Martian Anthropology 7-8-9

for electroacoustic sextet Mark Applebaum, 2006

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Commissioned by the Paul Dresher Ensemble
Dedicated to Paul Dresher
Duration: $\sim 12'+$ Movement durations: I-3' II-4'+

Instrumentation

III—5'

Player 1

Amplified CrackleBox (I)
Electric Guitar (II)
Multi-Effects Signal Processor (II)
Sample Playback Device (III)

Player 2

Amplified CrackleBox (I) Sample Playback Device (III)

Player 3

Amplified CrackleBox (I) Sample Playback Device (III)

Player 4

Amplified CrackleBox (I) MIDI Controller (II) Bricolage Drumset (III)

Player 5

Amplified Violin (I, III)

Player 6

Amplified Bass Clarinet (I, III)

MARTIAN ANTHROPOLOGY

Martian Anthropology began as a thought experiment, a game that I would play with my students. The premise, set in the future, is as follows:

Humankind has obliterated itself in a nuclear apocalypse. Everyone and everything was instantly and thoroughly annihilated. All records of our ever having been here—buildings, artifacts, the tiniest scraps of evidence—have disappeared. Martian archeologists later visit the Earth and discover three exceptions, three exclusive objects. From these three objects their anthropologist colleagues will speculate on our culture, our values, traditions, and customs, leisure activities, intellectual disciplines, artistic and scientific accomplishments, and so forth. In the same way that we construct "daily life" museum exhibits of early and prehistoric cultures on the basis of a few cave paintings, shards of Minoan pottery, or stone tools, so too must the Martian anthropologists create an "Earth Museum" solely on the basis of these three found objects.

The game invites the players to choose the three objects and to imagine—with delight and horror—what these objects would tell alien observers. For example: the objects might be a copy of the *Gettysburg Address*, a recording of the Abba song *Mama Mia*, and an unopened can of clam chowder. Or instead it could be a deck of tarot cards, the owner's manual for a toaster oven, and a tube of Chapstick. It might be a partly erased hard drive, a business card for an escort service, and a wheelchair. It might be an angry e-mail message you once sent, a cancelled check that you wrote for a purchase long ago, and the last voice mail message you left a friend. Perhaps it could even be the remains of Jimmy Hoffa, a city map of Atlantis, and the Holy Grail.

The three objects form a surreal triangle. They tell a peculiar story, individually and through collective synergies.

The things we do, make, and consume leave a record of who we are. For the artist this game suggests a special meaning about making works of art. It invites us to assume or ignore a weighty, if conceptual, responsibility about what our work might say, not only to our present audience, but to ones that are distant and almost unimaginable.

Martian Anthropology 1•2•3, the first in a series of three-movement works, is a composition for orchestra that reminisces on this game with some amusement and wonder. Its three movements are a kind of surreal triangle, a web of disparate, idiosyncratic objects comprising an expressionistic romp for full orchestra (including exoticisms such as a septet of percussionists hammering nails in accompaniment to a lyrical cello melody); a disturbingly sincere elegy for strings alone in memory of my deceased sister; and an improvisational game piece for full orchestra in accompaniment to an improvising soloist on an original electroacoustic sound-sculpture (made of junk, hardware, and found-objects mounted on soundboards) with live electronics.

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Martian Anthropology 4.5.6—my contribution to the collaborative opera Es lebe der Sport commissioned by Festival ADEvantgarde in Munich—originates in the same premise of alien voyeurs (Martians, the audience) who chance upon a foreign culture. The aliens discover a fictional Olympiad, a surreal triptych of hypothetical games that reveal formidable maturity—a kind of mannerist artform based on a lost classic and preclassic ancestry.

Martian Anthropology 7.8.9 for the Paul Dresher Ensemble is the third collection of Martian discoveries. The first discovery (Movement I) is a mercurial and highly virtuosic duo for violin and bass clarinet bounded by outbursts from a quartet playing CrackleBoxes, hand-held portable electronic glitch instruments whose wheezes and sputters are generated by unpredictable circuitbending. The second find (Movement II) is an atmospheric duo for electric guitar and MIDI controller: the guitarist chooses pitches improvisationally from a non-symmetric matrix of possibilities (chords made up of 2-7 notes) while the controller operator transforms the guitar's timbre by changing values on a signal processor improvisationally in real time. The final discovery (Movement III) features improvised cadenzas on an amplified bricolage drumset in which drums and cymbals have been replaced by pizza boxes, egg cartons, bits of aluminum foil. plastic bags, etc., and is accompanied by temporally determinate outbursts whose sounds are arbitrarily selected from a reservoir of 70 household sounds and paired with amplified violin and bass clarinet utterances; thrice during the movement the full ensemble comes into coordination and repeat a mantra-like articulation at regular intervals that are subject to the rhythmic deformations—the directive to individual players to attack the note slightly early or slightly late in order to suggest shifts in viewing perspective of a complex object.

Instead of worrying about the coherence of this multi-movement work, I obsessed over creating a kind of meaningful incoherence. The music aspires always to delight, baffle, and engage the audience. If successful, the experience of its diverse juxtapositions will be slightly weird ("what the hell was that?") but also one of fascination ("can I hear more?").

Movement I: CrackleBoxes

The CrackleBox is a portable, hand-held, battery-operated electronic glitch instrument whose sounds are produced by circuit-bending. The CrackleBox produces no sound until the player applies finger pressure directly to the circuit board (which consists of six metal contact areas). The player acts as a human patch cable connecting the contact areas in numerous combinations. The result is a wide variety of bizarre and mostly unpredictable sounds. However, the CrackleBox does have a kind of logic that can be learned through experience and intuition.

The original CrackleBox was invented in the 1970s but Michel Waisvisz. Today CrackleBoxes may be purchased from STEIM in the Netherlands (who, at present, are reissuing them) or may be borrowed from the composer.

The CrackleBoxes should be amplified via individual directional microphones. Alternatively, the CrackleBox quartet may choose to assemble together at one or more microphones. For example, among many possibilities, they might sit together on chairs located downstage opposite the violin/bass clarinet duo, but facing upstage or in profile to the audience.

The pictograms that constitute the CrackleBox notation are intended only as a rough guide, as inspirational visual prompts whose implied energy, unpredictability, and playfulness correspond to the sonic character of the CrackleBox. The pictograms that depict the CrackleBox spasm in measure 50 need not be rendered in any literal way, and the final blast in measure 51 is equally indeterminate; however, the ensemble will attempt an imitative canon at the opening of the movement, interpreting the pictograms as motives of *sound* or motives of *action*.

Stereo panning of the violin/bass clarinet duo should be moderately wide; panning of the CrackleBox quartet should be very wide.

Movement II: Guitar Processing

During movement II sound is heard only from the electric guitar whose tone is defined by custom patches on two DigiTech GSP-2101 processors (or equivalent) chained together, the second one equipped with the optional S-DISC memory and processing expansion. The patches involve the following modules and their settings:

Processor I:

- Compression—Bypassed or player determined.
- Distortion—Bypass/On: Bypass [CC1 Bypass/On]; Type: Grunge; Gain: 0.6.
- EQ—Flat, player determined, or as follows: 80Hz +6dB; 160Hz +6dB; 320Hz +2dB; 640Hz flat; 1.28kHz flat; 2.56kHz +4dB; 5.12kHz +8dB.
- Detuner Detune: 15 Cents; Pre Delay: 0ms; Voice Delay: 0ms.
- 2x1 Mixer
- Dual Pitch Shifter—Level: <u>0</u> [CC2 0-100]; Pre Delay: 0ms; Pitch 1: -12; Detune 1: <u>0</u> Cents [CC3 -50 to +50]; Pitch 2: +12 Notes; Detune 2: <u>0</u> Cents [CC3 +50 to -50]; Track: 8-12; Regeneration: Off.
- Auto Wah—Level: 0 [CC4 0-100]; Sensitivity: 65.
- 4x1 Mixer

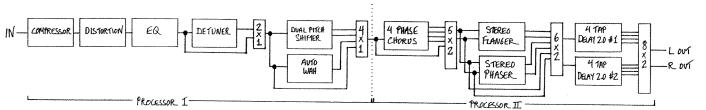
Processor II:

- 4 Phase Chorus (S-DISC i)—Delay 1: 40.0; Delay 2: 30.0; Delay 3: 20.0; Delay 4: 10.0; Speed: <u>.25Hz</u> [CC5 .25Hz-2.0Hz]; Depth: 8.00ms.
- 5x2 Mixer (S-DISC i)
- Stereo Flanger (S-DISC i)—Level: <u>0</u> [CC6 0-100]; Delay: 0; Regeneration: 94%; Speed: .79Hz; Depth: 3.00ms; Waveform: Triangle.
- Stereo Phaser (S-DISC ii)—Level: <u>0</u> [CC7 0-100]; Regeneration: 92%; Speed: <u>.40Hz</u> [CC8 .40Hz-3.00Hz]; Depth: 20; Waveform: Sine.
- 6x2 Mixer (S-DISC ii)
- 4 Tap Delay 2.0 #1 (S-DISC ii)—Delay 1: .400 (Panned -50); Delay 2: 1.300 (Panned +50); Delay 3: 1.650 (Panned -30); Delay 4: 2.00 (Panned +30); Feedback: 75% [CC9 25%-75%]; Repeat Hold: Off.
- 4 Tap Delay 2.0 #2 (S-DISC ii)—Delay 1: 0ms (Panned 0—at the center); Delay 2: 1.375 (Panned +50); Delay 3: 1.725 (Panned -30); Delay 4: 1.875 (Panned +30); Feedback: 75% [CC9 25%-75%]; Repeat Hold: Off.
- 8x2 Mixer (S-DISC ii)

Where not explicitly given, module levels and mixer input levels should be 100 (unless adjustments are necessary). Stereo inputs to mixers should be panned hard left (-50) and hard right (+50); quad inputs to mixers should be panned hard left (-50), soft left (-25), soft right (+25), and hard right (+50), except for the 4 Tap Delays whose panning is given.

CC: Parameters that are to be controlled by external MIDI controllers appear in bold with their controller ranges after; default (starting) settings are underlined. Note: CC3 controls two parameters in tandem (by one external controller)—the Dual Pitch Shifter starts with no detuning but when CC3 is engaged, one pitch is detuned sharp (up to +50 cents) while the other pitch is detuned flat (down to -50 cents); CC9 controls the feedback level of both 4 Tap Delays in tandem (by one external controller).

The modules are arranged into an algorithm thus:



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The guitarist builds chords of 2-7 tones improvisationally by following the score's "matrix" of cells, each consisting of one pitch. The guitarist may begin at any cell, playing its pitch only once. From there, the guitarist must choose a straight line (vertical, horizontal, or diagonal, as given) on which the cell resides and play each and every cell on that straight line. Cells within a straight line may be played in any order but they may not be repeated. Cells may be played in any rhythm—in rapid succession or slowly, regularly or irregularly; however, it is desirable that, most of the time, all cells on a straight line are heard overlapping (via a lengthy electronic delay) to some degree.

After a straight line has been "completed," the guitarist must choose another straight line that intersects with the last cell visited. The straight line must be different from the one just completed. Before embarking on the next straight line, the guitarist should wait until much or most of the current chord has faded. Upon embarking on the next straight line, the guitarist may choose to rearticulate the last cell or not.

All articulations must have a soft envelope: notes must first be attacked while the guitar's volume (volume knob or dedicated volume pedal) is set to zero, after which the volume is faded up fully and then back down to zero. Notes should be played expressively with a warm vibrato. Occasionally the guitarist may bend a note up by a microtone, a half step, or a whole step, or, conversely, "whammy" it downwards; these occasional notes will produce a blurred pitch field rather than a precise pitch. Additionally, the guitarist may choose to employ a metal slide to glissando continuously from one cell to the next; in this instance the destination pitch will be included within the single sound envelope. Pitches may be fingered conventionally or played as a harmonic (e.g. B notated two octaves plus one major seventh above middle C).

The movement may end at any time after a straight line has been completed. The total duration of the movement must be at least three minutes and, more optimally, four minutes or more in duration.

Although the guitar is the unique sound source, the nature of its sound is adjusted improvisationally by Player 4. Continuous controllers are required, each one assigned to an individual continuous controller number that, in turn, changes a parameter on the guitar's signal processor:

- 1: Distortion Bypass (the controller toggles between Bypass and On; the piece begins and ends in Bypass)
- 2: Dual Pitch Shifter Level (MIDI values 0-127 are mapped to processor values 0-100; the piece begins and ends at <u>0</u>)
- 3: Dual Pitch Shifter Detune (MIDI values 0-127 are mapped to processor values -50 to +50 for pitch one; the piece begins and ends at 0)⁺
- 3: Dual Pitch Shifter Detune (MIDI values 0-127 are mapped to processor values +50 to -50 for pitch two (the inverse of pitch one); the piece begins and ends at <u>0</u>)[†]
- 4: Auto Wah Level (MIDI values 0-127 are mapped to processor values 0-100; the piece begins and ends at <u>0</u>)
- 5: 4 Phase Chorus Speed (MIDI values 0-127 are mapped to processor values .25Hz to 2.0Hz; the piece begins and ends at .25Hz)
- 6: Stereo Flanger Level (MIDI values 0-127 are mapped to processor values 0-100; the piece begins and ends at 0)
- 7: Stereo Phaser Level (MIDI values 0-127 are mapped to processor values 0-100; the piece begins and ends at 0)
- 8: Stereo Phaser Speed (MIDI values 0-127 are mapped to processor values .40Hz to 3.00Hz; the piece begins and ends at .40Hz)
- 9: 4 Tap Delay 1 Feedback (MIDI values 0-127 are mapped to processor values 25%-75%; the piece begins and ends at 75%)[†]
- 9: 4 Tap Delay 2 Feedback (MIDI values 0-127 are mapped to processor values 25%-75%; the piece begins and ends at 75%)[†]



[†] Notes: (1) Unlike most CCs, the 4 Tap Delay control begins and ends at its maximum value (75%) and the Pitch Shifter's detune begins at a value of 0 on a scale from -50 to +50 (thus MIDI note value 64); (2) CC3 and CC9 each control two values in tandem; (3) as Player 4 adjusts the 4 Tap Delay feedback downwards, the guitarist may find it desirable to move from cell to cell more quickly because a given chord will fade away more quickly.

Player 4 will allow the guitarist to begin the movement with the signal processor parameters set to their starting positions. During the course of the movement the parameters may be adjusted as Player 4 sees fit, subtly or grossly, slowly or quickly, one parameter at a time or in multiples, etc. (By way of a default aesthetic, however, the goal should be a gradually evolving landscape.) A given parameter may be changed once and back during the movement. multiple times, or not at all. The piece may "climax" in the simultaneous and maximal transformation of all nine controller settings, or some controllers may peak and return to their default before others are activated. Regardless of the nature of the controller transformations, the movement must end as it began—with the signal processor parameters set to their starting positions.

A rough plan, as well as a target duration, might be predetermined by the duo. However, it is hoped that the improvisational decisions of pitch and timbre will mutually redirect the players' spontaneous musical agenda.

Movement III: Bricolage Drumset

Coordinated articulations in movement III are cued by the soloist or by one member of the ensemble quintet. These two players may be synchronized via stopwatches; should there arise a discrepancy, conducted cues supercede the indication on the stopwatch. Coordinated articulations are of two types: (1) Accompaniment Outbursts—which are cued by the designated member of the ensemble quintet and which may be ignored by the soloist; and (2) Mantra Articulations—which are to be cued by the soloist. Note: the soloist will maintain an absolutely steady pulse during mantra articulations; meanwhile, the remaining players are directed to anticipate the pulse (by an offset of 400-1200ms), to play in synchronicity with the soloist, or to play after the pulse (by an offset of 400-1200ms), as given by the symbols—, o, and + respectively. When immediately repeating an articulation that either anticipates the pulse or is after the pulse, it is preferred that players change their offset within the 400-1200ms span.

Four fully improvised solo cadenzas on a bricolage drumset, located downstage, are performed by the soloist during the movement from 0:00-1:30, 2:05-2:30, 3:12-4:04, and 4:21-4:51. These are thrice interrupted by the mantra articulations (1:30-2:05, 2:30-3:12, and 4:04-4:21). The bricolage drumset is arranged like a rock drumset (five or more pieces—kick drum, snare drum, two rack toms, floor tom—with hi-hat and two or more cymbals). However, the drumset is to be constituted by substitute materials: drums are actually cardboard boxes, pizza boxes, Tupperware containers, empty coffee cans, egg cartons, etc.; cymbals are actually plastic freezer bags, paper sacks, pieces of aluminum foil, etc. Standard drumset hardware (cymbal stands, kick drum pedal, hi-hat pedal, drum throne, etc.) should be employed so that it resembles a typical drumset and, to a certain extent, plays like one. The bricolage drumset may be played with any type of mallets; wire brushes are particularly encouraged. The cadenzas may be of any style or aesthetic tendency; a "discourse" may continue from one cadenza to the next, or each cadenza may illustrate an autonomous musical idea. The notated pictograms—which can be carefully interpreted, vaguely considered, or ignored entirely—are merely graphic suggestions of the invention and whimsy that might characterize the solo.

The manner of amplification should be adjusted to suit the venue. Two overhead microphones may be sufficient. The bricolage drumset is, unlike a conventional drumset, intended mostly as a delicate and quiet instrument. As such, ensemble accompaniment outbursts are meant to partially or fully obscure the bricolage drumset during their brief envelopes; the bricolage drumset's amplification need not compete fully with these vociferous outbursts.

The accompaniment outbursts are performed by the ensemble quintet. The violin's and bass clarinet's outbursts are notated conventionally. Players 1, 2, and 3, however, make outbursts by randomly choosing among a set of 70 short samples (a library of close-mic recordings of household sounds available from the composer). Samples may be played once, more than once, or not at all. A single outburst may contain one or more samples: a circled number attached to each of the outbursts corresponds to the number of samples to be rapidly articulated in a single figure. Noteheads appearing above and below the staff merely suggest arbitrary and fanciful phrase contours.

The 70 samples should be divided among the players: Player 1: 23 samples; Player 2: 24 samples; Player 3: 23 samples. Each sample should be assigned randomly to two or three keys/pads on a single player's triggering device: on one key/pad the sample should appear in its given form; on the other key(s)/pad(s), the sample should be randomly transposed up or down 100-200 cents (from a minor second to a major second). A sample playback device that does not have the requisite number of keys/pads (e.g. 24 samples X 3 transposition levels = 72 keys/pads) will necessitate a "program change" from time to time to switch among key/pad sample assignments during the movement.

There are three sections of *mantra articulations*. These are performed by the ensemble quintet in coordination with the soloist. As before, the violin's and bass clarinet's outbursts are notated conventionally. The soloist must choose three different sounds and assign them to each *mantra articulation* section. The sounds must be associated with a suitably large physical gesture as this will serve as the cue for the ensemble coordination.

Players 1, 2, and 3 also utilize three mantra articulation sounds. The selection of these sounds is not arbitrary. For mantra articulation section 1, Player 1 plays only the sample called "Mantra 1.1;" for mantra articulation section 2, Player 1 plays only the sample "Mantra 1.2;" for mantra articulation section 3, Player 1 plays only the sample "Mantra 1.3." Similarly Player 2 will employ samples "Mantra 2.1," "Mantra 2.2," and "Mantra 2.3," respectively, and Player 3 will employ samples "Mantra 3.1," "Mantra 3.2," and "Mantra 3.3," respectively. These three sounds appear beneath, on, and above the staff, respectively. They should be assigned to unique keys/pads without transposition.

All of the players are urged to repeat a given *mantra articulation* in exactly the same manner. To the extent possible, the dynamic, duration, intonation, and timbre must be identical. However, the timing, with respect to the soloist's cue, will vary for each player as much as ± 1200 ms, as aforementioned.

Stereo panning of the ensemble should approximate the players' positions onstage.

ACCIDENTAL POLICY

Accidentals apply only to the notes to which they immediately adhere; additional "courtesy" natural signs occasionally appear.

PARTS

Players read from copies of the full score. In cases that involve difficult page turns individual players are encouraged to photocopy bits from the score in order to make customized cut-and-paste, tape-up, reduced, and/or enlarged parts as desired.

TRANSPOSITIONS

Instruments sound at notated pitch except:

- the electric guitar which sounds one octave lower than notated; and
- the bass clarinet which sounds one major ninth lower than notated.

NOTATION

+ Quarter-tone sharp.

Quarter-tone flat.

A short note.

A grace note figure, to be played as fast as possible.

A trill; the trilled note is given in parentheses.

1R The trill speed changes.

"Limping" trill; instead of an even oscillation between the base note and trilled note, the duration of the base note is substantially longer (approximately 3:1 or 4:1) than the trilled note; the pattern should be regular, however.





Timbral trill; trill to an alternate fingering of the same pitch or to the nearest microtone.



Glissandi occur over the entire duration notated; stems are provided to show the passage of time and do not suggest points of emphasis or rearticulation.

Linear transformation from one state to another.

n

Niente.

L.V.

Let vibrate, do not dampen.



Dampen immediately.



Vocalized hushing sound: "sh" as in the English word "hush".

Violin

All artificial harmonics sound two octaves above written pitch.

SP Molto sul ponticello; bowed at the bridge to produce a glassy sound; this should be exaggerated.

Molto sul tasto flautando; bowed at the fingerboard to produce an airy sound; this should be exaggerated.

Over pressure; noisy, intense, grinding pitch distortion produced by excess downward pressure and slow bow speed.

ORD Ordinario; cancels sut ponticello, sul tasto, and over pressure.



Rapid, unmeasured tremolo



"Half harmonic"; note is fingered lightly to produce noisy, semi-uncontrolled pitch.



Bowed double-stop on strings between bridge and tailpiece.

Highest note on the string—beyond the fingerboard.

P Snap "Bartok" pizzicato.

Left-hand pizzicato.

Hammered note played directly on the fingerboard with the left hand.

GEIT.

Arco gettato, the bow bounces off the string and rebounds to make successive attacks.

CLB GER.

Col legno battuto gettato, the wood of the bow bounces off the string and rebounds to make successive attacks.

Bass Clarinet

Flutter tongue.

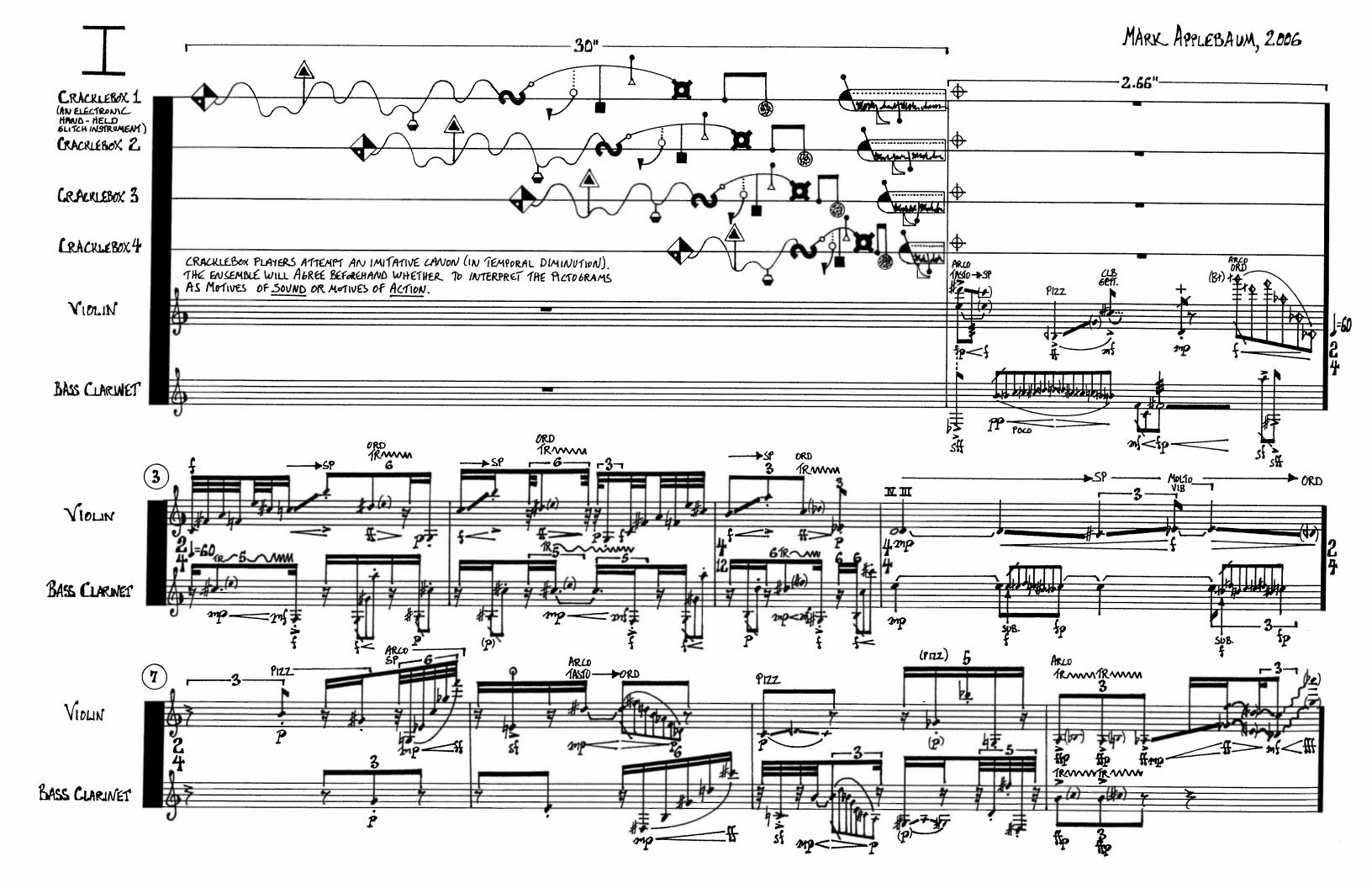
Slap tongue.

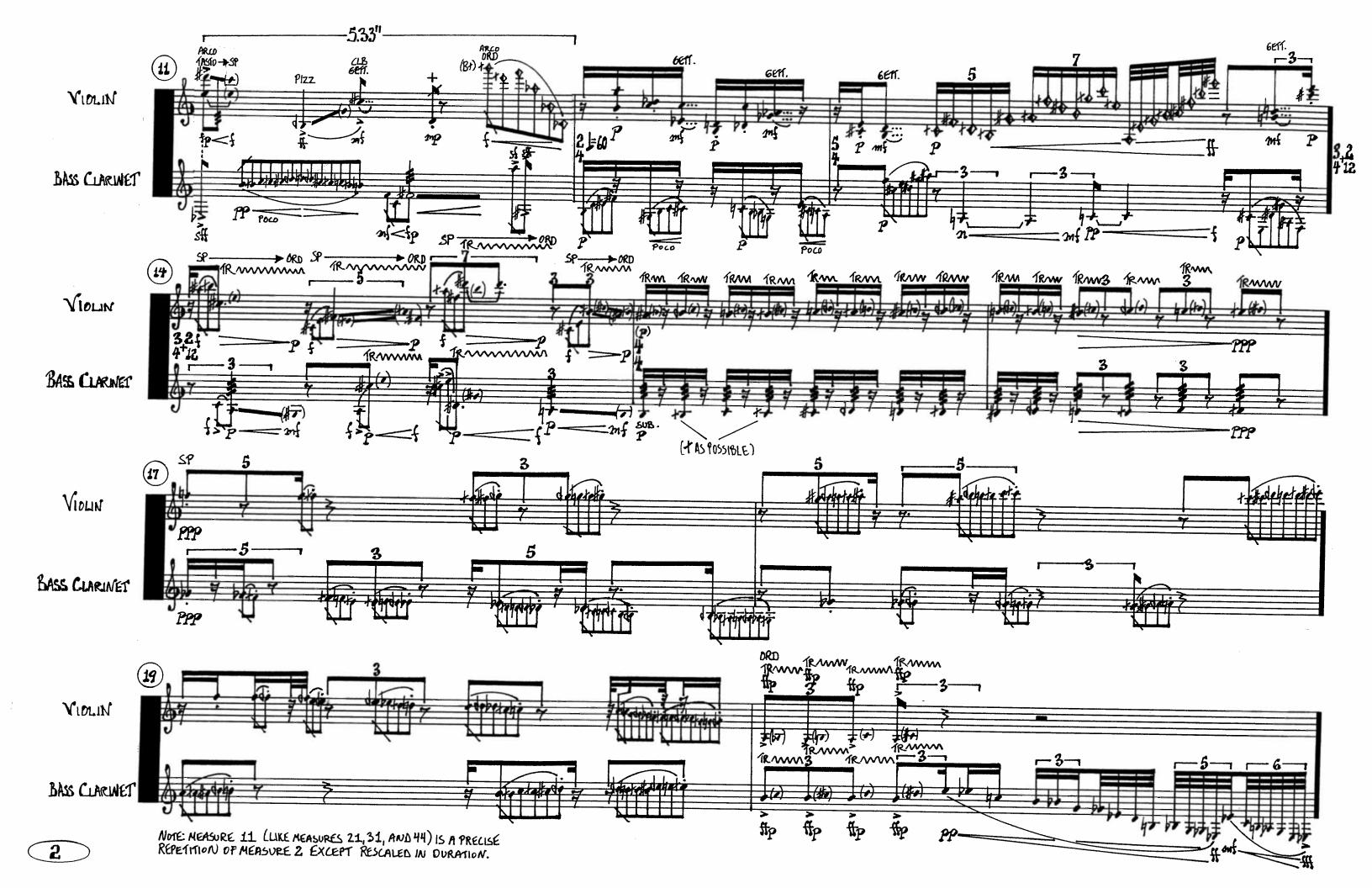
Kiss; sucking sound made on mouthpiece.

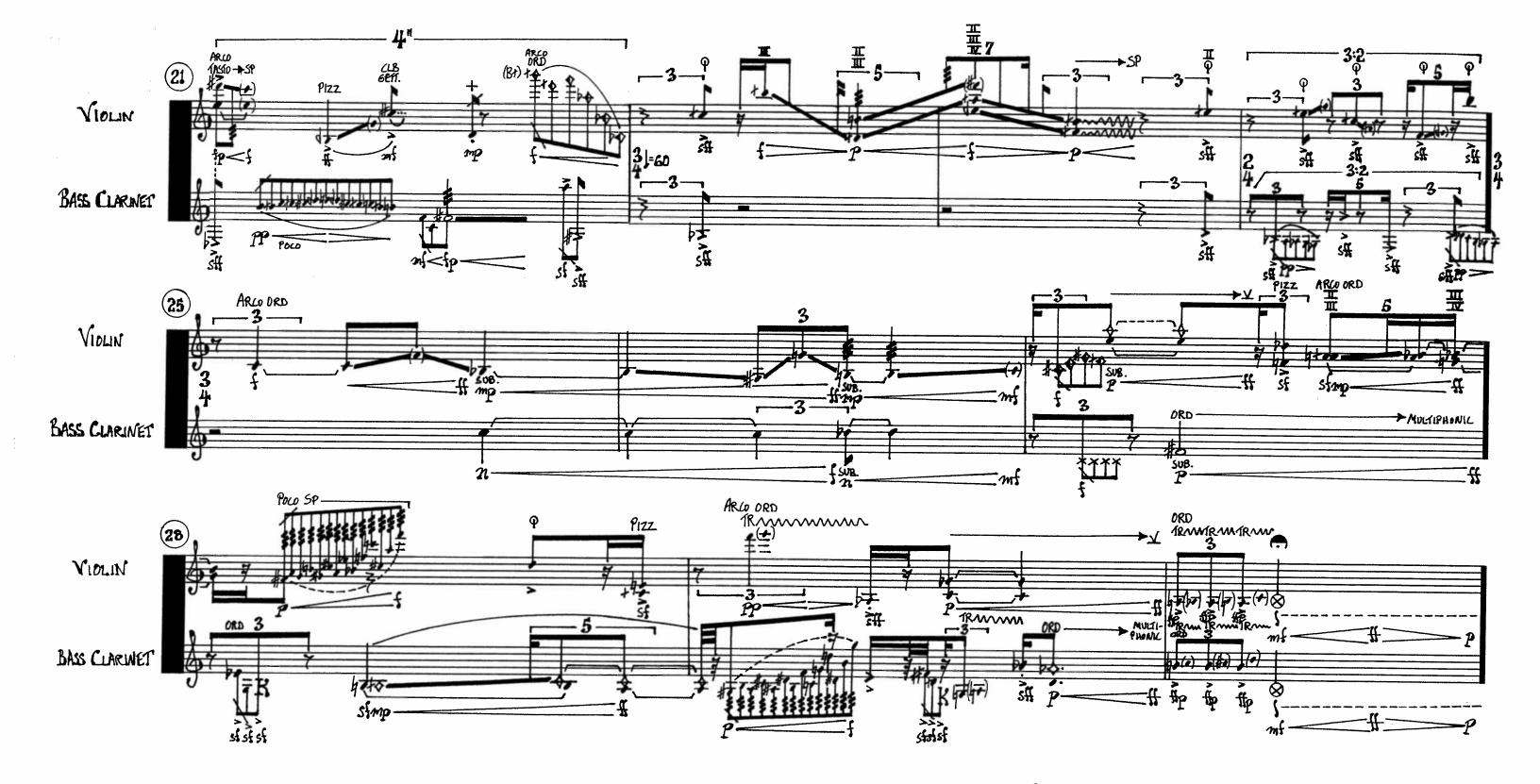
Noisy key clicks.

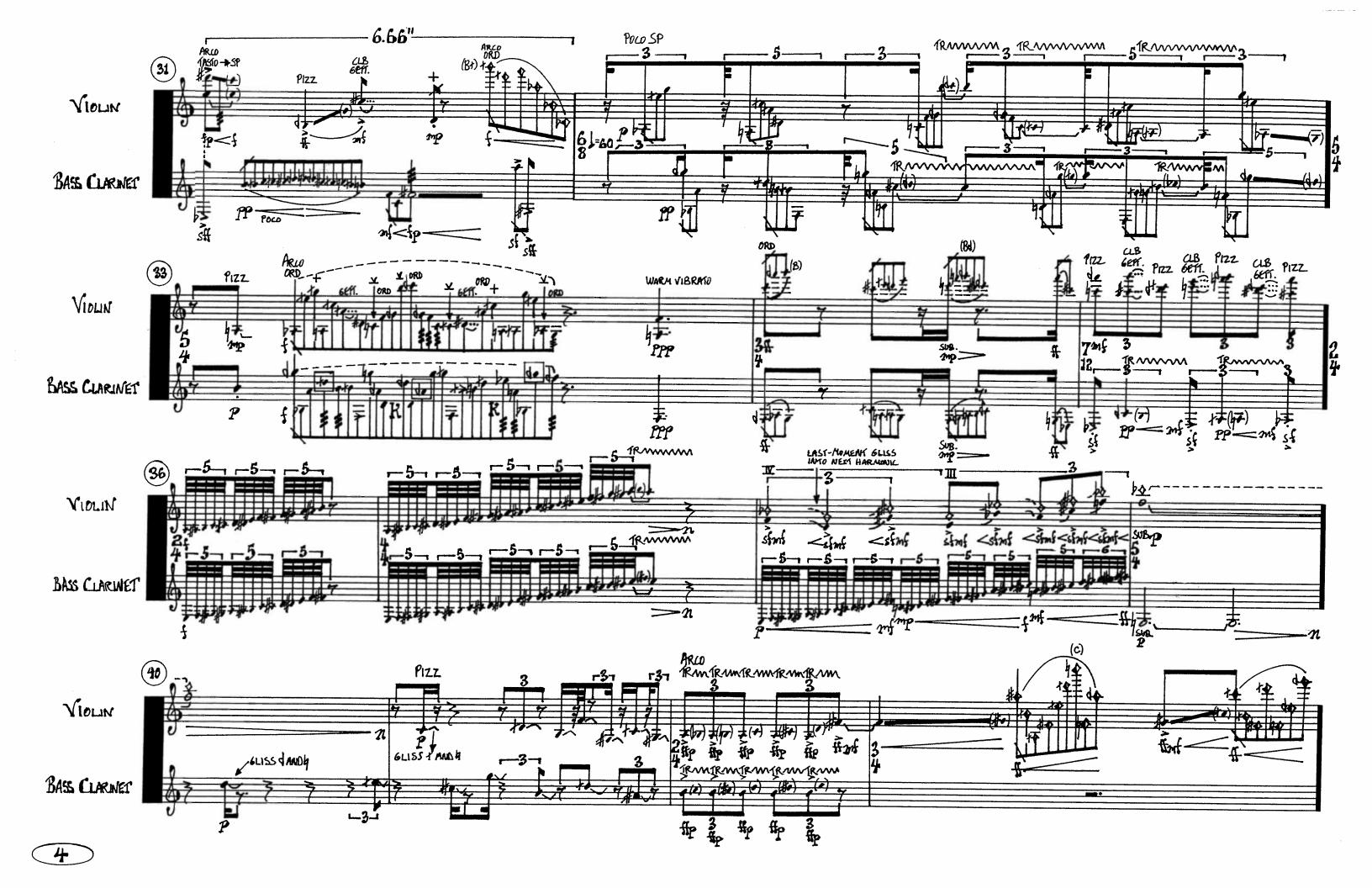
MULTIPHONIC, [A multiphonic with given pitch as the dominating tone.

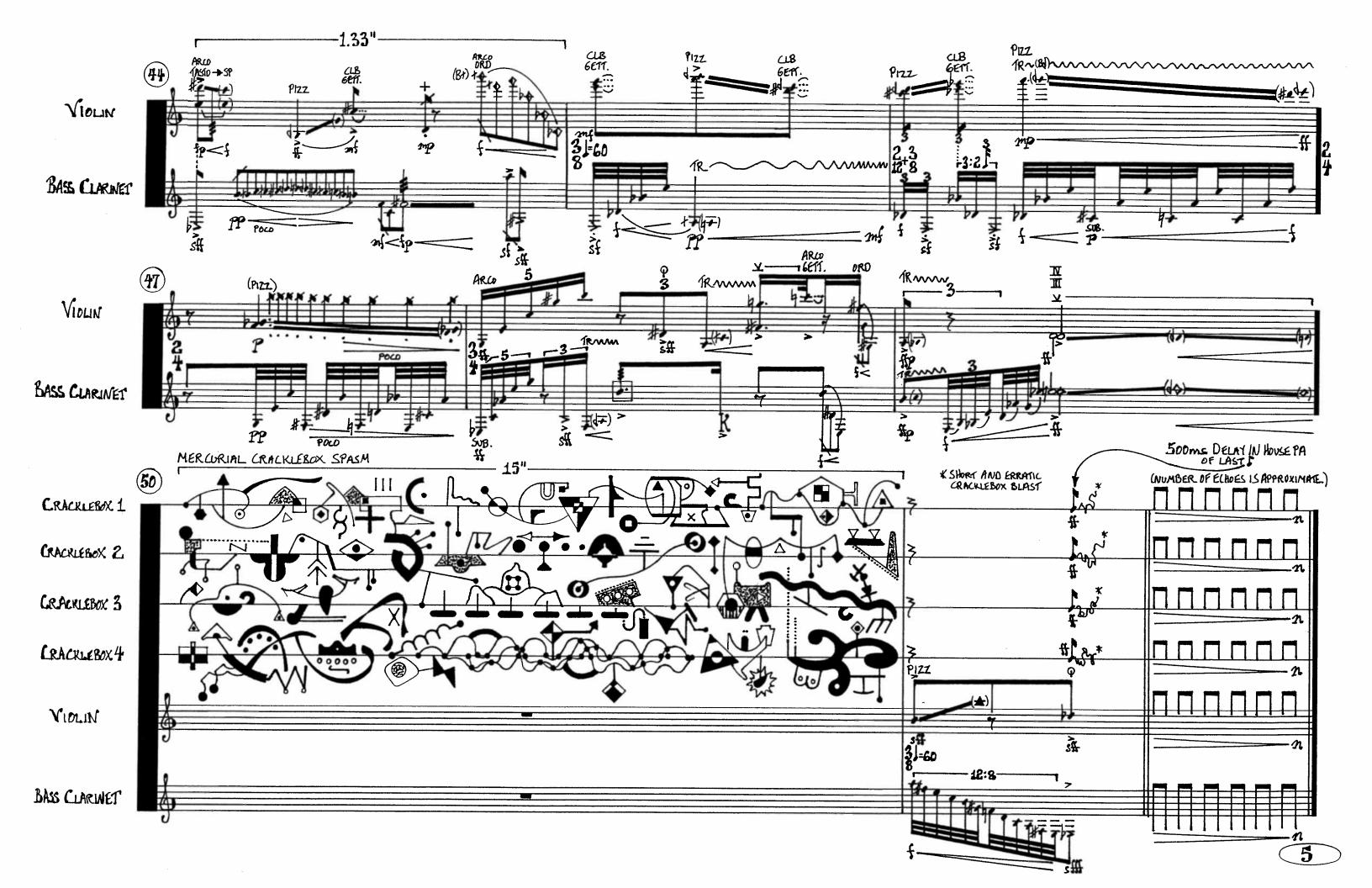
Sung/hummed note in any octave transposition.

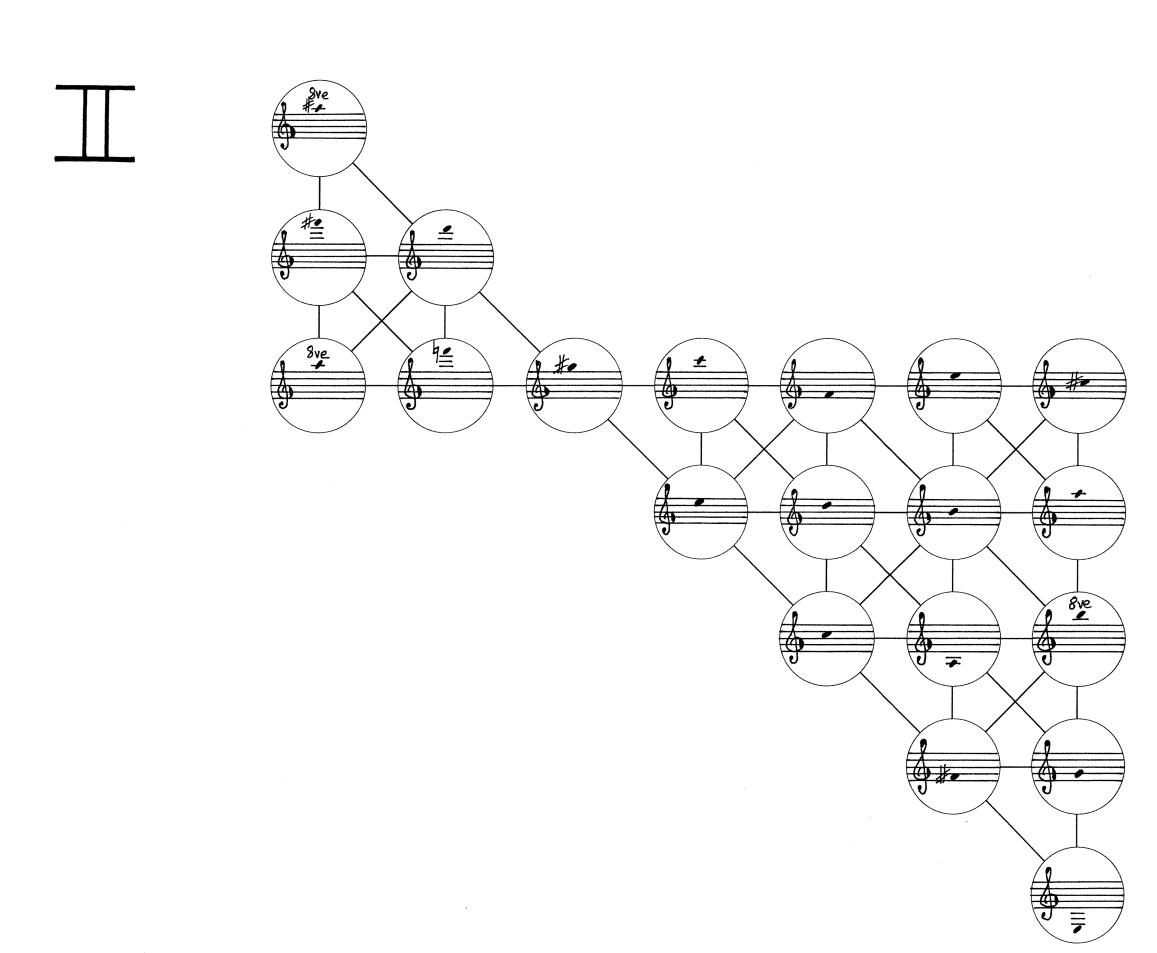




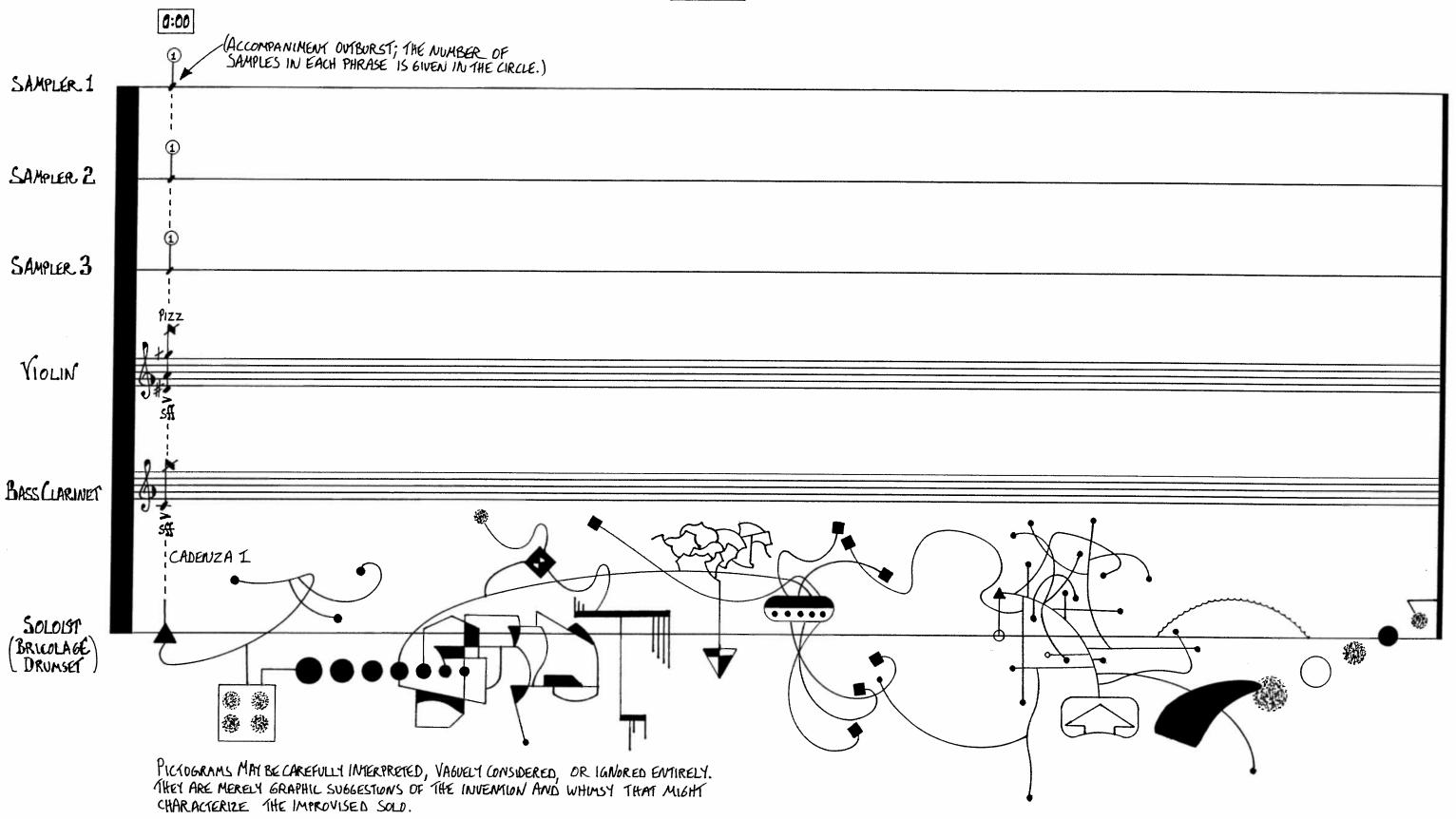


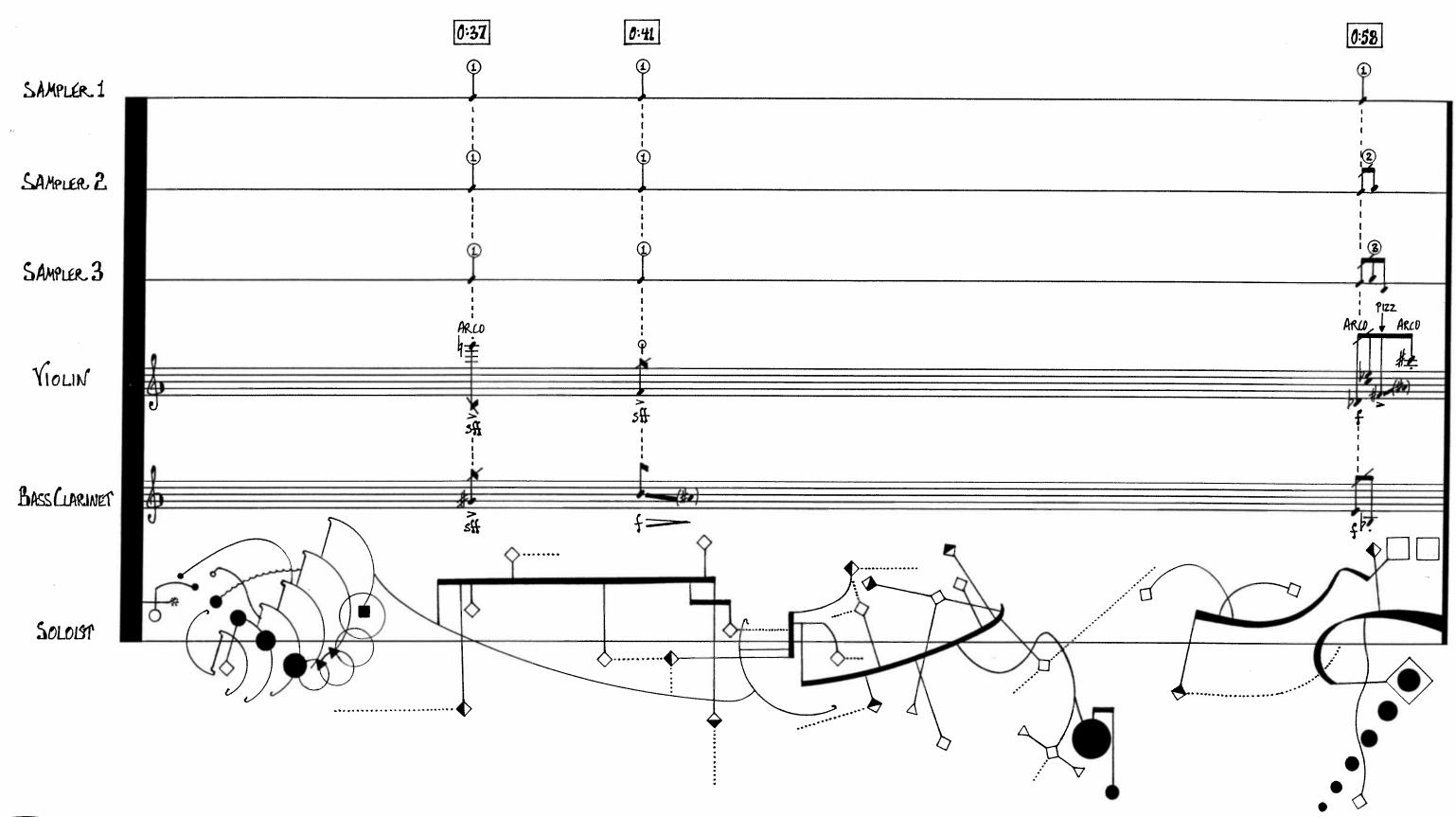


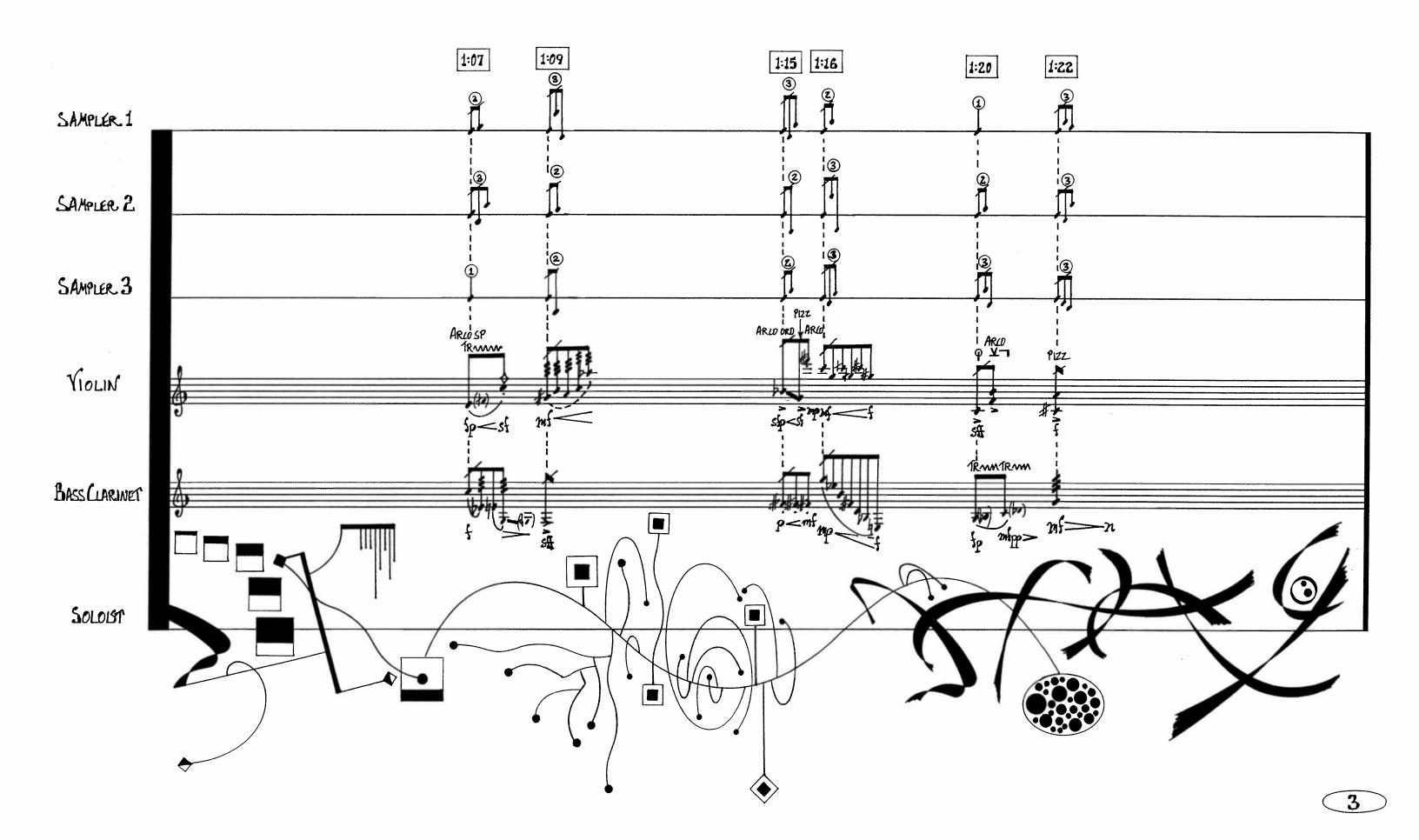


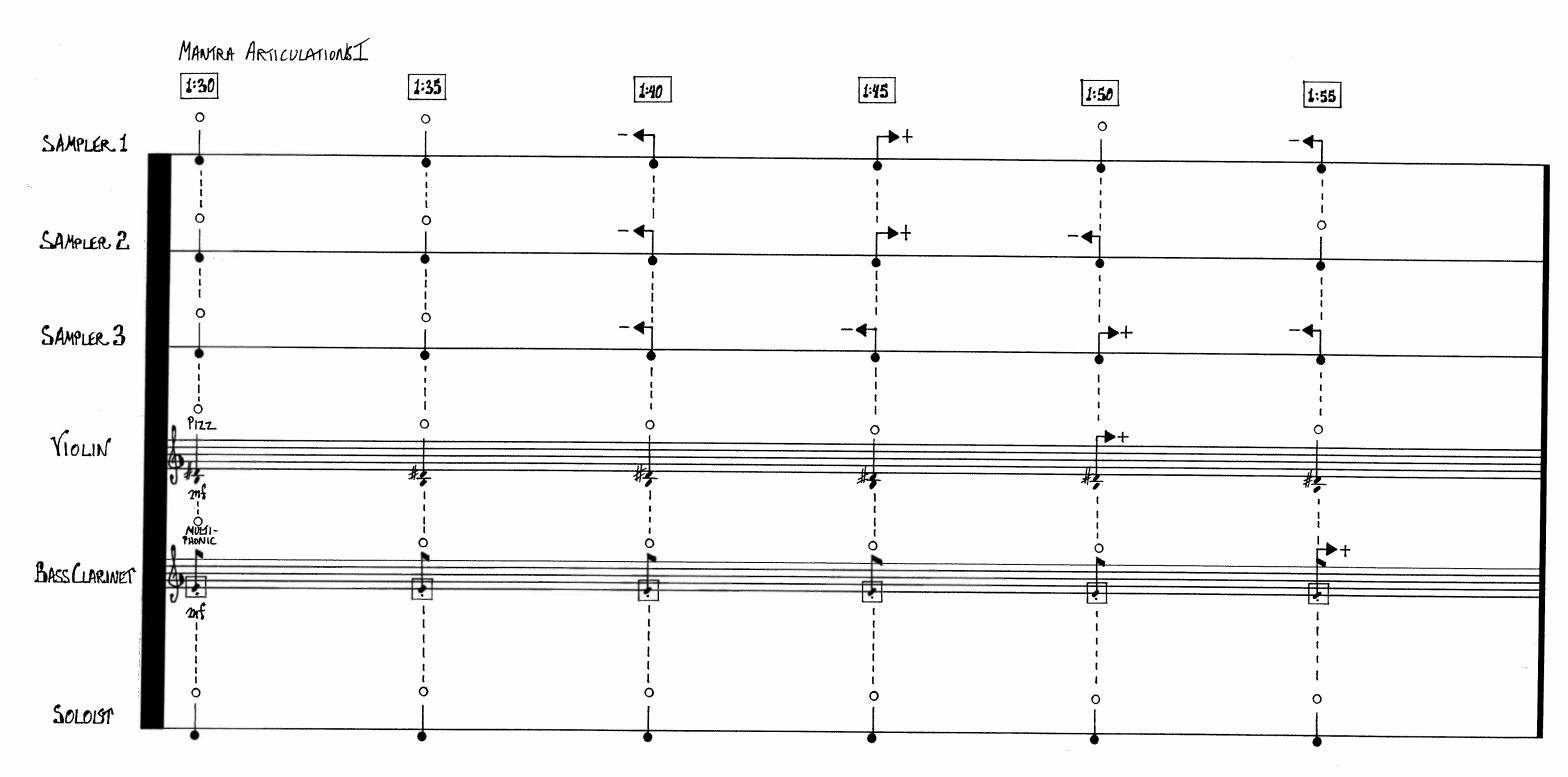






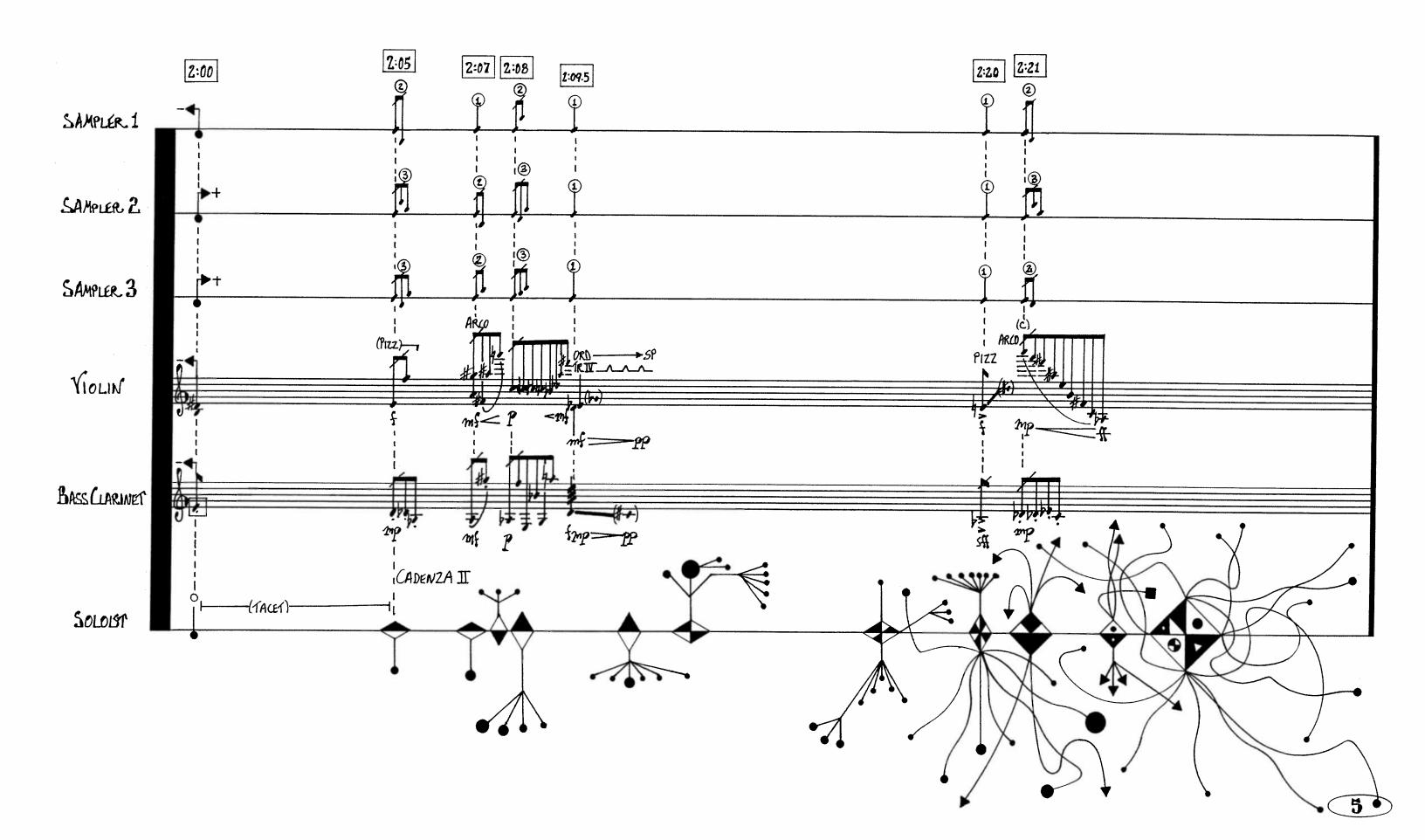


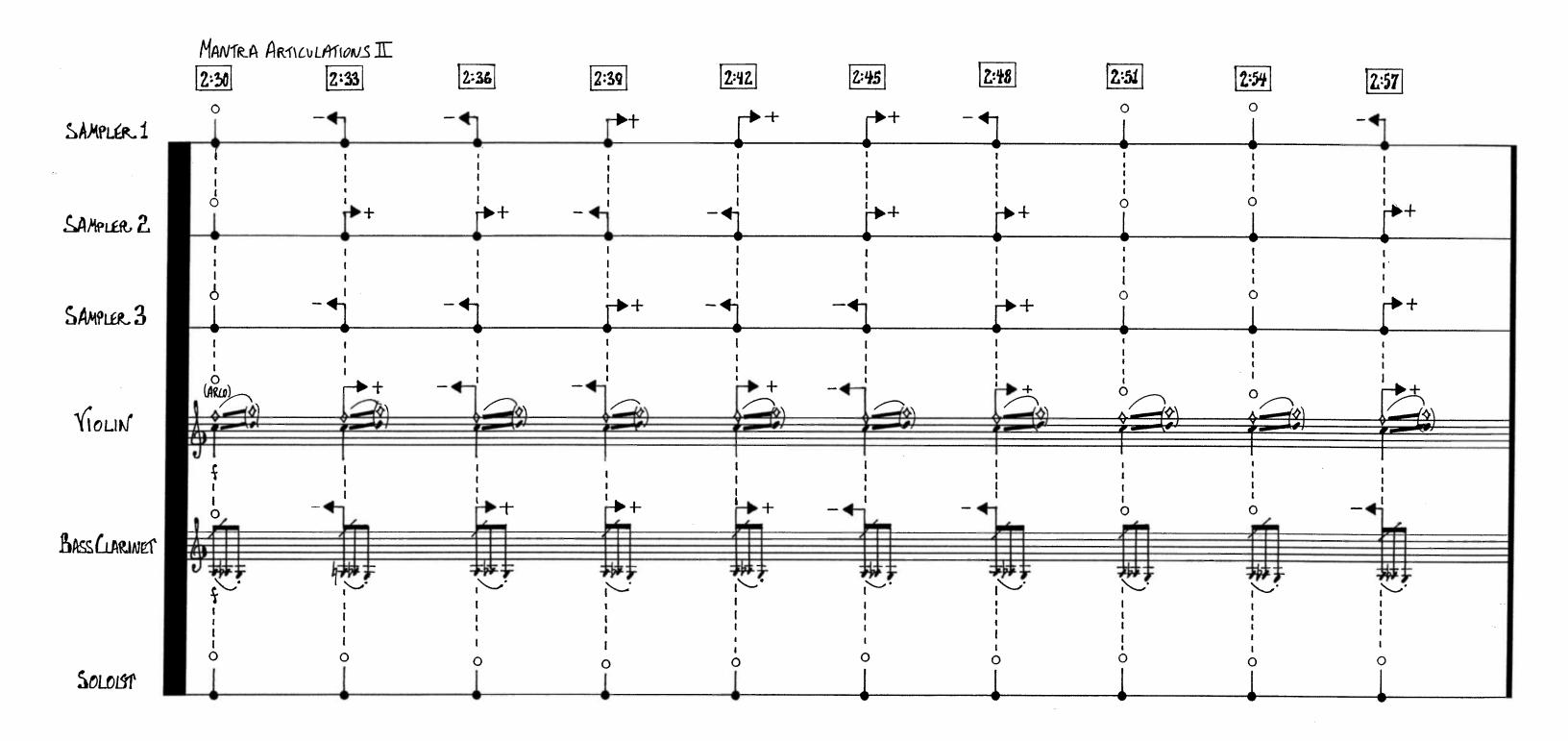


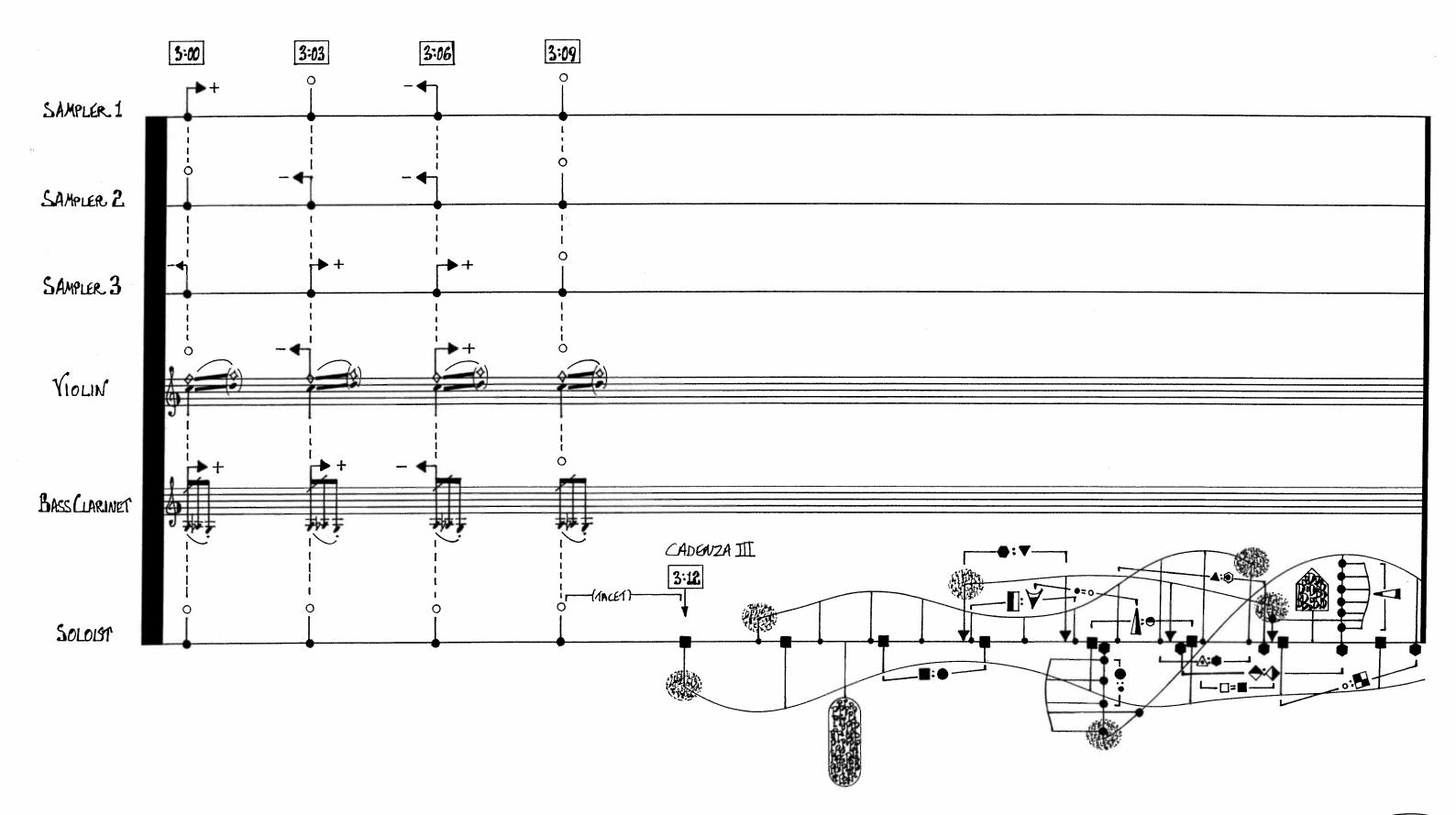


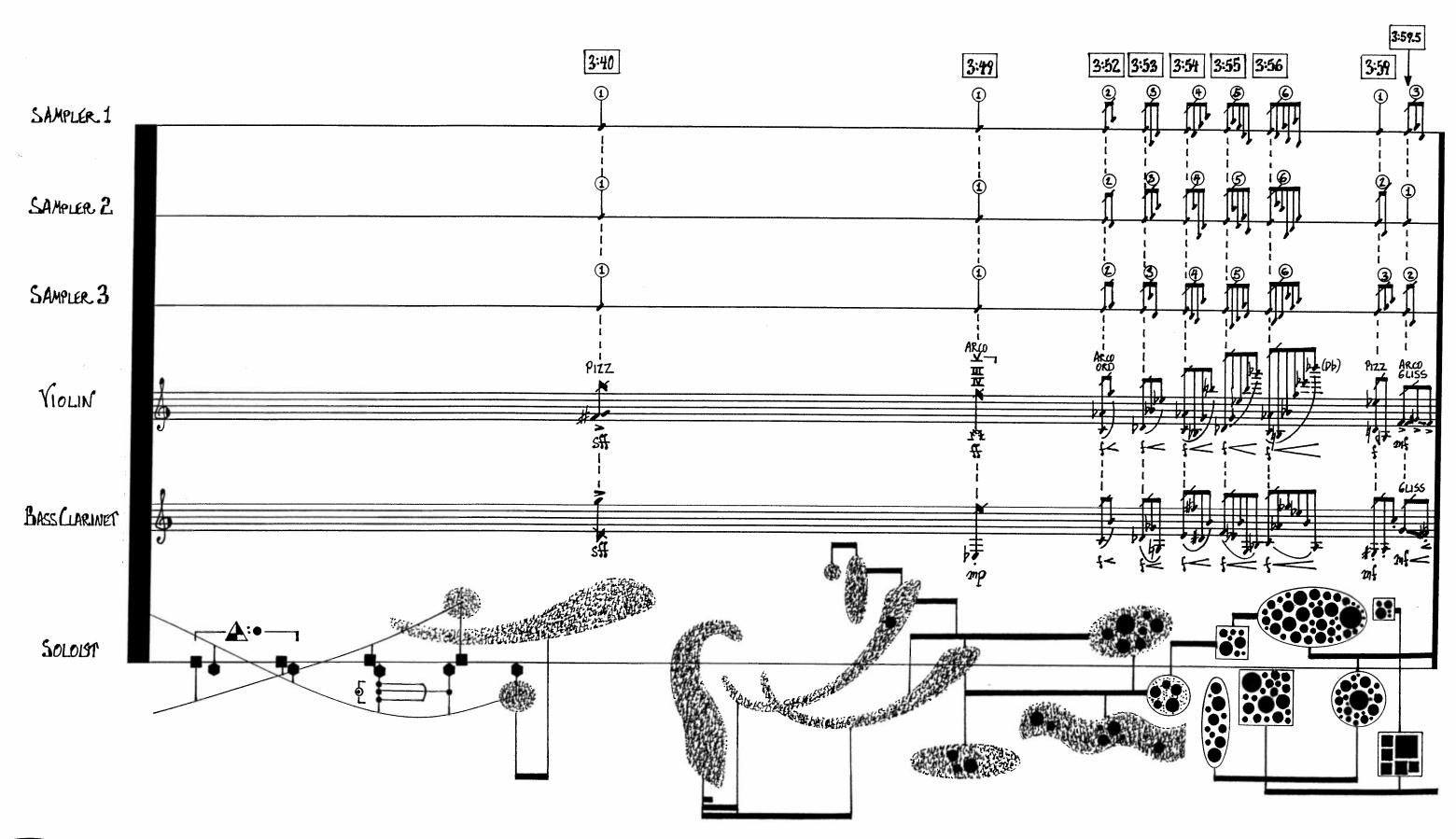
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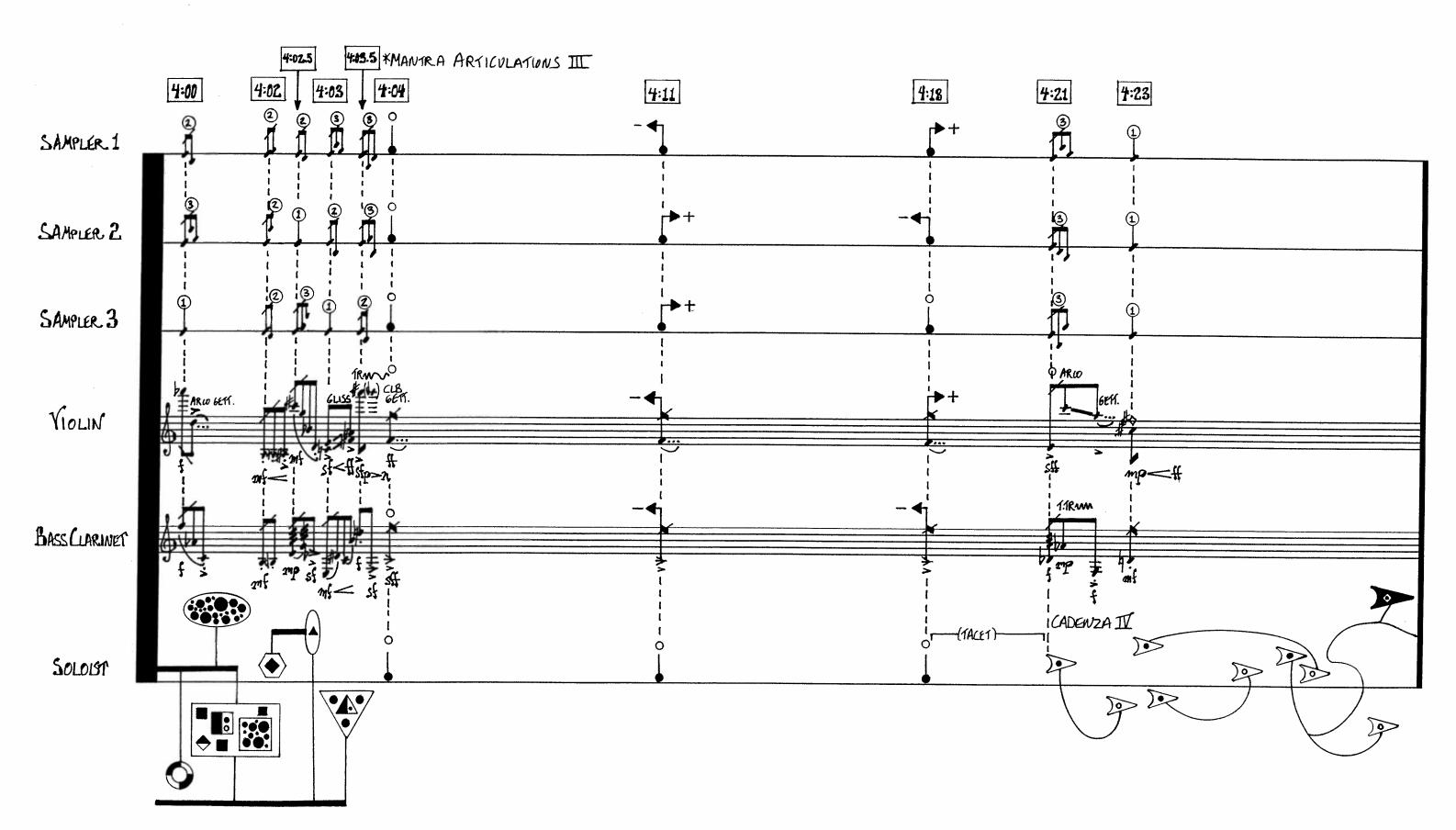
- O = ARTICULATION IS SOUNDED ON THE BEAT.
- -= ARTICULATION IS SOUNDED 400-1200 ms BEFORE THE BEAT.
- + = ARTICULATION IS SOUNDED 400-1200MS AFTER THE BEAT.











* NOTE: A BRIEF FERMATA MAY DCCUR BETWEEN 4:03.5 AND 4:04.

