. Women have been taught to despise activity outside of the domestic realm as unfeminine, just as men have been taught to despise domestic duties. For men, independence, mobility and creative action are imperative. Society has perpetuated an unnatural atmosphere which encourages distortions such as "girl" used as a bad word by little boys from the age of 9 or 10. From infancy, boys are wrapped in blue blankets and continually directed against what is considered feminine activity. What kind of self-image can little girls have, then, with half their peers despising them because they have been discouraged from so-called masculine activity and wrapped in pink blankets?

The distortion continues when puberty arrives and boys turn to girls as sex objects but do not understand how to relate on other important levels. Consider the divorce rate! No matter what her achievements might be, when the time comes, a woman is expected to knuckle under, pay attention to her feminine duties and obediently follow her husband wherever his endeavor or inclination takes him—no matter how detrimental it might be to her own.

A well-known contemporary composer has a wife who is also a competent composer. They travel together extensively and often return to the same places for performances of his work. She is rarely if ever solicited for her own work and no one seems to see anything wrong with constantly ignoring her output while continually seeking out her husband's work.

Many critics and professors cannot refer to women who are also composers without using cute or condescending language.

She is a "lady composer." Rightly, this expression is anathema to many self-respecting women composers. It effectively separates women's efforts from the mainstream. According to the *Dictionary of American Slang*, "lady" used in such a context is almost always insulting or sarcastic. What critic today speaks of a "gentleman composer?"

It is still true that unless she is super-excellent, the woman in music will always be subjugated, while men of the same or lesser talent will find places for themselves. It is not enough that a woman chooses to be a composer, conductor or to play instruments formerly played exclusively by men; she cannot escape being squashed in her efforts—if not directly, then by subtle and insidious exclusion by her male counterparts.

And yet some women do break through. The current Schwann Catalog lists over 1,000 different composers. Clara Schumann of the Romantic Period and Elizabeth J. de la Guerre of the Baroque are the sole representatives for women composers of the past. But on the positive side, over 75 per cent of the almost 1,000 are composers of the present and 24 of these are women. These approximate statistics point to two happy trends: 1) that composers of our time are no longer ignored, and 2) that women could be emerging from musical subjugation. (It is significant that in a biography of Schumann that I have read, Clara is always talked about as a pianist, not a composer, and she is quoted as saying, "I'd give my life for Robert.")

The first of the two trends is developing even though the majority of performers do not include contemporary music in their repertoire and private teachers seldom encourage their students to try new music or even to become acquainted with their local composers. Agencies such as the Rockefeller and Ford Foundations have helped establish centers for new music in universities across the country and independent organizations such as the Once Group of Ann Arbor and the San Francisco Tape Music

Center promoted lively programs of new music throughout the 1960s. Isolated individual efforts throughout the country have gradually created an active, new music network.

At last, the dying symphony and opera organizations may have to wake up to the fact that music of our time is necessary to draw audiences from the people under 30. The mass media, radio, TV and the press, could have greater influence in encouraging American music by ending the competition between music of the past and music of the present.

Many composers of today are not interested in the criteria applied by critics to their work and it is up to the critic to discern new criteria by going to the composer. With more performances of new works at which the composers are present, and with the greater mobility of our society, critics have a unique opportunity—a duty—to converse directly with the composer. Since performers are often irresponsible with new works because of disrespect or lack of established models, works with which the critics have familiarized themselves would escape some scathing misjudgments due to poor performances. The ideal critic could not only interpret technically and encourage an atmosphere which is sympathetic to the phenomenon of new music, but present the composer as a real and reasonable person to audiences. Certainly, no "great" composer, especially a woman, has a chance to emerge in a society which believes that all "great" music has been written by those long departed.

The second trend is, of course, dependent on the first because of the cultural deprivation of women in the past. Critics do a great deal of damage by wishing to discover "greatness." It does not matter that not all composers are great composers; it matters that this activity be encouraged among all the population, that we communicate with each other in nondestructive ways. Women composers are very often dismissed as minor or light-weight talents on the basis of one work by

critics who have never examined their scores or waited for later developments.

Men do not have to commit sexual suicide in order to encourage their sisters in music. Since they have been on top for so long, they could seek out women and encourage them in all professional fields. Libraries of women's music should be established. Women need to know what they can achieve. Critics can quit being cute and start studying scores. (The National Federation of Music Clubs has prepared a Directory of Women Composers. It can be obtained by writing to Julia Smith, 1105 West Mulberry Street, Denton, Texas 76201. A complete discography of recorded music by women composers as listed in the Schwann Catalog, accompanies this article.)

Near the beginning of this century, Nikola Tesla, electrical engineer and inventor of A.C. power, predicted that women will someday unleash their enormous creative potential and for a time will excel men in all fields because they have been so long dormant. Certainly the greatest problems of society will never be solved until an equalitarian atmosphere utilizing their total creative energies exists among all men and women.

"And Don't Call them 'Lady' Composers," *New York Times*, September 13, 1970, Section D, 23, 30.

HENRI CHOPIN

Again, yet again poésie sonore

Again, yet again *poésie sonore*, 22 years later; that's what they say, without thinking that for five hundred years we have been saturated with the kind of poetry that is set down, written, typographical, confidential, as dialogue between the poet and the reader, who in most cases doesn't exist except in a dubious historical context, in opposition, in secret, etc. *Poésie sonore* is the sort of poetry that offends the superficial men dedicated to politics, to ideology, to the cult of personality, to the concentration and extermination camps, to the gas chambers, to tear gas, in short all those things as well as the weapons used in high politics.

In the face of all that there is only poetics, but this, from the day when the bourgeoisie appeared, when the dictatorships of the proletariat arose, this poetics was reduced little by little before being forbidden by the same bourgeoisie or the same "troikas" that wanted—without knowing the reason why—to direct everything. With the result that poetry has become in the West very much closed in on itself, and that for a half-century it hasn't existed in the Soviet Union. And yet, I don't feel I have to accept anything at all from any Stalins!

So that is the situation of written poetry. Because paper can be controlled, paper can be directed, paper can be suppressed, paper can be analysed. Even Aragon, who was orthodox anyway, spent his life being closely examined, being a dissected vegetable, before being totally or partially forbidden. That's paying a high price for his loyalty. This is just an example.

On the other hand, yes, on the other hand, for 22 years there has been a poetry which is no longer parings. It is a poetry which is no longer on paper. It is the poetry of sounds: fugitive, elusive, that cannot be blocked by a wall or an iron curtain, that cannot be stopped by two rows of electrified barbed wire, while in the middle there is a path of fine sand where even the footprints of a bird are visible, where the radars detect even that, all the more likely than that they can detect a poem on

paper which leaves its rectangular imprint.

This poetry of the (sound) waves doesn't give a damn about these real barriers, or even often the linguistic barriers. If you want, Messieurs poets who oppose us, you in your writings, while we are not, if you want to defend the freedoms of expression that won't be blocked by any wire, stop calling us "destructors" of languages: we amplify them, multiply them, allow them to travel. It is not for nothing that by means of the waves we traverse the globe, promoting not an eternal work, but voices that grow. The makers of systems don't look so good in contrast with us, who enrich every living expression.

It's not for nothing that electricity has made the voice come from every direction, and in the face of this dictators are ridiculous.

And at any rate I attach the greatest importance to these poets of sounds and to the poets of vision, who no longer pat themselves on the back in front of a beautiful poem.

"Again, yet again poésie sonore," in *Kontextsound*, ed. Michael Gibbs, published on the occasion of the "tekst in geluid" (text in sound) festival, Stedelijk Museum, Amsterdam, April/ May 1977 (Amsterdam: Kontexts Publications, 1977), 11,

List of Works

Artist unknown
Hugo Ball wearing a Cubist costume at the Cabaret Voltaire, 1916, 1917
B/w photograph (exhibition copy)
71.5 × 40 cm
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Artist unknown
Luigi Russolo and Ugo Piatti in the "intonarumori" laboratory in Milan, 1913/ca. 1960
B/w photograph (exhibition copy)
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Museo di Arte Moderna e Contemporanea di Trento e Rovereto
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Artist unknown
Selection of images projected at the Philips Pavilion at Expo 58, Brussels, n.d. (after 1958)
Black and white slides, 8:56 min.
Philips Company Archives

Artist unknown
Le Cri (performance aphoniste dirigée par Maurice Lemaître) (The Cry [aphonist performance conducted by Maurice Lemaître]), 1964
B/w photograph (exhibition copy)
50 × 75 cm
Courtesy of the Endowment Fund Bismuth Lemaître Guymer

Artist unknown, with graphics by Henri Chopin
La danse magnétique (The Magnetic Dance), poster for the 9th Festival International des Musiques Expérimentales de Bourges, 1979
Printed ink on paper
120 × 80 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
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Artist unknown
The audience at a Fluxus performance, n.d.
B/w photograph (exhibition copy)
116 × 141 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Alphonse Allais
Marche funèbre composée pour les funérailles d'un grand homme sourd (Funeral March Composed for the Obsequies of a Great Deaf Man), in *Album Primo-Avrilesque* (April Foolish Album), 1897
Printed ink on paper (exhibition copy)
13 × 19 cm
Paul Ollendorff, Paris
Source: gallica.bnf.fr/ Bibliothèque nationale de France
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Karel Appel
Musique barbare (Barbaric Music), 1963
Vinyl record
31.5 × 32 cm
The World's Window, Baarn
Private collection, Paris
Licensed by SGAE
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Elena Asins
Untitled, 1968
Nylon thread and canvas on wood
80.8 × 27 cm
Museo Nacional Centro de Arte Reina Sofía
AD06260

Elena Asins
Strukturen KV 38 (Structures KV 38), 1975
Heliographic print on paper
16.4 × 21.3 cm
Museo Nacional Centro de Arte Reina Sofía
AD05165

Elena Asins
Strukturen KV 41 (Structures KV 41), 1975
Heliographic print on paper
15.2 × 24.8 cm
Museo Nacional Centro de Arte Reina Sofía
AD05163

Elena Asins
Strukturen KV 46 (Structures KV 46), 1975
Marker pen on paper and black cardboard
12.8 × 19 cm
Museo Nacional Centro de Arte Reina Sofía
AD05172

Elena Asins
Strukturen KV 48 (Structures KV 48), 1975
Marker pen on paper
12.6 × 19 cm
Museo Nacional Centro de Arte Reina Sofía
AD05160

Elena Asins
Strukturen KV 49 (Structures KV 49), 1975
Black ink marker pen on paper
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Museo Nacional Centro de Arte Reina Sofía
AD05161

Elena Asins
Strukturen KV 60 (Structures KV 60), 1975
Heliographic print on paper
16.4 × 21.3 cm
Museo Nacional Centro de Arte Reina Sofía
AD05164

Elena Asins
Cuarteto prusiano KW 589 (Prussian Quartet KW 589), 1978
Pencil, India ink, and fountain pen on cardboard
24.4 × 131 cm
Museo Nacional Centro de Arte Reina Sofía
AD05189

Elena Asins
Cuarteto prusiano KW 589 (Prussian Quartet KW 589), 1978
Pencil and India ink with stylograph on cardboard
21.8 × 113.8 cm
Museo Nacional Centro de Arte Reina Sofía
AD05185

Eduard Bal
Le dernier livre de Schmoll (The Last Book of Schmoll), 1977
Mixed-media intervention on a vinyl record
40 × 40 cm
Guy Schraenen éditeur, Antwerp
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
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Hugo Ball
"Karawane" (Caravan), in *Dada Almanach*, 1917/released in 1920
Printed ink on paper
18.3 × 13.3 cm
Erich Reiss, Berlin,
Richard Huelsenbeck (ed.)
Archivo Lafuente
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François and Bernard Baschet
Cristal, 1952/1980
Glass, metal, stainless steel, fiberglass
140 × 173 × 67 cm
Musée de la musique, Philharmonie de Paris
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Harry Bertoia
Sonambient, 1970 and 1978
Selection of vinyl records
30 × 30 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Joseph Beuys
Das Schweigen (The Silence), 1973
Galvanized film reels
25 × 38 × 38 cm
Edition Block, Berlin
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La Monte Young (ed.), George Maciunas (design)
An Anthology, 1963/2nd edition, 1970
Printed ink on paper
20.7 × 23 cm
New York, La Monte Young and Jackson Mac Low
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

George Brecht
Water Yam, 1963/1986 edition
Prints on cardboard
Various sizes, in box sized
15.5 × 16.5 × 45 cm
Lebeer Hossmann, Brussels
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía
p. 122

George Brecht
Chemistry of Music, 1969
Silkscreen prints on fabric
Various sizes
On loan at Museo Nacional Centro de Arte Reina Sofía
Private Collection. Courtesy of Hauser & Wirth, 2016
DO01446
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George Brecht
Music Is What You Are Listening To At This Moment (invitation to exhibition), 1989
Print on cardboard
15 × 21 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
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Günter Brus
Posters for Selten Gehörte Musik, Prinzendorf and Lenbachhaus, Munich, 1974
Printed ink on paper
84.1 × 59.4 cm
Private collection, Paris

Chris Burden
The Atomic Alphabet, 1979–80
Sound recording, 37 sec.
© Chris Burden / Licensed by The Chris Burden Estate

Chris Burden
The Atomic Alphabet, 1980
Photoetching (exhibition copy)
146 × 99 cm
© Chris Burden / Licensed by The Chris Burden Estate
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Pol Bury
Entité érectile (Erectile Entity), 1962
Assemblage
72 × 40 × 7 cm
Museo Nacional Centro de Arte Reina Sofía
AD06570

Pol Bury
12 et 13 cordes verticales et leurs cylindres (12 and 13 Vertical Strings and Their Cylinders), 1973
Waxed wood, electric motors, and piano strings
142 × 50 × 20 cm
Collection Sylvie Baltazart-Eon
p. 119

Pol Bury
Sculptures à cordes (String Sculptures), in *Derrière le miroir*, no. 209, April 1974
Lithographs and print on paper
28 × 38 cm
Maeght, Paris
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía
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John Cage
Fontana Mix 1958, in *Aspen* 5+6, 1967
Print on couche paper and tracing paper
Aspen Magazine, New York, Brian O'Doherty (ed.)
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

John Cage
Music Walk: For one or more Pianists, 1960
Print on paper and on acetate sheets
20 × 42 cm
Henmar Press, New York, cop. 1960, Henmar Press (ed.)
Real Conservatorio Superior de Música de Madrid

Alexander Calder
Red Disc and Gong, 1940
Wood, canvas, sheet metal, rod, cloth, string, and paint
157.5 × 171 × 7 cm
Calder Foundation, New York
p. 127

Ulises Carrión
45 revoluciones por minuto (45 Revolutions Per Minute), 1977
Video, color, sound, 4:34 min.
Private collection, Paris

José Luis Castillejo
The Book of J's, 1999
Book and vinyl record
21 × 15 cm and 30 × 30 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
Sound work courtesy of Isabel and Federico Fernández de Castillejo

Giuseppe Chiari
Tutte le musiche sono uguali (All Music is the Same), 1971
Ink on cardboard
50 × 70 cm
Luigi Bonotto Collection
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Giuseppe Chiari
La musica è facile (Music is Easy), 1976
Ink on paper
75 × 100 cm
Luigi Bonotto Collection

Giuseppe Chiari
Untitled, 1984
Etching on paper
64.5 × 47 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Henri Chopin
Pêche de nuit (Night Fishing), 1957
16mm film transferred to video, sound, 11:50 min.
Centre Pompidou, Paris. Musée national d'art moderne. Centre de création industrielle. Achat en 1997, AM 1997-F1363

Henri Chopin (ed.)
Ou, nos. 20/21, 22, 23/24, 26/27, 28/29, 30/31, 32, 33, 1964–68
Printed ink on paper , vinyl records, and miscellaneous materials
Various sizes (usually 27 × 27 cm)
Niort, Paris
Archivo Lafuente
pp. 106–108

Henri Chopin (ed.)
Ou, nos. 34/35, 36/37, 38/39, 40/41, 42/43/44, and 45, ca. 1969-1974 and 1979
Printed ink on paper, vinyl records, and miscellaneous materials
Various sizes (usually 27 × 27 cm)
Henri Chopin, Ingatestone, England
Archivo Lafuente
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René Clair
Entr'acte, 1924
Digitalized 35mm film, black and white, sound, 17 min.
Fondation Jérôme Seydoux-Pathé

Le Corbusier (Charles-Édouard Jeanneret) and Iannis Xenakis
Model of the Philips Pavilion at Expo 58 in Brussels, ca. 1957–58
Metal, wood, polyester
110 × 175 × 85 cm
Rijksmuseum. On loan from Philips International BV
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Le Corbusier (Charles-Édouard Jeanneret)
Le poème électronique (The Electronic Poem), 1958
Printed ink on paper
21.2 × 20.7 cm
Les Éditions de Minuit, Paris
Private collection, Paris
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Jean-Paul Curtay
La musique lettriste (The Lettrist Music), in *La revue musicale*, no. 282/283, 1971
Print on paper
26.5 × 20 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Hanne Darboven
Wende >80< (Turning Point >80<), 1980–81
Printed ink on paper and vinyl records
30 × 30 cm and 41 × 57 cm each
Private collection, Paris
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Ferruccio A. Demanins
Marinetti on the Radio, 1932
B/w photograph (exhibition copy)
20 × 15.8 cm
Digital image courtesy of the Getty's Open Content Program
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Gillo Dorfles
Il Metodo per suonare di Giuseppe Chiari (Giuseppe Chiari's Method for Playing), 1976
Printed ink on paper
20.5 × 20.5 cm
Martano Editore, Turin
Luigi Bonotto Collection
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Jean Dubuffet and Asger Jorn
Musique phénoménale (Phenomenal Music), 1961
Vinyl records
26 × 26 cm each
Edizioni del Cavallino, Venice
Private collection, Paris
p. 35 (left)

Jean Dubuffet
Musical Experiences, 1961/1973 edition
Vinyl record
31.3 × 31.3 cm
Published by Finnadar Records, New York
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
Sound work courtesy of Fondation Dubuffet, Paris
p. 35 (right)

Marcel Duchamp
Scores for *Erratum Musical* (Musical Erratum), 1912–15
Proof with pigmented inks on paper (facsimile copy)
31.5 × 48 cm
Centre Pompidou, Paris. Musée national d'art moderne. Centre de création industrielle. Acquisition, DOCCAG 1997-96 (60)
pp. 78–79

Marcel Duchamp
Erratum Musical (Musical Erratum) for voices, 1913/posthumous recording of 1976
Sound recording, 4'32"
Licensed by SGAE

François Dufrêne
Œuvre désintégrale (Incomplete Works), 1958–76/published in 1976
Sound cassettes
23.5 × 11.5 cm
Guy Schraenen éditeur, Antwerp
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
Sound work courtesy of the family of the artist
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Ed van der Elsken
Photographs of Karel Appel for the album *Musique barbare* (Barbaric Music), 1963
B/w photographs (exhibition copies)
31 × 32.5 cm
Nederlands Fotomuseum / © Ed van der Elsken

Erró, with soundtrack by François Dufrêne
Grimaces, 1962-1967
Digitalized 16mm film, black and white, sound, 41:49 min.
Centre Pompidou, Paris. Musée national d'art moderne. Centre de création industrielle. Achat en 1975, AM 1975-F0141
© Erró, VEGAP, Madrid, 2020

Esther Ferrer
Concierto Zaj para 60 voces (Zaj Concert for 60 Voices), 1983
Serigraph on fabric
100 × 118 cm
Luigi Bonotto Collection

Robert Filliou
Musical Economy No. 5, ca. 1971
Installation, mixed media
Variable dimensions
Musée d'art moderne et contemporain de Saint-Étienne Métropole
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Robert Filliou
Musical Economy No. 1, 1980
Black serigraph on cardboard
54.5 × 40.5 cm
Luigi Bonotto Collection
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Robert Filliou
Musical Economy No. 2, 1980
Color serigraph on cardboard
54 × 40.5 cm
Luigi Bonotto Collection

Robert Filliou
Musical Economy No. 3, 1983
Color serigraph on cardboard
31 × 44 cm
Luigi Bonotto Collection

Henry Flynt
Duochord at a Perfect 5th, 2012
Screws, guitar strings, violin bridges, and marker pen on plexiglass
122 × 104.5 × 5 cm
Museo Nacional Centro de Arte Reina Sofía
AD07203

Filip Francis
Solo For Tumbling Woodblocks, 1975
Digitalized video, black and white, sound, 7:45 min.
ARGOS centre for audiovisual arts, Brussels

Ilse Garnier
Tem Tem, 1962
Sound recording, 3:12 min.
Published in *3ViTre*, no. 4, 1984
Sound work courtesy of Violette Garnier

Ramón Gómez de la Serna
"El circo de las ondas" (The Circus of the Waves), in *Ondas*, 1929
Printed ink on paper
30 × 24 cm
Unión Radio, Madrid
Biblioteca Nacional de España

Ramón Gómez de la Serna
"Greguerías onduladas" (Wavy Aphorisms), in *Ondas*, 1932
Printed ink on paper
30 × 24 cm
Madrid, Unión Radio
Biblioteca Nacional de España

Ludwig Gosewitz
Paneuropaflöte (Pan-Europe Flute), 1971
Mixed media
9 × 29 × 5 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Dan Graham
Rock My Religion, 1982–84
Digitalized video, color, sound, 55 min.
Museo Nacional Centro de Arte Reina Sofía
AD04017
pp. 152–153

Brion Gysin
"I Am That I Am," as published in *An Anthology of Concrete Poetry*, 1958 / published in 1967
Printed ink on paper (exhibition copy)
23.5 × 15.5 cm
Something Else Press, New York, Emmett Williams (ed.)
© Estate of Brion Gysin, 1960. All rights reserved
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Brion Gysin
I Am, 1961/released in 1964
Sound recording, 3:02 min.
Published in *Ou*, no. 20/21
© Estate of Brion Gysin, 1965. All rights reserved

Brion Gysin
Roller Poem, 1977
Print on tracing paper
122 × 22.5 cm
Guy Schraenen éditeur, Antwerp
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
p. 111

Raoul Hausmann
fmsbwtözäu, 1918
Print on brown paper
32.5 × 48.4 cm
Centre Pompidou, Paris. Musée national d'art moderne. Centre de création industrielle. Dation en 2000, AM 2000-204
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Raoul Hausmann
Plakatgedicht (Poster Poem), 1918
Printed ink on paper (exhibition copy)
32.5 × 47.5 cm
Photo © Centre Pompidou, MNAM-CCI, Dist. RMN-Grand Palais - © Adam Rzepka
© Raoul Hausmann, VEGAP, Madrid, 2020

Raoul Hausmann
kp'erioum, 1919
Print on Japanese paper
48.5 × 62.5 cm
Musée d'art contemporain de la Haute-Vienne, Château de Rochechouart
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Raoul Hausmann
"bbbb" and "fmsbw," in *Poèmes phonétiques 1918 tous justifiés* (Phonetic Poems from 1918, Justified), in *Ou*, no. 26/27, 1965
Sound recording, 1'09"
© Adagp, Paris, 2020

Bernard Heidsieck and Françoise Janicot
Encoconnage (Notching), 1975
Digitalized Super 8 film, black and white, sound, 19:21 min.
Private collection, Paris
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Juan Hidalgo
Viaje a Argel (Trip to Algiers), 1967
Printed ink on paper
22 × 30 cm
Zaj, Madrid
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

Isidore Isou
Les journaux des dieux, chapitre I (The Diaries of the Gods, Chapter I), 1950
Printed ink on paper
32 × 24 cm
Aux Escaliers de Lausanne, Paris
Archivo Lafuente

Isidore Isou
Les nombres XXVIII (The Numbers XXVIII), 1950
Oil on canvas
65 × 54 cm
The Elke and Arno Morenz Collection, Berlin

Isidore Isou
Marbre pour Dante: Enfer, Purgatoire, Paradis (Marble for Dante: Hell, Purgatory, Paradise), 1950
Sound recording, 4:06 min.
Licensed by SGAE

Isidore Isou
La plastique parlante (The Talking Plastic), 1960/1987
19 × 40 × 34 cm, 60 × 50 cm
Intervened magnetic tape recorder and printed manifesto
Collection Fabre
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Isidore Isou
La femme attend l'homme qui vient à cheval (The Woman Waits for the Man Who Comes Riding a Horse), 1963
Oil on hardboard
70 × 49.5 cm
The Elke and Arno Morenz Collection, Berlin
p. 101

Joe Jones
Music Machine, 1974
Metal ring, motor, tambourines, wooden marbles
60 × 60 cm
Fondation du doute, Blois, Collection C. Gualco
p. 136

Joe Jones
History of the Music Bike and Other Stories, 1977
Printed ink on paper and photographs
32 × 42.5 cm each
Francesco Conz, Verona
Collection Luigi Bonotto
p. 132

Joe Jones
Untitled, 1991
Mixed media
9 × 29 × 5 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
p. 135

Françoise Janicot
Poesie en action (Poetry in Action), 1984
Print on paper
27 × 20 cm
Loques/Nèpe, Issy-les-Moulineaux
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Genja Jonas
Kurt Schwitters reciting "Ursonate," 1926
Three b/w photographs (exhibition copies)
Approx. 15 x 11 cm each
© bpk | Sprengel Museum Hannover | Genja Jonas
pp. 86–87

Mauricio Kagel
Saitensprung (Escaped from Strings), 1968
Mixed media
30 × 19.7 × 1 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
p. 134

Mauricio Kagel
Ludwig Van, 1969
Digitalized film, sound, color, 90:41 min.
Winter & Winter GmbH

Mauricio Kagel
"Détour vers une plus haute sous-fidélité" (Detour Toward a Higher Low-Fidelity), in *VH 101*, no. 4, 1970
Printed ink on paper
27 × 19 cm
Editions Essellier, Paris
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía
pp. 138–139

Milan Knížák
"Composition No. 2," from the LP *Broken Music*, 1979
Sound recording, 3:30 min.
Sound work courtesy of the artist

Milan Knížák
Destroyed Music, 1983–85
Intervened vinyl records
30 × 30 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
p. 124

Eustachy Kossakowski
The Sea Concert, from Tadeusz Kantor's *The Panoramic Sea Happening*, 1967
B/w photograph (exhibition copy)
80 × 120 cm
Courtesy of the family of the artist

Katalin Ladik
Pastoral, 1971
Collage on paper
28.5 × 21 cm
Collection MACBA. Consorcio MACBA

Katalin Ladik
Eine kleine Nachtmusik (A Little Night Music), 1972
Collage on paper
28.5 × 20 cm
Collection MACBA. Consorcio MACBA

Katalin Ladik
The 1. Position, 1972
Collage on paper
28.5 × 20 cm
Collection MACBA. Consorcio MACBA

Katalin Ladik
The Queen of Sheba, 1973
Collage on paper
23 × 32.5 cm
Collection MACBA. Consorcio MACBA
p. 149

Katalin Ladik
phonopoetica (phonopoetics), 1976
Sound recording, two tracks, 14:29 min.
Galerija Studentskog kulturnog centra, Belgrade
Sound work courtesy of the artist
p. 49

Katalin Ladik
Allegretto, 1977
Collage on paper
34 × 24 cm
Collection MACBA. Consorcio MACBA

Katalin Ladik
Larghetto espressivo, 1977
Collage on paper
34 × 24 cm
Collection MACBA. Consorcio MACBA

Katalin Ladik
Sonate für die Frau DDR Leipzig (Sonata for Mrs. GDR Leipzig), 1978
Collage on paper
26 × 32.5 cm
Collection MACBA. Consorcio MACBA

Katalin Ladik
The B Flat Major Scale, 1978
Collage on paper
26.5 × 20 cm
Collection MACBA. Consorcio MACBA

Katalin Ladik
The 2. Position, 1978
Collage on paper
23 × 32.5 cm
Collection MACBA. Consorcio MACBA

Katalin Ladik
The Yellow Bolero, 1978
Collage on paper
24 × 34 cm
Collection MACBA. Consorcio MACBA

Maurice Lemaître
"Poèmes et musique lettristes" (Lettrist Poems and Music), in *Lettrisme*, no. 24, 1971
Vinyl records and printed ink on paper
26.8 × 20.8 cm
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

Arrigo Lora Totino
Idromegafono (Hydromegaphone), 1968
Assemblage of tin tubes
18 × 84.5 × 32.5 cm
Collection Luigi Bonotto
p. 116

LUGAN (Luis García Núñez)
Cuatro grifos sonoros (Four Sound Faucets), 1972
Plywood, chrome metal, and photoelectric cell
170 × 240 × 45 cm
Museo Nacional Centro de Arte Reina Sofía
AS07264

Man Ray (Emmanuel Radnitzky)
Indestructible Object, 1923/1965
Mixed media
21.6 × 11.4 × 11.4 cm
Private collection, with the collaboration of Fondazione Marconi, Milan
p. 90

Man Ray (Emmanuel Radnitzky)
Emak-Bakia (Leave Me Alone), 1926/1970
Mixed media
46.5 × 14 × 5 cm
Private collection, with the collaboration of Fondazione Marconi, Milan
p. 91

Walter Marchetti
Grelot No. 7 (Bell No. 7), 1967
Mixed media
27 × 21 cm
Collection Luigi Bonotto

Walter Marchetti
Arpocrate seduto sul loto (Harpocrates Sitting on a Lotus Flower), 1971
Print on paper
21 × 30 cm
Artes Gráficas Luis Pérez, Madrid
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

Walter Marchetti
In Terram Utopicam (In An Utopian Land), 1977
Vinyl record
30 × 30 cm
Milan, Cramps Records
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

Walter Marchetti
La caccia (Hunting), 1974
Vinyl record
30 × 30 cm
Cramps Records, Milan
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

Filippo Tommaso Marinetti
Zang Tumb Tumb. Adrianopoli Ottobre 1912. Parole in libertà (Zang *Tumb Tumb*; Adrianople October 1912; Words in Freedom), 1914
Printed ink on paper
20.1 × 14 cm
Edizione Futuriste di "Poesia," Milan
Archivo Lafuente
pp. 64–66

Filippo Tommaso Marinetti
Parole in libertà. Consonanti, vocali, numeri (Words in Freedom: Consonants, Vowels, Numbers), 1915
Printed ink on paper
29 × 23 cm
Direzione del Movimento Futurista, Milan
Archivo Lafuente

Filippo Tommaso Marinetti
Les mots en liberté futuristes (The Futurist Words in Freedom), 1919
Printed ink on paper
27 × 20 cm
Edizione Futuriste di "Poesia," Milan
Biblioteca Nacional de España
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Filippo Tommaso Marinetti and Pino Masnata
"La Radia. Manifesto futurista dell'ottobre 1933" (The Radia: Futurist Manifesto from October 1933), in *Autori e scrittori*, 1941
Printed ink on paper (exhibition copy)
31.5 × 21.5 cm
Published in Rome
Museo di Arte Moderna e Contemporanea di Trento e Rovereto

Robert Morris
Box with the Sound of Its Own Making, 1961
Wood, magnetic tape, and loudspeakers (exhibition copy)
24.8 × 24.8 × 24.8 cm
Seattle Art Museum, Gift of Bagley and Virginia Wright. Exhibition copy, Estate of Robert Morris. Courtesy of Castelli Gallery
p. 48

Ronald Nameth
Andy Warhol's Exploding Plastic Inevitable *with the Velvet Underground and Nico*, 1966
Four-channel video, b/w and color, sound, 24:04 min.

p. 151

Yoko Ono
Grapefruit: A Book of Instructions and Drawings, 1964/2000
Print on paper
14 × 14 cm
Simon & Schuster, New York
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

Paul van Ostaijen
De bezette Stad (The Occupied City), 1921
Print on paper (facsimile edition)
29 cm
Sienjaal, Antwerp
Private collection, Paris

Nam June Paik
Sound Wave Input on Two TV Sets (Vertical/Horizontal)
1963/1995
Installation, mixed media
94 × 51 × 51 cm
Collection Musée d'Art Contemporain de Lyon
p. 125

Nam June Paik and Jud Yalkut
TV Cello Premiere, 1971
Video, color, 7:25 min.
Museo Nacional Centro de Arte Reina Sofía
AD03617
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Raymond Pettibon
Records covers and t-shirts of the band Black Flag:
Six Pack, n.d.
Nervous Breakdown, 1978
Jealous Again, 1980
Everything Went Black, 1982
Family Man, 1983
My War, 1983
Split It In, 1984
The First Four Years, 1984
In My Head, 1985
Loose Nut, 1985
Vinyl records, 19 × 19 cm and 31 × 31 cm
Collection MACBA. Consorcio MACBA
p. 155

Raymond Pettibon
Sir Drone. Raymond Pettibon. Featuring Mike Kelley, 1989
Digitalized video, color, sound, 55:37 min.
Museo Nacional Centro de Arte Reina Sofía
AD06788
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Francesco Balilla Pratella
Musica futurista per orchestra (Futurist Music for Orchestra), 1912
Printed on paper
27 × 20 cm
Bologna, F. Bongiovanni
Biblioteca Nacional de España

Marthe Prévot
Raoul Hausmann reciting his poem "Oaoa," 1965–66
B/w photograph (exhibition copy)
20 × 15 cm
Musée d'art contemporain de la Haute-Vienne, Château de Rochechouart
p. 83

Vladan Radovanović
Voice from the Loudspeaker (Tape-art 1), 1975
Sound recording, 4:14 min.
Studentski kulturni centar, Belgrade
Sound work courtesy of the artist

Józef Robakowski
Idę (I Am Going), 1975
35mm film transferred to digital format, black and white, sound, 2:54 min.

Dieter Roth
Relief mit zwei Trompeten (Relief with Two Trumpets), 1962/1988
Assemblage/relief
150 × 115 × 60 cm and 132 × 130 × 42 cm
Dieter Roth Foundation, Hamburg
p. 145

Dieter Roth, in collaboration with other artists
Selten Gehörte Musik. 3 Berliner Dichterworkshop (Seldom Heard Music: 3rd Berliner Poetry Workshop), 1973
Vinyl records
30 × 30 cm
Edition Hansjörg Mayer, Stuttgart, London, Reykjavík
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
p. 144 (top left)

Dieter Roth, in collaboration with Gerhard Rühm and Oswald Wiener
Selten Gehörte Musik. Novembersymphonie (Seldom Heard Music: November Symphony), 1973
Vinyl records
30 × 30 cm
Edition Hansjörg Mayer, Stuttgart, London, Reykjavík
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Dieter Roth, in collaboration with Günter Brus, Hermann Nitsch,
Gerhard Rühm, and Oswald Wiener
Selten Gehörte Musik. Münchner Konzert (Seldom Heard Music: Munich Concert), 1974
Vinyl records
30 × 30 cm
Edition Hansjörg Mayer, Stuttgart, London, Reykjavík
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Dieter Roth, in collaboration with other artists
Selten Gehörte Musik. Das Berliner Konzert (Seldom Heard Music: Berliner Concert), 1974/published in 1977
Vinyl records
30 × 30 cm
Pari e Dispari, Reggio Emilia/Studio Morra, Naples/Edition Hansjörg Mayer, Stuttgart, London, Reykjavík
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
p. 144 (bottom right)

Dieter Roth
Posters for Selten Gehörte Musik: Prinzendorf; Lenbachhaus, Munich, 1974
Printed ink on paper
84.1 × 59.4 cm each
Private collection, Paris

Dieter Roth, in collaboration with Günter Brus, Hermann Nitsch, and Gerhard Rühm
Selten Gehörte Musik. Streichquartett (Seldom Heard Music: String Quartet), 1976
Vinyl records
30 × 30 cm
Edition Hansjörg Mayer, Stuttgart, London, Reykjavík
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
p. 144 (bottom right)

Dieter Roth, in collaboration with Gerhard Rühm and Oswald Wiener
Selten Gehörte Musik. Tote Rennen Lieder (Seldom Heard Music: Dead Heat Song), 1976
Vinyl records
30 × 30 cm
Edition Hansjörg Mayer, Stuttgart, London, Reykjavík
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Dieter Roth, in collaboration with other artists
Selten Gehörte Musik. Abschöpfsymphonie (Seldom Heard Music: Skimmed Symphony), 1979
Vinyl records
30 × 30 cm
Edition Hansjörg Mayer, Stuttgart, London, Reykjavík; Edition Lebeer-Hossmann, Brussels
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
p. 144 (bottom left)

Dieter Roth and Björn Roth
Keller-Duo (Cellar Duet), 1980-1989
Mixed media
200 × 240 × 60 cm
Dieter Roth Foundation, Hamburg

Dieter Roth
Harmonica Curse, 1981
Polaroids (10.9 × 9 cm) and audio cassettes
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Luigi Russolo, with the collaboration of Ugo Piatti
Intonarumori crepitatore medio (Medium Crackler Noise Intoners), ca. 1913/replica of ca. 2006 by Pietro Verardo
Mixed media
52 × 42 × 71 cm
Collezione futurista Pietro Verardo, Venice

Luigi Russolo, with the collaboration of Ugo Piatti
Intonarumori gracidatore acuto (High Croaker Noise Intoner), ca. 1913/replica of ca. 2006 by Pietro Verardo
Mixed media
53 × 42 × 75 cm
Collezione futurista Pietro Verardo, Venice

Luigi Russolo, with the collaboration of Ugo Piatti
Intonarumori gracidatore medio (Medium Croaker Noise Intoner), ca. 1913/replica of ca. 2006 by Pietro Verardo
Mixed media
56 × 47 × 100 cm
Collezione futurista Pietro Verardo, Venice

Luigi Russolo, with the collaboration of Ugo Piatti
Intonarumori ronzatore-scoppiatore (Buzzer-Exploder Noise Intoner), ca. 1913/replica of ca. 2006 by Pietro Verardo
Mixed media
39 × 45 × 70 cm
Collezione futurista Pietro Verardo, Venice

Luigi Russolo, with the collaboration of Ugo Piatti
Intonarumori rombatore-frusciatore verticale (Vertical Roarer-Buzzner Noise Intoner), ca. 1914/replica of ca. 2009 by Pietro Verardo
Mixed media
105 × 42 × 57 cm
Collezione futurista Pietro Verardo, Venice

Luigi Russolo, with the collaboration of Ugo Piatti
Intonarumori ululatore acuto (High Howler Noise Intoner), ca. 1914/replica of ca. 2002 by Pietro Verardo
Mixed media
48 × 42 × 71 cm
Collezione futurista Pietro Verardo, Venice

Luigi Russolo, with the collaboration of Ugo Piatti
Intonarumori ululatore basso (Bass Howler Noise Intoner), ca. 1914/replica of ca. 2002 by Pietro Verardo
Mixed media
80 × 45,5 × 157 cm
Collezione futurista Pietro Verardo, Venice

Luigi Russolo, with the collaboration of Ugo Piatti
Intonarumori ululatore medio (Medium Howler Noise Intoner), ca. 1914/replica of ca. 2002 by Pietro Verardo
Mixed media
53 × 42 × 95 cm
Collezione futurista Pietro Verardo, Venice

Luigi Russolo
"Risveglio di una città" (Awakening of a City), in *Lacerba*, 1914
Printed ink on paper
37 cm
Published in Florence
Collezione futurista Pietro Verardo, Venice
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Takako Saito
Music Bottle, 1983
Mixed media
16 × 14 × 14 cm
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst
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Erik Satie
Relâche. Ballet instantanéiste en deux actes, un entr'acte cinématographique, et "le queue du chien" (Relâche: Instantaneous Ballet in Two Acts, a Cinematographic Entr'acte, and "The Dog's Tail"), 1926
Printed ink on paper
33 cm
Rouart, Lerolle & Cie., Paris
Centre Pompidou, Paris. Musée national d'art moderne. Centre de création industrielle. Acquisition, BK RLQ 879

Mieko (Chieko) Shiomi
Spatial Poem, 1965–75/2006
Printed ink on paper
21 × 27 cm
Mieko Shiomi, Osaka
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

Mieko (Chieko) Shiomi
Invitations for the *Spatial Poem No. 1–No. 9*, 1965–75
Printed ink on paper
Various sizes, 20 × 15 cm approx.
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

Nicolas Schöffer
Chronos 11, 1971
Mixed media
193 × 144 × 63 cm
Paris, private collection
p. 121

Guy Schraenen, in collaboration with other artists
Aeropus, 1982
Mixed media on paper
42 × 29.7 cm each
Private collection, Paris
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Erwin Schulhoff
In futurum (Fünf Pittoresken, III) (In the Future [from Five Pittoresques, III]), 1919/ed. 1930s
Printed ink on paper (exhibition copy)
50 × 35 cm
Jatho Verlag, Berlin
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Kurt Schwitters
Untitled (Hartwig & Vogel), 1926
Collage on cardboard
16.5 × 13.5 cm
Museo Nacional Centro de Arte Reina Sofía
DE01946

Kurt Schwitters
"Ursonate," in *Merz*, no. 24, 1932
Printed ink on paper
21.2 × 14.8 cm
Hannover, Kurt Schwitters (ed.)
Archivo Lafuente
p. 85

Kurt Schwitters
Ursonate, 1932
Sound recording, 3:30 min.
Courtesy of the Kurt and Ernst Schwitters Foundation at Sprengel Museum Hannover

George Smits
Personal Sound Maker, 1977
Bamboo and expanded polystyrene
80 × 30 × 23 cm (uninstalled)
Guy Schraenen éditeur, Antwerp
Zentrum für Künstlerpublikationen, Sound Collection Guy Schraenen, Weserburg Museum für moderne Kunst

Takis
Musical, 1972
Wood, guitar string, a needle hanging from a nylon string, electromagnet
200 × 92.5 × 13 cm
Xippas Gallery
p. 120

Jean Tinguely
Radio-Skulptur (Radio Sculpture), 1962
Mixed media
90 × 30 × 25 cm
Museum Tinguely, Basel. A cultural commitment of Roche
p. 115

Various authors, Tristan Tzara (ed.)
Dada, no. 7 ("Dadaphone"), 1920
Printed ink on paper
27 × 19.5 cm
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía
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Edgar Varèse
Poème électronique (Electronic Poem), ca. 1958
Sound recording, 8:03 min.
Licensed by SGAE

Dziga Vertov
Enthusiasm: Symphony of the Donbass, 1931
Digitalized 35mm film, black and white, sound, 65 min.
Österreichisches Filmmuseum, Vienna
p. 24

Gil J Wolman
L'Anticoncept (The Anti-Concept), 1951
Digitalized 35mm film, black and white, sound, 60 min.
Museo Nacional Centro de Arte Reina Sofía
AD06362
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Iannis Xenakis
Concret PH (Concrete Hyperbolic Paraboloid), 1958
Sound recording, 2:45 min.
Licensed by SGAE

Zaj
Concierto postal (Postal Concert), 1965
Photomechanical print on cardboard
Various sizes, up to 29 × 20.5 cm
Museo Nacional Centro de Arte Reina Sofía
AD00623-043

Zaj
Tamarán (documentary film of the performance by Juan Hidalgo), 1976
Video, black and white, sound, 21:20 min.
With the collaboration of Radio Televisión Española

Zaj
ZAJ, 1987
Prints on cardboard and paper (facsimile edition)
Various sizes, in a box
Las Palmas de Gran Canaria, Gobierno de Canarias
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía

Other works included in the publication

Antonin Artaud
"L'attaque des camions de la solde," with a lithograph by Georges Braque, in Iliazd (ed.), *Poésie de mots inconnus*, 1949
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía
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Joseph Beuys
Siberian Symphony, performed during Festum Fluxorum/ Fluxus/ Musik und Antimusik/ Das Instrumentale Theater, Staatliche Kunstakademie, Düsseldorf, February 2, 1963
Gelatin silver print
17.3 × 23.3 cm
The Museum of Modern Art, New York. The Gilbert and Lila Silverman Fluxus Collection Gift. Acc. no.: 2059.2008
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Juan Blanco
Design of the multiórgano, 1942
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Anton Giulio Bragaglia,
The Smoker—The Match—The Cigarette (Motion Study), 1911
Gelatin silver print
11.8 × 14.5 cm
The Metropolitan Museum of Art, Gilman Collection, Gift of the Howard Gilman Foundation, 2005 (2005.100.247)
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William Burroughs
The Electronic Revolution, 1970
Expanded Media Editions, [West] Berlin
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Studio of the Groupe des Recherches Musicales in Paris, 1962
Courtesy of Institut National de l'Audiovisuel – Groupe de recherches musicales
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Terry Fox
Instruments to be Played by the Movement of the Earth, 1987
Courtesy of California College of the Arts, San Francisco
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Raoul Hausmann and Daniel Broïdo
Patent of the optophone, 1936
Jacques Donguy, "Machine Head: Raoul Hausmann and the Optophone," in *Leonardo* 34, no. 3 (2001): pp. 217–220
Documentation Centre, Museo Nacional Centro de Arte Reina Sofía
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alcides lanza
ekphonesis II (1968-III), 1968
Courtesy of the artist
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Bernhard Leitner
Soundcube, 1969
Courtesy of the artist
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Annea Lockwood
Piano Burning, 1968
Courtesy of the artist
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Étienne-Jules Marey
Analysis of the Flight of a Pigeon by the Chronophotographic Method, 1883–87
Albumen silver prints
6.1 × 22.9 cm (each strip)
The Museum of Modern Art, New York. Horace W. Goldsmith Fund through Robert B. Menschel. Acc. no.: 316.1993
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Mieko (Chieko) Shiomi
Spatial Poem No. 1: Word Poem, 1965/2000
Flags and map board
30 × 46 cm
Luigi Bonotto Collection
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Virgilio Tosco
Complejo No. 2 (Complex No. 2), 1965
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Gil J Wolman
"Introduction à Wolman," in *Ur. Cahiers pour un dictat culturel*, no. 1, 1950
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