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COMPOSITION PORTFOLIO

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This thesis is approved, and it is acceptable in quality
and form for publication:

Approved by the Thesis Committee:

Jose-Luis Hurtado Ruelas _____, Chairperson

David Bashwiner _____

Peter Gilbert _____

COMPOSITION PORTFOLIO

By

JOSE EDUARDO OREA DOMINGUEZ

BACHELOR OF MUSIC

UNIVERSITY OF NEW MEXICO

DECEMBER 2019

THESIS

Submitted in Partial Fulfillment of the
Requirements for the Degree of

Master of Music

Music

The University of New Mexico

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I heartily acknowledge Dr. Jose-Luis Hurtado Ruelas, my advisor and thesis chair, for continuing to encourage me through the years of classroom teachings and the long number of months writing and rewriting compositions. His guidance and professional style will remain with me as I continue my career.

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To my parents, Hilario Orea Sanchez and Maria Isabel Dominguez Gomez, who gave me immeasurable support over the years. Your constant encouragement and love are the greatest gifts of all.

COMPOSITION PORTFOLIO

By

JOSE EDUARDO OREA DOMINGUEZ

B.M., Music, The University of New Mexico, 2019.

M.Mu., Music, The University of New Mexico, 2022.

ABSTRACT

This composition portfolio consists of a series of works written during my master's degree at the University of New Mexico. Each chapter in this collection includes a brief structural and aesthetic description as well as specific annotations regarding its instrumentation, writing style/system, and pitch collection (if existent). The compositions featured in this portfolio are: *Orbits (Interstellar Cloud 1, 2021)* for amplified large ensemble, *Centaurus (2021)* for amplified variable ensemble from 2 to 8 performers, *Prisma (2020)* for amplified modified *Pierrot* quintet, *Sirius (2022)* for amplified vocal ensemble, *Wormhole (2021)* for amplified solo violin, *Space-Time Burst (2021)* for amplified solo trombone and live electronics, and *Nebula (Cloud 2, 2020)* for four amplified bowed string instruments in any configuration + optional video projection.

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CHAPTER 1- Work for Orchestra or Chamber Orchestra

Orbits (Interstellar Cloud 1, 2021) - For Amplified Mixed Large Ensemble and 2 Female Voices.

Instrumentation: 2 female voices, piccolo, 2 Bb bass clarinets, bassoon, trombone, tuba, piano, percussion-1 (glockenspiel + timpani), percussion-2 (chimes + suspended cymbals), violin, viola, and double bass.

Orbits incorporates elements from previous pieces both technically and structurally. This work is the first part of a much larger structural design whose purpose is to help develop Parametric Counterpoint¹² as a practical approach. From the simultaneity of events taken from Wormhole to the sound output generated by the multi-channel amplification notion of Pris-Ma³, this composition integrates all elements and arguments in a much larger single structure.

Orbits adds a layer of complexity to the music by combining three different temporalities in a single space. Structural temporality rules the form of the piece as a unity. Proportional and “individual” temporality work together in favor of single-event correlations both at the small and large scale.⁴ On the one hand, proportional temporality is defined as the relative duration of musical gestures marked by a written length and a specific size of such gesture in relationship to contiguous sonic fragments. On the other hand, “individual” temporality is the personal sense of tempo proper to each performer, ruled by the interaction

¹ Derived from conversations with Dr. Jose-Luis Hurtado, who originally conceived this idea.

² Research project in process.

³ Further explored in following chapters.

⁴ Refer to page four (first page of the performance notes) of the score to observe instructions regarding temporality.

between given rhythmic and temporal segments.⁵ Moreover, the different interactions among instruments and their technical configurations raise questions on how to expand my idiolect for this kind of spatial and temporal thought.

In terms of writing style, *Orbits* combines certain aspects of traditional notation and graphic elements that determine specific textural ideas and motivic relationships. Silence has been included in this score by means of proportionally controlled length-based blank spaces. Despite the organized nature silences possess within the compositional structure, the temporality each performer allocates to a determined section of the piece, which fluctuates between 30-180 BPM,⁶ will also affect the relative length he/she assigns to silences by means of perceptual space in between relatively contiguous sounding gestures. Also, the proportional length of elements with a written approximate duration, will affect the already variable tempo of each performer. Overall, the piece aims to create a flexible spatial-temporal relation among trajectories for both the performers and the audience.

In terms of pitch (p) and pitch-class (pc) content, *Orbit's* first version (*Interstellar Cloud 1*) comprises a series of independent but intertwined constructions (see **Figure 1**). Each one of the indicated “spheres” (colored in the diagram), represents a specific set-class with a defined length marked by the orbital amplitude of the diagram, and a sequential relationship with other spheres (dotted lines). For example, the black sphere in the center of the diagram is defined as “singularity” and represents absolute silence. The first sphere (light blue) is ruled by a [5,6,8,9, e,1,2] normal form or (0134689) heptachord and a short length in relationship to the overall framework. The following orbit (red) is a subset of

⁵ Refer to page four (first page of the performance notes) of the score to observe instructions regarding temporality.

⁶ According to stipulated instructions in the piece's Performance Notes.

the first sphere (037) plus an added pc-t, which gives the second segment its specific identity, and giving a (0158) prime form for the tetrachord. The third orbit, which has a [e, 1, 5] natural form and a (026) prime form, takes two members of the first sphere (pc-e and pc-1), and adds pc-e as a defining identity member. In a similar fashion, the following orbits are either a transformation of the original set-class, or a subset of the primary set-class plus an identity pc as it occurred in the examples described above. This first version of the piece stops in the orbit number seven (brown colored sphere), which demarks the climactic section of the overall framework, and which is ruled only by pc-6. Nonetheless, the last section of the score revolves around pc-9, which is the identity pc for the last orbit (dark blue). This intentional “ending” works to reflect the inconclusive environment of the piece as it is built so far.

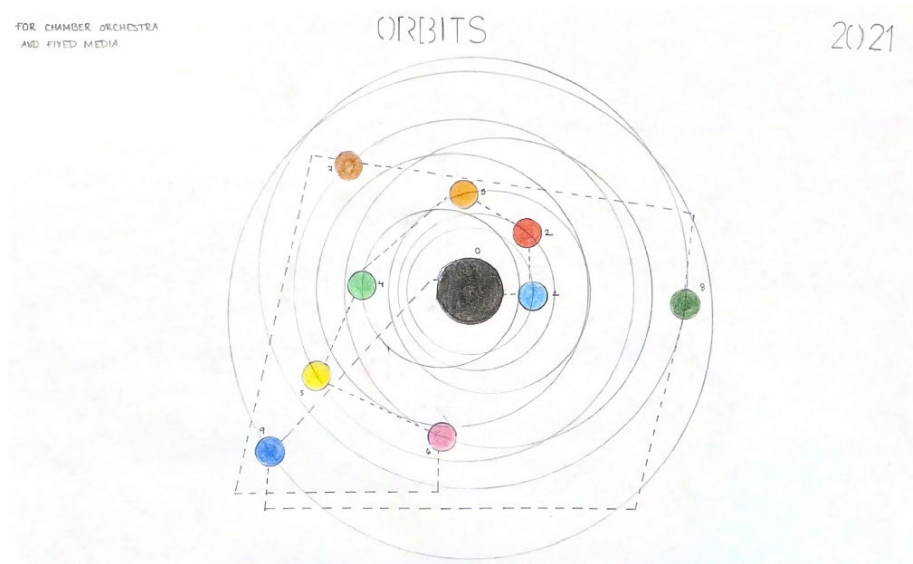


Figure 1- Orbit's structural diagram.

ORBITS

(Interstellar Cloud -1)

For Amplified Mixed Large Ensemble and 2 Female Voices
(17' approx.)

Eduardo Orea

2021

INSTRUMENTATION

2 Female Voices

Piccolo Flute

2 Bass Clarinets in Bb

Bassoon

Trombone

Tuba in C

Piano

Percussion 1 (Glockenspiel and Timpani)

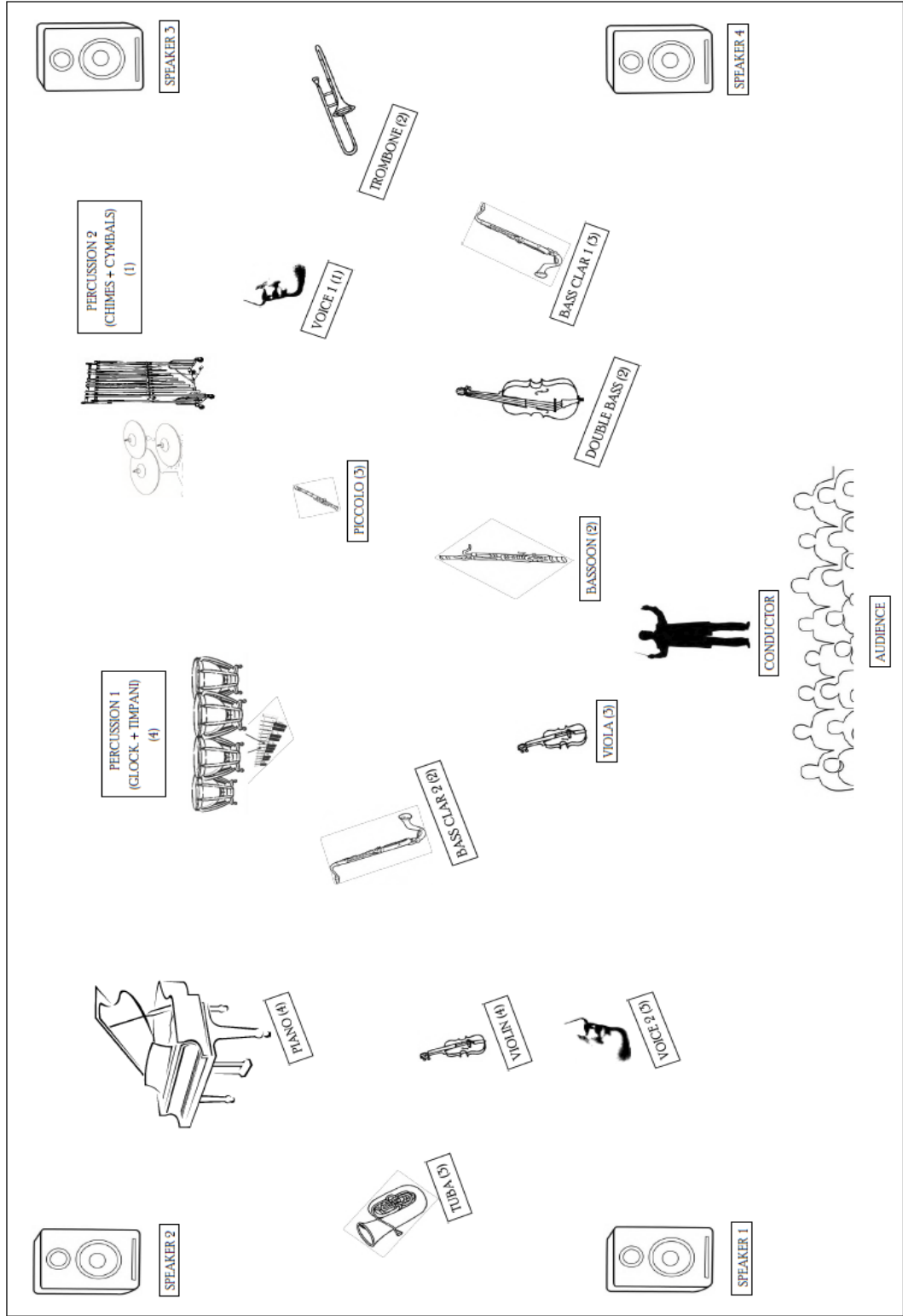
Percussion 2 (Chimes and Suspended Cymbals)

Violin

Viola

Double Bass

SETUP






PERFORMANCE NOTES



AMPLIFICATION

- As it is indicated on the SETUP page, there must be four (4) speakers located at the sides and back of the performing space in order to maximize the intended effects.
- All instruments must be individually amplified and connected to the specific speaker on the stage, as it is indicated in parentheses on the SETUP page, in order to create a multi-source sound feedback/ effect for each instrument of the ensemble.

ALIGNMENT


-  = Green dashed line cues indicate structural tempo changes (further explained below).
-  = Red dashed line cues indicate that two or more textures and/or gestures have exact alignment (i.e., their onset is the same).
-  = Dotted blue line cues indicate that two or more textures have inexact alignment (i.e., they are offset). These lines can also show that offset textures are played sequentially and are used as referential markings.

TEMPO






- The pace for each section is determined by three different temporal vectors: structural temporality, individual temporality, and spatial temporality.
-  = For the structural temporality, general markings can be found in the upper side of the page, as well as overall verbal indications (apply to all instruments of the ensemble).
non smettere di accelerare
- For the individual temporality, a specific metric distribution and alignment (further explained below) has been purposefully written for each instrument of the ensemble.
-  "ca." = For the spatial distribution, gestures with a relative length have been built. The value of each pitch, texture and/or effect within the indicated gesture is relative to the space and distribution it occupies inside the determined proportion ("chunk") of music.

PERFORMANCE NOTES-II



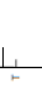

SILENCE

-  = Unless specifically indicated (i.e., eight-note silence), blank spaces indicate silence.
- The length of each silence depends on the proportional size of the segment in relationship to its contiguous sonic fragments in terms of size and structural and/or individual temporality, depending on the case.

PITCH






-  = Sections with indicated fixed pitch must be played as written.
-  = For sections without indicated fixed pitch, the performer must choose a register and intervallic content for the gesture according to its positioning in relationship to the line (center).
-  = Bracket with middle line and/or single line indicates approximate center/middle register/range of the instruments (Cymbals are the only exception as they use three lines).
-  Chromatic succession is not to be played.
-  Alternate (balance) between accidentals in any order (♯, ♭, ♮).

DYNAMICS








-  = General changes and dynamic motions are mostly written with traditional verbal indications including *crescendos* and *diminuendos*.
-  = Strings have an extra staff above the regular line which indicates the position of the bow in the instrument.
 B = Bridge & T = Tasto (for reference).
-  = Change in transparencies indicates dynamic transformation; the darker/thicker shadowing, the stronger/louder; and the lighter/thinner shadowing, the "weaker"/softer.

PERFORMANCE NOTES TEXTURAL CHARTS




VOICES

-  = Indicates inhalation and exhalation.
-  = Indicates whisper- always making an "Oh!" sound with *molto bocca chiusa*.
-  = Indicates whistle- always making an "Oo!" sound with *molto bocca chiusa*.
-  = Indicates tongue clicking against teeth and upper cavity of the mouth.
-  = Indicates buzz- vibrate the teeth against each other while vocalizing the given pitch or the chosen intervallic content.







WOODWINDS

-  = Indicates inhalation and exhalation (through the instrument).
-  = Indicates regular pitch (reference). "Laissez vibrer" indicates prolongation of the gesture.
-  = Indicates slap tongue.
-  = Indicates key clicking.
-  = Indicates flutter tongue.
-  = When combined with this gesture, it indicates added glissando.
-  = Beam-crossing lines indicate tremolo. The more lines, the faster the tremolo, and the fewer lines, the slower the tremolo.











WOODWINDS (cont.)

-  = Indicates half-pressed keys.
-  = Indicates "multiphonic" - overblow the given pitch and extract the largest possible number of partials relative to that note.
-  = Beam-crossing lines indicate tremolo. The more lines, the faster the tremolo, and the fewer lines, the slower the tremolo.

BRASS

-  = Indicates inhalation and exhalation (through the instrument).
-  = Indicates regular pitch (reference). "Laissez vibrer" indicates prolongation of the gesture (applies to all textures).
-  = Indicates half-pressed valves.
-  = Beam-crossing lines indicate tremolo. The more lines, the faster the tremolo, and the fewer lines, the slower the tremolo.
-  = Indicates multiphonic- lower voice must be played and upper voice must be sung.
-  = When combined with this gesture, it indicates added glissando.
- Use of *sordina* (mute) is marked with verbal instructions.


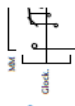
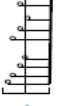



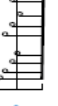


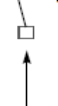

PIANO

-  = Indicates regular pitch (reference). "Laissez vibrer" indicates prolongation of the gesture (applies to all textures).
-  = Indicates use of the keyboard with no assigned fixed pitch.
-  = Indicates pitch cluster.
-  = Indicates soft mallets on the piano strings (hit).
-  = Beam-crossing lines indicate tremolo. The more lines, the faster the tremolo, and the fewer lines, the slower the tremolo.
-  = Indicates "brushing" - use brush mallets on the piano strings.
-  = When combined with this gesture, it indicates added glissando.
-  = Beam-crossing lines indicate tremolo. The more lines, the faster the tremolo, and the fewer lines, the slower the tremolo.
-  = Indicates "blocking" - block strings with one hand and play in the keyboard with the other.
-  = Indicates "plucking" - pluck strings with the fingernails or the tip of the fingers.
- Use of pedals is marked with verbal instructions.

PERCUSSION


- SPECIFICS OF THE PERCUSSION SIZE AND DISTRIBUTION:
- Percussion 1: Glockenspiel + Timpani (25-26-29-32 in.).
- Timpani must always have a metallic element at the center of each drum (i.e., small crash cymbal).

PERCUSSION (cont.)


- Percussion 2: Chimes (tubular bells) + suspended cymbals (14-18-22 in).
- Use of pedal for chimes is marked with verbal indications.
- TEXTURAL CHART:
 -  = Indicates regular pitch (reference). "Laissez vibrer" indicates prolongation of the gesture (applies to all textures).
 -  = Acronyms indicate use of mallets on the keyboard/bells/drums (verbal instruction for ALL PERCUSSION).
 HM= Hard Mallets // SM= Soft Mallets // MM=Metallic Mallets // WM= Wood Mallets.
 -  = Indicates use of the keyboard/bells with no assigned fixed pitch (CLOCKENSPIEL AND CHIMES).
 -  = Indicates use of bow (GLOCK AND CHIMES)- bowing technique is *molto col legno*.
 -  = Indicates use of bow (CYMBALS)- bowing technique is *molto col legno*.
 -  = Beam-crossing lines indicate tremolo. The more lines, the faster the tremolo, and the fewer lines, the slower the tremolo.
 -  = Indicates use of the drums with no assigned fixed pitch (TIMPANI).
 -  = Indicates to play close to the rim (TIMPANI).
 -  = Beam-crossing lines indicate tremolo. The more lines, the faster the tremolo, and the fewer lines, the slower the tremolo.
 -  = When combined with this gesture, it indicates added glissando.
 -  = When combined with this symbol, it indicates added buzz.


STRINGS

- SPECIFICS ABOUT BOWING AND DYNAMICS:
- ALL bowing techniques with exception of those involving percussive hits on the instruments' bodies must be *MOLTO COL LEGNO*.
- ALL bowing techniques for long gestures is *MOLTO COL LEGNO TRATTO*, and all bowing techniques for short articulations is *MOLTO COL LEGNO BATTUTO*.
- ● — = Indicates regular bowing
- □ — = Indicates "muted strings" - Press the indicated pitch and slightly place a finger/palm on the remaining strings.
- The extra staff above the regular line indicates the position of the bow in the instrument.



B = Bridge & T = Tasto (for reference).
- Change in transparencies indicates dynamic transformation; the darker/thicker shadowing, the stronger/louder; and the lighter / thinner shadowing the "weaker" softer.


- Dynamic indication for short articulations. Changes in size and transparencies indicate dynamic motion and transformation.


- Dynamics for wood-hits and pizzicatos are marked with verbal indication.
- Dynamics for noise and crash effects are marked by transparency and/or waving transformation depending on the specific case (described below).
- - - - - = Black dashed line indicates alignment between bowing technique and articulation (present only at the beginning of the gesture).

STRINGS (cont. I)

- TEXTURES:

-  = Indicates regular pitch (reference). "Laissez vibrer" indicates prolongation of the gesture (applies to all textures).

-  = Indicates "natural harmonic" - Play the given pitch but only by applying slight pressure on the corresponding string so it does not make contact with the fingerboard.


-  = Beam-crossing lines indicate tremolo. The more lines the faster the tremolo, and the lesser lines, the slower the tremolo.

-  = When combined with this gesture, it indicates added glissando.

-  = Indicates "burst" - Apply the "natural harmonic" technique plus an accent in addition to a short rebound bowing technique.

-  = Indicates "artificial harmonic" - Play the given pitch and apply slight pressure on the pitch defined with a diamond notehead to create the written harmonic effect.

-  = Beam-crossing lines indicate tremolo. The more lines the faster the tremolo, and the lesser lines, the slower the tremolo.

-  = When combined with this gesture, it indicates added glissando.


- Pizz  = Indicates Right Hand Pizzicato (Pizz) - place your left hand on the given pitch and pluck the corresponding string with the right hand.


-  = Indicates Left Hand Pizzicato - play the given pitch by plucking the corresponding string in the pitch position with the left hand only.

-  = Indicates "noise effect" - Play an indefinite pitch behind the bridge following the trajectory indicated by both the dynamic transparency and bracket-register delimiter (as reference for use of the different strings).

-  = Beam-crossing lines indicate tremolo. The more lines the faster the tremolo, and the fewer lines, the slower the tremolo.

STRINGS (cont. II)

•  = Indicates "crash effect" - Slowly move the brushing part of the bow against the wood of the instrument to create a noisy-crashing effect. The change in waving motion determines the strength of the texture. Despite the "roughness" of the gesture, it is not intended to damage the instrument by any means, and any practice that compromises the integrity of the device must be avoided.

•  = Indicates "wood-hit" - With index, middle, and ring finger gently hit the wood parts of the instrument. It is important to find three or four different regions in order to develop a relative intervallic movement that allows the proper development of the gesture.

 = Beam-crossing lines indicate tremolo. The more lines the faster the tremolo, and the fewer lines, the slower the tremolo.

This page of a musical score contains the following elements:

- Top Staff:** A large staff system with a bracket above it labeled "11' ca.". It includes a vocal line labeled "Voice 1 & 2" and a dynamic marking of *pp*.
- Second Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pppp*.
- Third Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Fourth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Fifth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Sixth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Seventh Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Eighth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Ninth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Tenth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Eleventh Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twelfth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirteenth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Fourteenth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Fifteenth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Sixteenth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Seventeenth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Eighteenth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Nineteenth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twentieth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twenty-first Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twenty-second Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twenty-third Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twenty-fourth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twenty-fifth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twenty-sixth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twenty-seventh Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twenty-eighth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Twenty-ninth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirtieth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirty-first Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirty-second Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirty-third Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirty-fourth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirty-fifth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirty-sixth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirty-seventh Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirty-eighth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Thirty-ninth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Fortieth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Forty-first Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Forty-second Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Forty-third Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Forty-fourth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Forty-fifth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Forty-sixth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Forty-seventh Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Forty-eighth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Forty-ninth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.
- Fiftieth Staff:** A staff for Trombones (Tbn.) with a dynamic marking of *pp*.

This musical score page features a voice part and an orchestral arrangement. The voice part is written on a single staff with a treble clef and a 2/4 time signature, starting with a *pp* dynamic. The orchestral score includes:

- Chimes:** A section marked *Sens. 25h. pp* with a 2-measure duration.
- Drum Set:** A section marked *Sens. 25h. ppp* with a 2-measure duration, including parts for *Ext. Dry*, *Proc.*, and *Utra conds.*
- Timpani (Tbn.):** Two sections, each marked *5" ca.*, with dynamic markings *pppp* and *ppp*.
- Maracas (M.M.):** A section marked *7" ca.* with a *pppp* dynamic.
- Violins (Vln.):** A section with a *pppp* dynamic.
- Voices:** A section for Soprano (S), Tenor (T), and Bass (B) with a *pp* dynamic.

The score is annotated with various musical notations, including slurs, brackets, and dynamic markings. A blue line connects the voice part to the Maracas section, and red dashed lines connect the Timpani and Chimes sections to the vocal line.

molto accel

4

Voice 1+2

5' ca.

R.C. 1+2

Ban.

The code

Pho.

Sens' Bb

MM

Temp.

4' ca.

3' ca.

Clock

The code

Pho.

3' ca.

Clock

pppp

B

T

Vic.

B

T

Db.

$\text{♩} = 120$

The score consists of several staves with dynamic markings and performance instructions:

- Fl. (Flute):** *Rel. solo* (Relative solo), *Flacc.* (Flaccid), *3" ca.* (approximately 3 inches).
- Brn. (Trumpet):** *3" ca.* (approximately 3 inches).
- Prco. (Percussion):** *5" ca.* (approximately 5 inches).
- Tr. (Trombone):** *2" ca.* (approximately 2 inches).
- Cl. (Clarinet):** *3" ca.* (approximately 3 inches).
- Ob. (Oboe):** *3" ca.* (approximately 3 inches).
- Str. (Strings):** *3" ca.* (approximately 3 inches).

Other markings include *MM* (Moderato), *clock.* (clockwise), and *Time* (Time signature).

rallentando poco a poco . . .

$\text{♩} = 60$

6

Lentissimo

poco rall . . .

8 Cl.
1+2
pp

5' ca.
5' ca.
pp

9' ca.
pp

9' ca.
pp

9' ca.
pp

7' ca.
pp

pp

P

P

P

P

P

P

pp

P

P

P

P

P

P

Musical score for page 10, featuring a tempo of $\text{♩} = 30$. The score includes the following parts and markings:

- Voice 1+2:** *pppp* (pianissimo)
- Piano:** *ppp* (pianissimo), *pppp* (pianissimo)
- Flute (Fl.):** *ppp* (pianissimo)
- Oboe (Ob.):** *ppp* (pianissimo)
- Clarinet (Cl.):** *ppp* (pianissimo)
- Bassoon (Fg.):** *ppp* (pianissimo)
- Trumpet (Tr.):** *ppp* (pianissimo)
- Timpani (Timp.):** *pppp* (pianissimo)
- Violin (Vln.):** *ppp* (pianissimo)
- Viola (Vla.):** *ppp* (pianissimo)

Section lengths are indicated as 3" ca. and 7" ca. The score is marked with various dynamic levels including *ppp*, *pppp*, and *pp*.

$\text{♩} = 120$

The score is divided into two systems. The first system includes:

- Perc.** (Percussion) with a $\text{♩} = 120$ tempo marking.
- B.C.I. 1** and **B.C.I. 2** (Bass Drum) parts.
- Ext. Mly** (Extended Mallets).
- 3" Ca.** (3-inch Cymbal) part.
- Drum** part with dynamic markings ff and mf .

The second system includes:

- Uta crsh.** (Uta crash) and **Piano** parts.
- 2" Ca.** (2-inch Cymbal) part.
- Chick.** (Chickadee) part.
- Ext. Dry Chimes** part.
- 3" Ca.** (3-inch Cymbal) part.
- MM** (Mallets) part.
- 3" Ca.** (3-inch Cymbal) part.
- Temp.** (Tom-toms) part.
- Cymbals** part.
- 3" Ca.** (3-inch Cymbal) part.
- 3" Ca.** (3-inch Cymbal) part.
- Ms.** (Mallets) part.
- 3" Ca.** (3-inch Cymbal) part.
- Dr.** (Drum) part.
- 3" Ca.** (3-inch Cymbal) part.

Dynamic markings include ff , mf , mm , and mf . A **Scen 20** marking is present at the end of the second system.

non smettere di accelerare

The image displays a musical score for a string quartet and woodwinds. The score is written on five staves: Violin I (Vn. I), Violin II (Vn. II), Viola (Vla.), Cello (Vcl.), and Double Bass (Vcb.). The woodwind parts for Flute (Fl.), Clarinet in C (Cl.), Bassoon (Fag.), and Trombone (Tbn.) are also present. The score includes various performance markings such as *ppc.*, *mf*, *ff*, *rit.*, and *accel. poco a poco...*. A blue dashed line connects the *ppc.* marking on the Violin I staff to the *non smettere di accelerare* instruction at the top of the page. A red dashed line connects the *mf* marking on the Cello staff to the *ff* marking on the Violin I staff. A green dashed line connects the *ff* marking on the Cello staff to the *non smettere di accelerare* instruction. The score is divided into measures by vertical bar lines, and some measures contain dynamic hairpins. The bottom of the page features a large black bar and the word *Piano*.

Almost breaking the sound at the end . . .

$\text{♩} = 180$

The musical score is arranged in a standard symphonic layout. At the top, the tempo is marked as $\text{♩} = 180$. The score begins with a Piccolo part, followed by Flute (Fl.), Clarinet (Cl.), and Bassoon (Bsn.). The woodwinds are followed by Trumpets (Tr.) and Trombones (Tbn.). The piano part is marked with a forte (*f*) dynamic. The percussion part is indicated by a vertical line. The string section includes Violins (Vn.), Violas (Va.), Cellos (Vcl.), and Double Basses (Cb.). The score is divided into measures, with a vertical dashed line indicating the end of the section. The music features complex rhythmic patterns, including sixteenth and thirty-second notes, and dynamic markings such as *f* and *sfz*.

J = 120

accesi poco a poco ...

Picc. *ff*

B.C.I. 1 2' ca. *ff*

B.C.I. 2 3' ca. *ff*

Basso *ff*

Tim. *ff*

accesi poco a poco ...

accesi poco a poco ...

accesi poco a poco ...

Tutti

Tim. *ff*

Chimes *ff*

Vis. 3' ca.

DB 3' ca.

$\text{♩} = 60$ subito

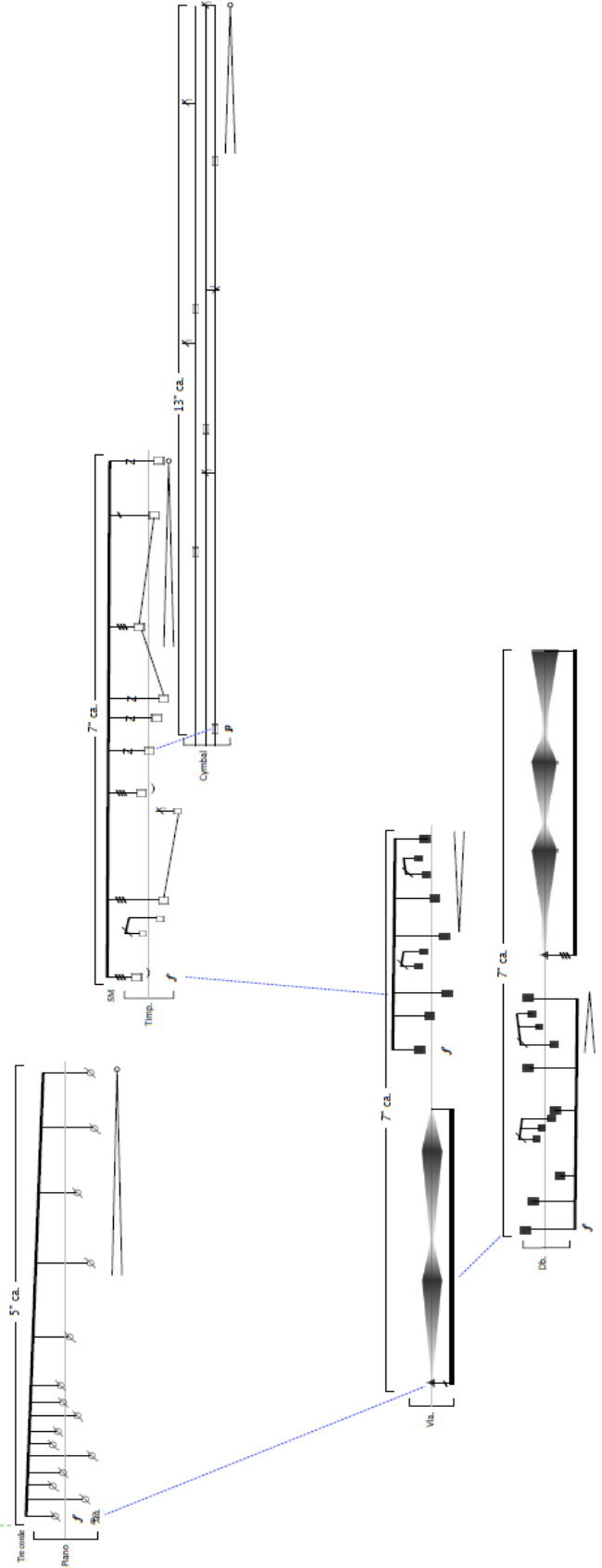
15

The musical score for page 15 consists of the following parts and markings:

- Voice:** Labeled "Voice 1+2", with a dynamic marking of *mf* and the instruction "molto tenuto".
- Perc.** (Percussion): Labeled "Perc.", with a dynamic marking of *mf* and the instruction "molto tenuto".
- Fl. & Oboe:** Labeled "Fl. & Oboe 1+2", with a dynamic marking of *mf* and the instruction "molto tenuto".
- Clarinet:** Labeled "Clarinet", with a dynamic marking of *mf* and the instruction "molto tenuto".
- Bassoon:** Labeled "Bassoon", with a dynamic marking of *mf* and the instruction "molto tenuto".
- Trumpet:** Labeled "Trb.", with a dynamic marking of *mf* and the instruction "molto tenuto".
- Trombone:** Labeled "Trb.", with a dynamic marking of *mf* and the instruction "molto tenuto".
- Drums:** Labeled "Drum", with a dynamic marking of *mf* and the instruction "molto tenuto".
- Chimes:** Labeled "Chimes", with a dynamic marking of *mf* and the instruction "molto tenuto".

Additional markings include a green dashed line from the tempo instruction to the start of the score, and blue dashed lines connecting the *mf* markings to the Perc., Clarinet, and Chimes staves.

Crollare



The image displays a musical score for a string ensemble. At the top left, a single staff is labeled "S.C. 1:2" and "pp". A blue line indicates a magnified section of this staff, which is shown in detail below. The magnified section consists of five staves, each with a bracketed duration: "11' ca.", "9' ca.", "7' ca.", "9' ca.", and "7' ca.". The first two staves are labeled "Vn." (Violin) and the last two are labeled "Vcl." (Viola). The bottom staff is labeled "Cb." (Cello). The notation includes various musical symbols such as notes, rests, and dynamic markings.

This musical score page features several staves with the following components:

- Top Staff:** Labeled "Voice 1 & 2" with a dynamic marking of *pp* and a duration of "7' ca.".
- Second Staff:** Labeled "Ban." (Banjo) with a dynamic marking of *pp*.
- Third Staff:** Labeled "Tbn." (Trumpet) with a dynamic marking of *pp*.
- Fourth Staff:** Labeled "Tm. outside" (Tom-tom) with a dynamic marking of *pp* and a duration of "5' ca.".
- Fifth Staff:** Labeled "Phc." (Percussion) with a dynamic marking of *pp*.
- Sixth Staff:** Labeled "Timp." (Timpani) with a dynamic marking of *pp* and a duration of "5' ca.".
- Seventh Staff:** Labeled "Chimes" with a dynamic marking of *pppp*.
- Bottom Staff:** Labeled "Vic." (Violin) with a dynamic marking of *p*.

Blue dashed lines connect the *pp* markings on the Banjo, Trumpet, and Tom-tom staves to the *pp* marking on the Percussion staff. A red dashed line connects the *pp* marking on the Percussion staff to the *pp* marking on the Timpani staff. A blue dashed line connects the *pppp* marking on the Chimes staff to the *p* marking on the Violin staff.

This page of a musical score includes the following elements:

- Voice 1+2:** A vocal line with a dynamic marking of *pp* and a duration of approximately 5 measures.
- Bin.:** A woodwind line with a dynamic marking of *pp*.
- Tru. wood:** A woodwind line with a dynamic marking of *p* and a duration of approximately 5 measures.
- Piano:** A piano line with a dynamic marking of *p*.
- Chimast:** A chime line with a dynamic marking of *p* and a duration of approximately 3 measures.
- Tha. wood:** A woodwind line with a dynamic marking of *pp* and a duration of approximately 13 measures.
- Chimast:** A chime line with a dynamic marking of *pp* and a duration of approximately 5 measures.
- Flu.:** A flute line with a dynamic marking of *pp* and a duration of approximately 7 measures.
- Viola:** A viola line with a dynamic marking of *pp* and a duration of approximately 7 measures.
- Dr.:** A drum line with a dynamic marking of *pp* and a duration of approximately 7 measures.
- Tha. wood:** A woodwind line with a dynamic marking of *pp* and a duration of approximately 9 measures.
- Proc.:** A percussion line with a dynamic marking of *pp* and a duration of approximately 5 measures.
- Co.:** A cymbal line with a dynamic marking of *pppp* and a duration of approximately 5 measures.

Blue dashed lines indicate cross-references between the main score and the detailed instrument parts.

$\text{♩} = 30$

$\text{♩} = 60$

Musical score for page 20, featuring staves for Voice 1, Percussion, Timpani, Snare Drum, Bass Drum, Cymbals, and Chinese. The score includes dynamic markings such as *pp*, *ppp*, and *poco rit.*. Performance instructions include durations like "5" ca.", "7" ca.", "11" ca.", and "13" ca.". The tempo is marked as $\text{♩} = 30$.

$\text{♩} = 60$

Voice 112
5' ca.

Picc.
3' ca.
ppp

R.C. 112
pp

Picc.
ppp

R.C. 112
pp

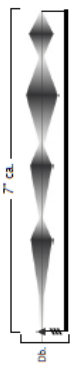
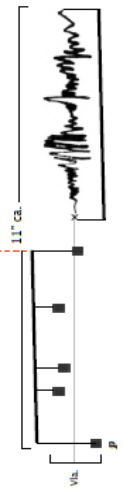
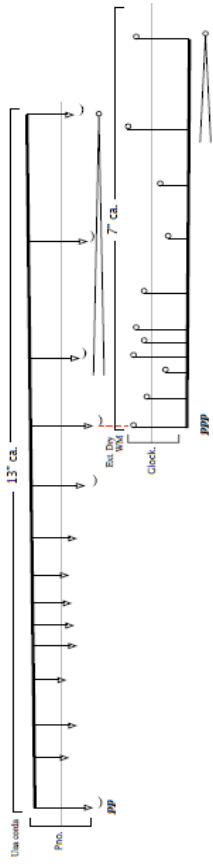
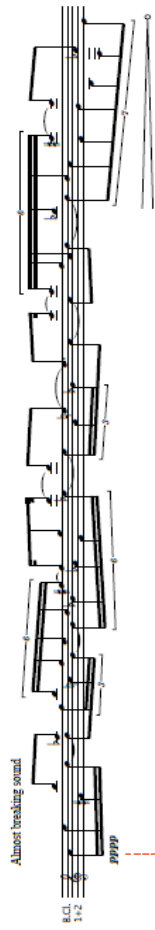
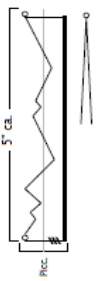
Picc.
ppp

Vn.
ppp

Tbn.
ppp

Vcl.
ppp

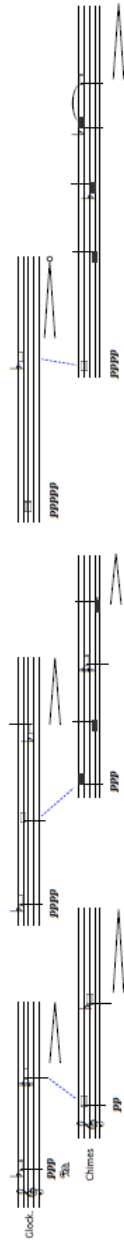
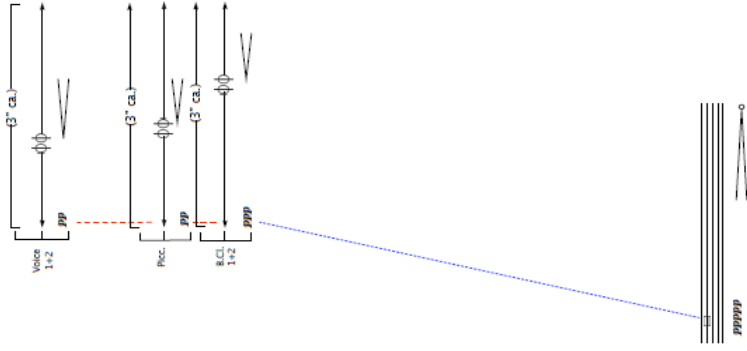
Db.
ppp



$\text{♩} = 30$

Musical score for page 24. The score includes parts for Flute (Fl.), Oboe (Ob.), Clarinet in B-flat (Cl. Bb.), Bassoon (Bsn.), and Violin (Vn.). The woodwinds play a melodic line with various articulations. The strings play a rhythmic accompaniment. A red dashed line connects the woodwind parts to the corresponding parts on page 39.

Musical score for page 39. The score includes parts for Flute (Fl.), Oboe (Ob.), Clarinet in B-flat (Cl. Bb.), Bassoon (Bsn.), Violin (Vn.), and Viola (Vla.). The woodwinds continue their melodic line. The strings play a rhythmic accompaniment. A red dashed line connects the woodwind parts to the corresponding parts on page 24.



$\text{♩} = 30$

Sn.
Tbn.
pppp

Picc.
Perc.
pppp

$\text{♩} = 60$

The musical score on page 27 consists of three systems of staves. The first system features a tenor staff (labeled 'Tenor') and a bass staff (labeled 'Bass'). A bracket above the tenor staff spans approximately seven measures, with the annotation '7" ca.' below it. The dynamics are marked as *pppp*. The second system continues with the tenor and bass staves, also marked *pppp*. The third system includes a tenor staff, a bass staff, and a chime staff (labeled 'Chimes'). A bracket above the tenor staff spans approximately eleven measures, with the annotation '11" ca.' below it. The dynamics for the tenor and bass parts are *pp*, and the chime part is marked *pp*. A blue dashed line connects the *pppp* dynamic marking in the first system to the *pp* dynamic marking in the third system.

Musical score for Voice 1/2. The staff shows a melodic line with a dynamic marking of *pp*. A bracket above the staff indicates a duration of approximately 5 seconds.

Musical score for 'Almost breaking sound'. The staff shows a melodic line with a dynamic marking of *pppp*. A bracket above the staff indicates a duration of approximately 5 seconds.

Musical score for a 5-second duration. The staff shows a melodic line with a dynamic marking of *pppp*. A bracket above the staff indicates a duration of approximately 5 seconds.

Musical score for Tuba. The staff shows a melodic line with a dynamic marking of *pp*. A bracket above the staff indicates a duration of approximately 5 seconds.

Musical score for Flute and Viola. The staff shows a melodic line with a dynamic marking of *pppp*. A bracket above the staff indicates a duration of approximately 5 seconds.

17' Ca.

18a

19a

20a

21a

22a

23a

24a

25a

26a

27a

28a

29a

30a

31a

32a

33a

34a

35a

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1346a

1347a

1348a

1349a

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1353

$\text{♩} = 60$

molto rit. . . .

Fl.
pppp

Cl.
ppppp

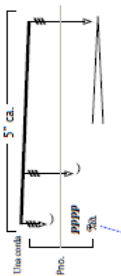
B.
ppppp

T.
ppppp

Tb.
ppppp

Tb.
pppppp

Tb.
pppppp



$\text{♩} = 120$ *subito*

Musical score for page 52. The score includes the following parts and markings:

- Piano:** Starts with $\text{♩} = 120$ *subito*. Dynamic markings include ff , pp , and f . A blue dashed line connects this section to the Percussion part.
- Perc.** (Percussion): Includes a section marked pp .
- Bsn.** (Bassoon): Includes a section marked pp .

Musical score for page 47. The score includes the following parts and markings:

- Piano:** Starts with $\text{♩} = 120$ *subito*. Dynamic markings include ff , pp , and p . A green dashed line connects this section to the tempo marking on page 52.
- Chimes:** Includes a section marked pp .
- Clock:** Includes a section marked pp .
- Mallets (M.M.):** Includes sections marked pp and p .
- Violin (Vln.):** Includes sections marked p and p .
- Viola (Vla.):** Includes a section marked p .

Musical score for page 34, featuring multiple staves and annotations:

- Voice 1+2:** A staff with a bracketed section of 5 measures, marked "5' ca." above it.
- Tbn:** A staff with a red dashed line connecting it to the Voice staff.
- Perc.:** A staff with a bracketed section of 3 measures, marked "3' ca." above it.
- Ensemble:** A large section of staves including:
 - Flute:** A staff with a bracketed section of 3 measures, marked "3' ca." above it.
 - Clarinet:** A staff with a bracketed section of 3 measures, marked "3' ca." above it.
 - Woodwinds:** A group of staves including Piccolo (Picc.), Flute (Fl.), Clarinet (Cl.), Bassoon (Bsn.), and Oboe (Ob.).
 - Strings:** A staff with a bracketed section of 3 measures, marked "3' ca." above it.
 - Other:** A staff with a bracketed section of 3 measures, marked "3' ca." above it.
- Annotations:** Blue dashed lines connect the "3' ca." annotations to the corresponding sections in the ensemble. A red dashed line connects the Voice staff to the Tbn staff.
- Bottom Section:** A staff with a large grey shaded area above it, containing notes and a bracketed section of 3 measures.

This musical score is for a percussion ensemble. It features several staves with rhythmic notation and dynamic markings. The instruments and their parts are as follows:

- Any vocal:** A staff at the top left with a 5" ca. (caval) marking.
- B.C. 1:** A staff below Any vocal.
- Ex. Any "Halla":** A staff below B.C. 1.
- B.C. 2:** A staff below Ex. Any "Halla".
- 3" ca.:** A marking between B.C. 1 and B.C. 2.
- Snare Drum:** A staff with rhythmic notation and a *f* dynamic marking.
- Tom-tom:** A staff with rhythmic notation and a *f* dynamic marking.
- 7" ca.:** A marking between the Snare Drum and Tom-tom staves.
- Chimes:** A staff with rhythmic notation and a *mf* dynamic marking.
- Timpani:** A staff with rhythmic notation and a *f* dynamic marking.
- Pho.:** A staff at the bottom right with rhythmic notation and a *ff* dynamic marking.
- Db.:** A staff below Pho. with rhythmic notation and a *ff* dynamic marking.

The score includes various musical notations such as stems, beams, and accents, indicating the timing and intensity of the percussion parts.

This page of a musical score contains several staves for different instruments. At the top, there is a Percussion staff with various rhythmic patterns. Below it is a Snare drum staff, followed by a Bass Drum staff. The woodwind section includes B.C.L. (Bass Clarinet) 1+2, Tib. (Tubular Bells), and 3rd Cl. (3rd Clarinet). A Piccolo staff is also present. The score includes dynamic markings such as *f* (forte) and *mf* (mezzo-forte). There are also performance instructions like "Exit Dry" and "Clock." with corresponding musical notation. A large grey bar is present in the lower right section of the page, likely indicating a section change or a specific performance instruction. Blue dashed lines connect the Percussion and Snare staves to the corresponding parts in the woodwind section.

Musical notation for Trombone (Tbn.) in 3/4 time. The staff shows a melodic line with dynamic markings of *f* and *mf*. The notes are: G4, A4, B4, C5, B4, A4, G4.

Musical notation for Trombone (Tbn.) in 3/4 time. The staff shows a melodic line with dynamic markings of *f* and *mf*. The notes are: G4, A4, B4, C5, B4, A4, G4. Above the staff, the instruction "Almost breaking sound..." is written. A blue line connects this instruction to the Chimes staff below.

"Breve pausa- Bp"

Musical notation for Chimes in 3/4 time. The staff shows a melodic line with dynamic markings of *mf* and *pp*. The notes are: G4, A4, B4, C5, B4, A4, G4.

Musical notation for Trombone (Tbn.) in 3/4 time. The staff shows a melodic line with dynamic markings of *f* and *mf*. The notes are: G4, A4, B4, C5, B4, A4, G4. Above the staff, the instruction "Breve pausa- Bp" is written. A blue line connects this instruction to the Chimes staff above.

Rallentando poco a poco e crescendo . . .

$\text{♩} = 60$

Musical score for Percussion, Bin., Tbn., Tba., Glock., and Chimes. The score is written on six staves. The Percussion staff (Pic.) is the top staff, followed by Bin., Tbn., Tba., Glock., and Chimes. The score includes various musical notations such as notes, rests, and dynamic markings. A tempo marking of $\text{♩} = 60$ is present at the top left. A *Rallentando poco a poco e crescendo* instruction is written across the top. A green dashed line spans across the score, and a blue dashed line connects the Percussion staff to the Glock. staff. The Chimes staff has a mf marking.

$\text{♩} = 30$ As loud as possible

Musical score for page 39. The score includes staves for Voice, Perc., B.Cl., Bsn., Tbn., Tba., Glock., and Chimes. A dynamic marking of pp is present at the beginning, followed by a dashed line indicating a crescendo. The tempo is marked as $\text{♩} = 30$ and the instruction is "As loud as possible".

Musical score for page 54. The score includes staves for Perc., B.Cl., Tbn., and Chimes. The Perc. and B.Cl. parts feature complex rhythmic patterns with many notes and rests. The Tbn. part has a few notes with slurs. The Chimes part has a few notes with slurs. The score includes various musical notations such as slurs, ties, and dynamic markings.

Score for various instruments with dynamic markings and performance instructions:

- Voice 1 & 2:** Standard musical notation.
- Perc:** Includes *Est. Atry "Noble"* and *B.C.I. 1 & 2*. Dynamic markings: $23''$ ca., $15''$ ca., $17''$ ca.
- Ban.:** Includes *Est. Atry "Noble"*. Dynamic marking: $27''$ ca.
- Tbn.:** Includes *Est. Atry "Noble"*. Dynamic marking: $21''$ ca.
- Tba.:** Includes *Est. Atry "Noble"*. Dynamic marking: $25''$ ca.
- Glock.:** Includes *Tin cande* and *Prnc.* Dynamic marking: $29''$.
- Chimes:** Includes *Vln.* Dynamic marking: $31''$ ca.
- Vn.:** Includes *Db.* Dynamic marking: $19''$ ca.

$\text{♩} = 60$

The musical score on page 41 features a tempo of $\text{♩} = 60$. The main score includes a Voice part (labeled 'Voice 112') and Percussion (labeled 'Perc.'). The percussion part is marked *ppp*. A bracket indicates a 5" ca. duration for a section of the percussion. Below the main score, there are two detailed rhythmic diagrams. The first diagram shows a sequence of notes with a 5" ca. duration, with labels 'Bin.' and 'Thin.' below it. The second diagram shows a sequence of notes with an 11" ca. duration, with labels 'Thin wood', 'Perc.', and '*ppp*' below it. On the right side of the page, there are two staves for Violin (labeled 'Vn.') and Viola (labeled 'Vla.'). The violin part is marked *pp* and has a 5" ca. duration annotation. The viola part is marked *f* and has an 11" ca. duration annotation. At the bottom of the page, there are two staves for Bass (labeled 'B.') and Double Bass (labeled 'Db.'). The bass part is marked *f* and has a 5" ca. duration annotation. The double bass part is marked *db*.

Notes
1/12
ppp
5' ca.

H.C.I.
1/12
5' ca.

Bam.
5' ca.

Said
This
ppp

Low words
(Irregular tranches)
pppp
Proc.

SM
Clock
5' ca.

Chinese
pppp
T.S.A.

This
D.S.

Moltissimo rit. al fine . . .

Musical score for page 44, featuring the following instruments and sections:

- Banjo:** A single staff with a *pp* dynamic marking.
- Timpani:** A staff with a *pp* dynamic marking and a bracketed section labeled "5' ca.".
- Perc.** A staff with a *pp* dynamic marking and a bracketed section labeled "7' ca.".
- Uta corda:** A staff with a *pp* dynamic marking.
- SM:** A staff with a *pp* dynamic marking.
- Chimes:** A staff with a *pp* dynamic marking.
- Violins (Vn. I & II):** Two staves with *pp* dynamic markings.
- Violas (Vcl.):** A staff with a *pp* dynamic marking.
- Violoncello (Vcl.):** A staff with a *pp* dynamic marking.
- Double Bass (Cb.):** A staff with a *pp* dynamic marking.

The score includes various musical notations such as stems, beams, and dynamic markings. Blue lines connect the *pp* markings to the *ppppp* markings on the right page. A green dashed line connects the *Moltissimo rit. al fine . . .* instruction to the end of the score.

Musical score for page 59, featuring string staves with *ppppp* dynamic markings.

CHAPTER 2- Work for Chamber Ensemble

Centaurus (2021) - For Amplified Variable Ensemble from 2 to 8 Performers

Possible Instrumentation: 2 to 8 performers inside a piano's acoustic box- Alto Flute, English Horn, Clarinet in A, Soprano Saxophone, Trumpet in C, Flugelhorn, Trombone, Bass Trombone.

This piece was developed by using the Centaurus constellation⁷ configuration as its main structural principle. First, I present a tridimensional projection in a two-dimensional plane (axonometric projection)⁸ as a substitute for the traditional staff. The Axonometric Projection (3D- "staff") defines the relationships between gestures and isolated elements in terms of length, duration, movement, dynamics, relative register, and orientation. The Axonometric Projection matrix does not possess a specific facet that faces upward, hence allowing multiple orientations (see **Figure 2**). It is critical to understand the structural design of the piece from a four-dimensional perspective (two dimensions for projection, one dimension for space, one dimension for time), as it reflects the multi-perspective positioning of each presented gesture as mentioned above.

⁷ Google, Centaurus Constellation, Constellation Guide.

⁸ Google, Definitions for Axonometric Projection.

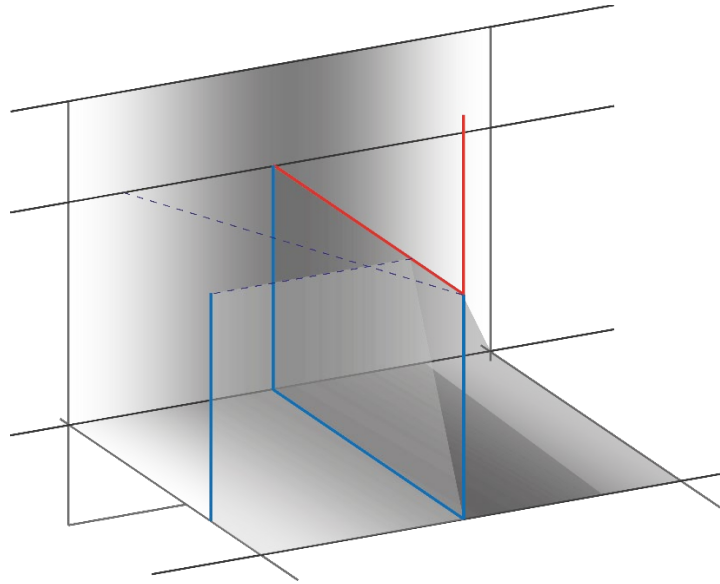


Figure 2- *Axonometric Projection Matrix*

Second, all the included writing techniques, work in favor of the interacting dimensions of the events as they add depth, movement, and temporality to the music. In this sense, gesture-clusters within the composition include movement, emphasis, and trajectory in a single space-occurrence. The mentioned gestures are combined with proportional distances to convert this spatial principle into a musical one. Also, I added dynamic transformations inside each individual moment, in order to add depth into the otherwise unidimensional illustration. The gestural content of this piece was carefully chosen to represent a spherical model with non-given standpoint (multiple options) in as many musical dimensions as possible, starting with relative rhythmic configuration, dynamics, proportional durations, etcetera, as mentioned above. This last multi-dimensional consideration aims to aesthetically represent the relative positioning of objects in space, where there is not up or down, and everything can be seen from any angle. This idea is aesthetically presented in the draft as it aims to allow multiple organizational configurations and performing results without losing the coherence of the musical discourse.

CENTAURUS

For Amplified Mixed Ensemble

of Variable Nature

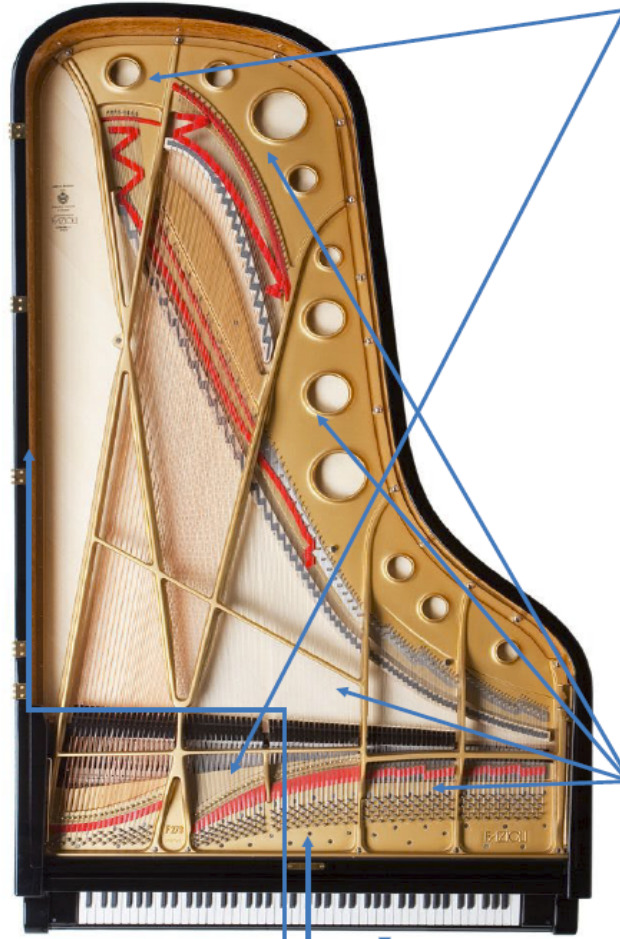
~2 to 8 Performers in any Combination~

(17' approx.)

Eduardo Orea

2022

INSTRUMENTAL SETUP AND AMPLIFICATION



Both piano lid and music rack should be removed.

Damper pedal should always be down.

Performers should be evenly distributed in between the tuning-pins and bass bridge area of the piano as follows:

- 2 performers: 1- treble strings, 2- plate region.
- 3 performers: 1- treble strings, 2- plate region, 3- bass bridge.
- 4 performers: 1- tuning pins, 2- treble strings, 3- plate region, 4- bass bridge.
- From 5 to 8 performers: distribute in such a way that all instruments of the ensemble point towards the piano's acoustic box.

Amplification: one microphone should be placed close to the bass bridge and another microphone close to the treble bridge. In addition, 2 speakers should be placed on the stage, preferably one at each side of the performing space.

CENTAURUS

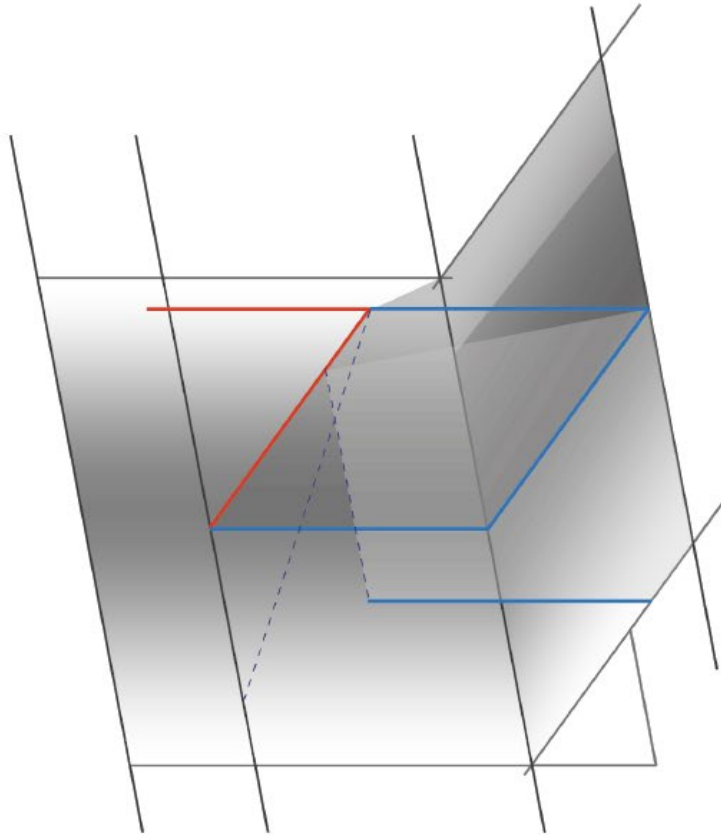
List of possible Instruments for the Ensemble

1. Alto Flute
2. English Horn
3. Clarinet in A
4. Soprano Saxophone
5. Trumpet in C
6. Flugelhorn
7. Trombone
8. Bass Trombone

*Note: there can be one or more instruments of the same type as long as there are at least two, but no more than eight performers.

CENTAURUS

Axonometric Projection Matrix



CENTAURUS

Performance Notes

GENERAL

- With exception of the first and last page (marked with an asterisk), each performer should assign a random order to the different pages of the score.
- All pages of the score can be read from any orientation (e.g., vertical, horizontal, diagonal, etc.).
- The duration of each page should be *circa* 55 seconds. The performer should play all gestures in the page during this time frame before continuing to the next page.

PROJECTION

- The Axonometric Projection (5D- "staff") defines the relationships between gestures and isolated elements in terms of length, duration, movement, dynamics, relative register, and orientation.
- The Axonometric Projection matrix does not possess a specific facet that faces upward, hence allowing multiple orientations.

Performance Notes ~ II

ORIENTATION AND TEMPORALITY

- Gestures can be played in any direction (e.g., right-left, up-down, etc.) independently of the chosen orientation.
- Full gestures are linked by dotted lines and should be played in their entirety (full trajectory) before the performer continues onto the next gesture.
- Isolated elements should be played by relationships of proximity (grouping).
- Temporality is relative to the number of elements in a page. The more elements, the faster the relative tempo, and the fewer elements the slower the relative tempo.
- The size of each element represents its relative length in comparison to contiguous gestures. Length is determined by the relationship between the number and size of elements present in a page, as well as an approximate 35" duration for each page.

Performance Notes ~ III

REGISTER

- The relative register of gestures will depend on the chosen orientation:
 - Vertical: upper side-high register; middle-middle register; lower side-low register.
 - Horizontal: upper side ~ high register; middle- middle register; lower side-low register.
 - Diagonal: left side-high register; middle-middle register; right side-low register.

PITCH

- There is no indicated fixed pitch; the performer should choose an intervallic relationship according to the positioning of the gestures within the selected projection orientation.
- Chromatic succession is not to be played.
- Alternate between accidentals in any order.
- The size of each symbol represents its relative length in comparison to contiguous gestures.

Performance Notes ~ IV

TEXTURE

- Each symbol represents a specific texture. Indications for how each instrumental family should play any given symbol are given in the Textural Chart below.

DYNAMICS

- Changes in transparencies and depth (i.e., size of the element) define the dynamic transformations for the gestures. The smaller/thinner the element, the softer it sounds; the bigger/darker the element, the louder it sounds.








SILENCE


- Blank spaces define silent fragments.
- The length of the silence will depend on the number of elements, different trajectories and relative temporality of the trajectory within the approximate 35" duration for each page.

CENTAURUS







Textural Chart



WOODWINDS (Alto Flute, English Horn, Clarinet in A, and Soprano Saxophone)

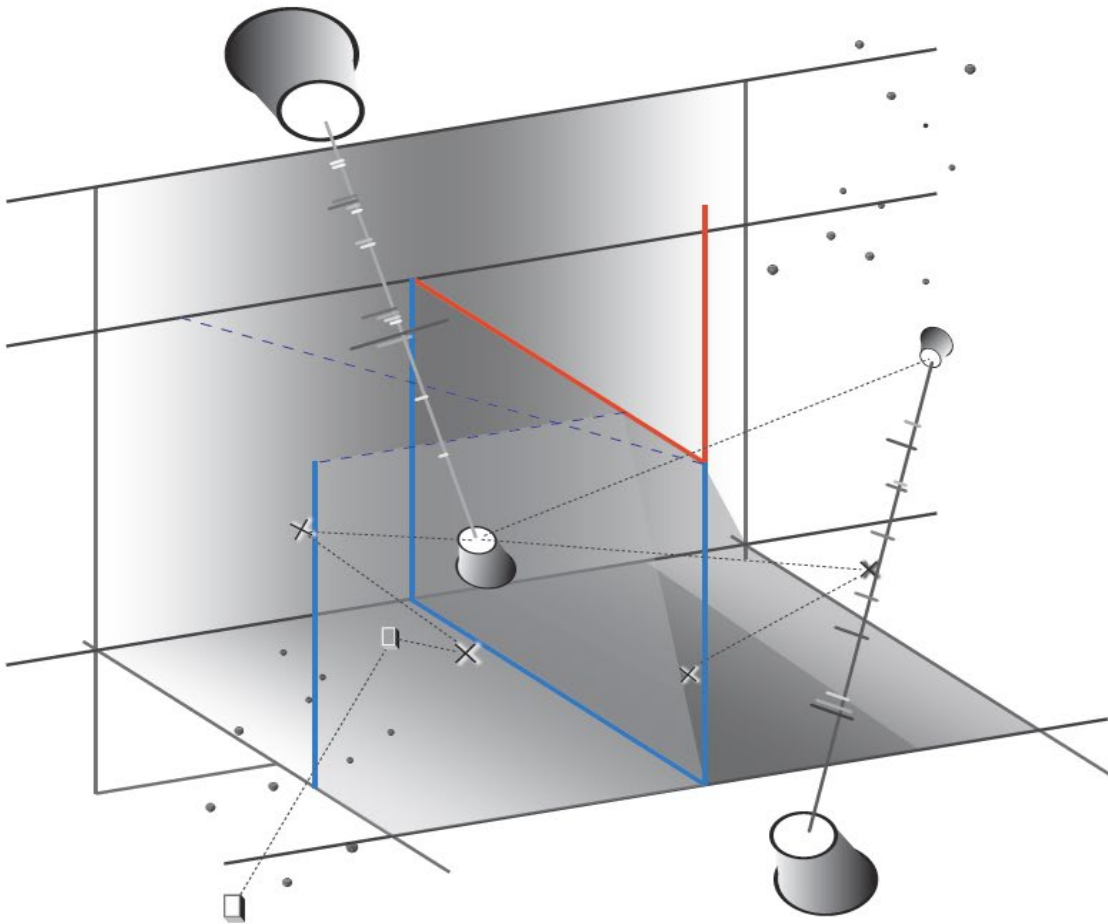
-  = Regular pitch.
-  = Half-pressed keys with a relatively short attack.
-  = Key clicks (softly blow some air through the instrument while playing the key clicks).
-  = *Granular*: overpressure with relative short articulation.
-  = Indicates flutter tongue (FT). The more lines the faster the FT; the lesser lines, the slower the FT.
-  = Indicates slap tongue.
-  = *Overblown partial*: choose a pitch according to the position of the element in the page and overblow the note to extract as many partials as possible using the throat. Changes in size and transparency of the unifying trajectory in between symbols (diamonds) indicate dynamic transformations.

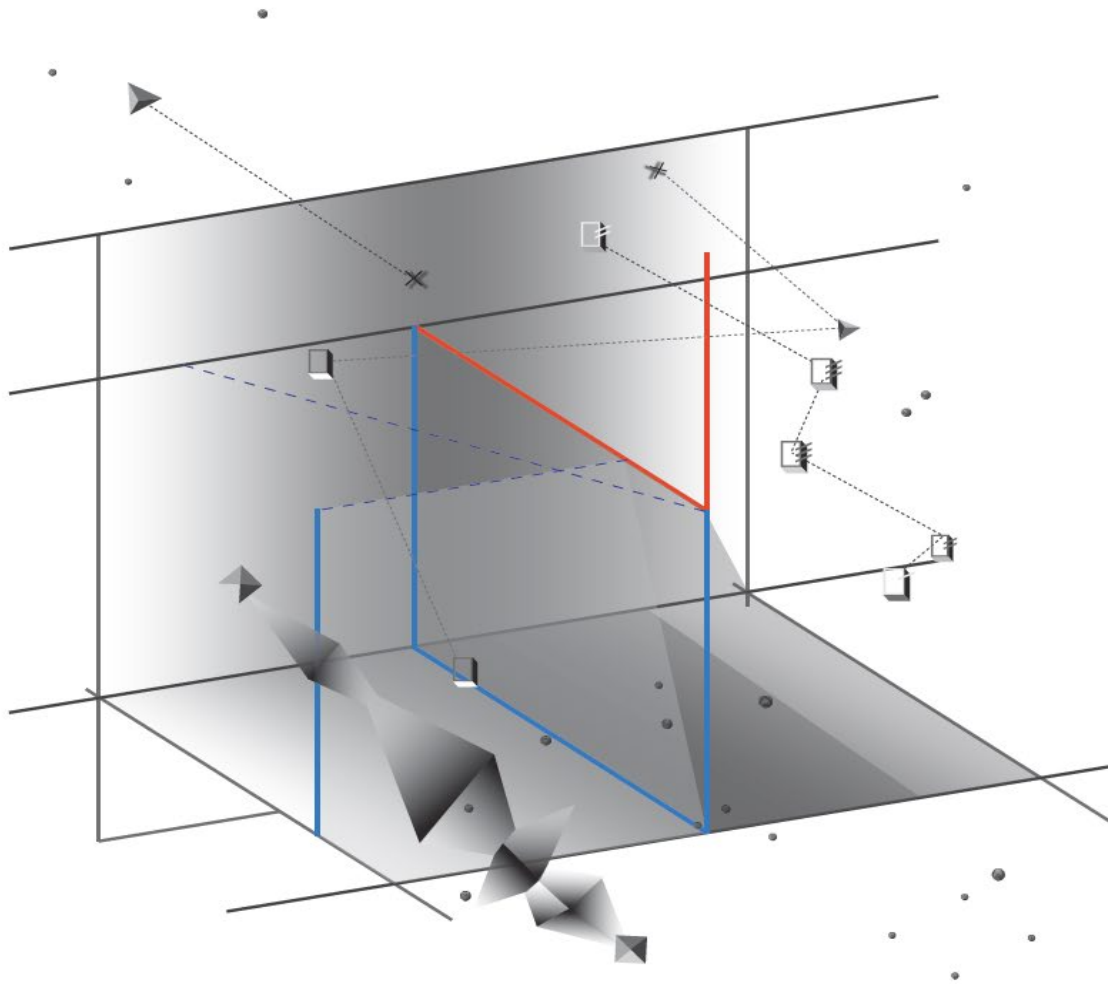
-  = *Wind*: blow approximately 80% air and 20% sound. A bigger circle indicates a lower starting relative pitch, and a smaller circle indicates a higher departing relative pitch. Changes in wavelength saturation of the unifying trajectory in between symbols indicate dynamic transformations.

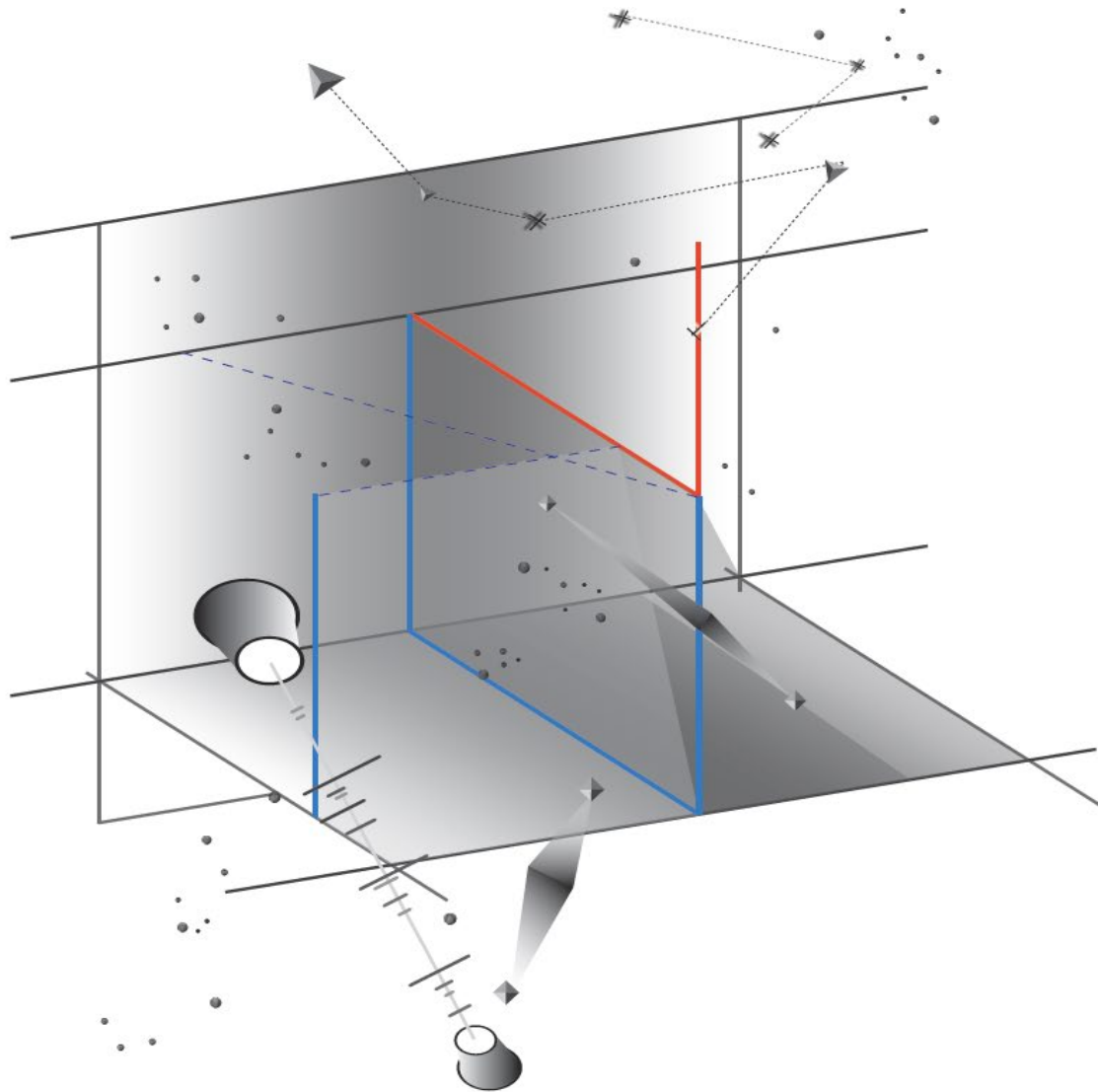
BRASS (Trumpet in C, Flugelhorn, Trombone, and Bass Trombone)

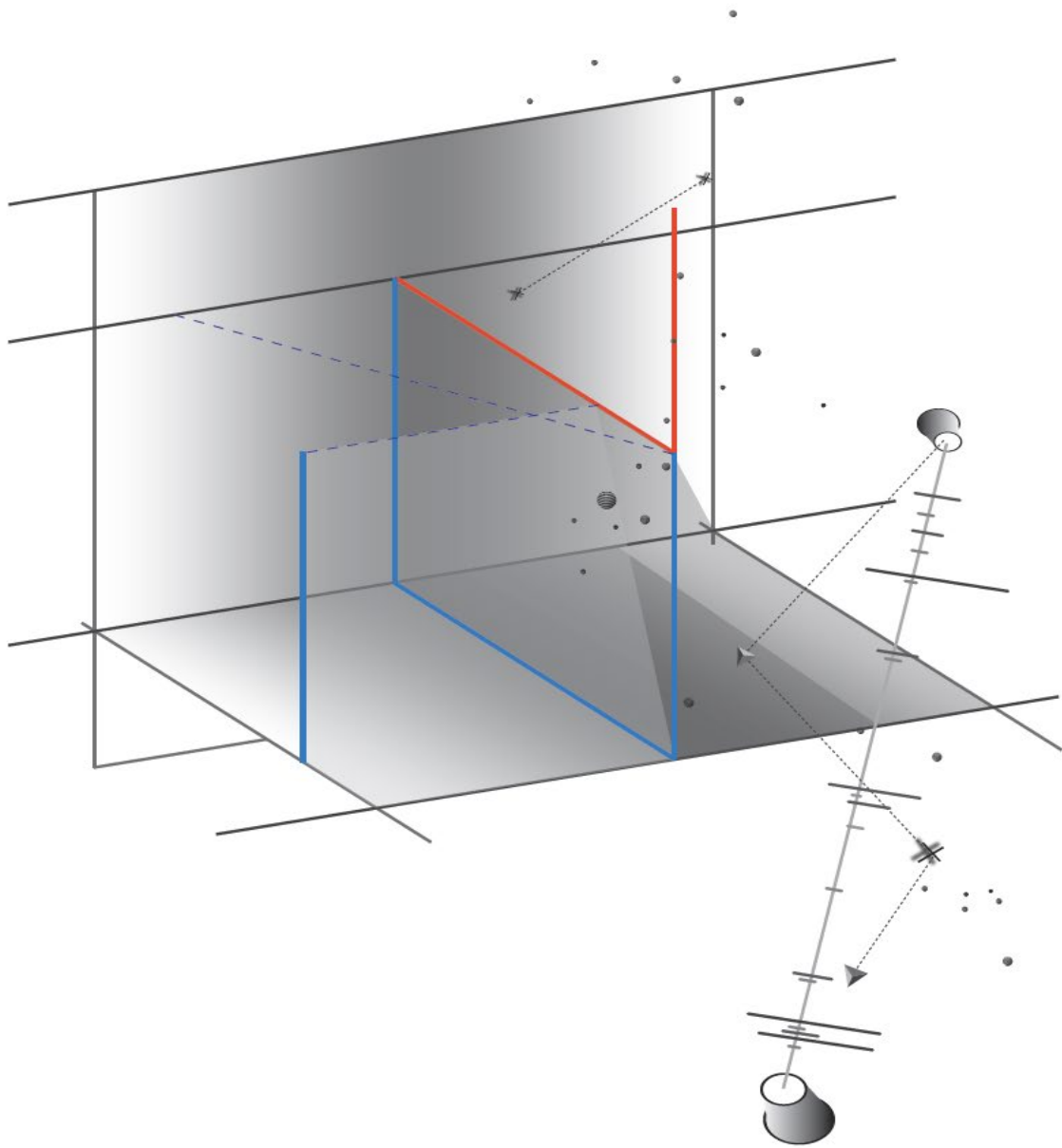
- Instruments must have a Harmon mute in the bell at all times.
-  = Regular pitch.
-  = Half-pressed valve with a relatively short attack.
-  = *Tap*: tap tongue against mouthpiece to create a percussive effect.
-  = *Granular*: overpressure with relative short articulation. Trumpet/Flugelhorn should not use *any* valves for this effect (pitch change is controlled by mouth adjustment), and trombone(s) should play this effect using 1st position only.
-  = Indicates flutter tongue (FT). The more lines the faster the FT; the lesser lines, the slower the FT.
-  = *Burst*: short articulation lip multiphonic. This effect may be achieved by forcing a pitch into the instrument by bending the lip. The smaller the symbol in the page, the smaller the bending and vice versa.

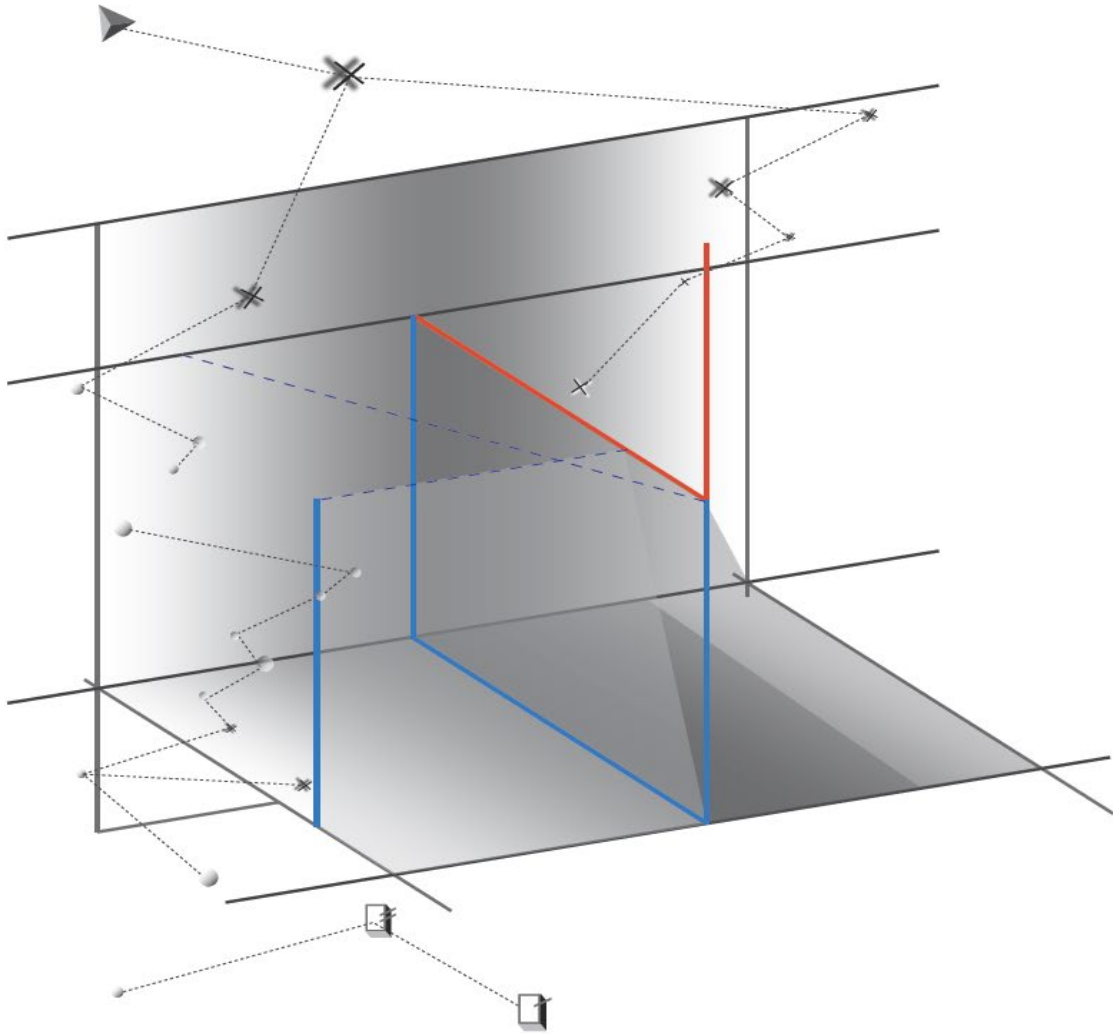
-  = *Sung Multiphonic*: choose a pitch according to the position of the element in the page and sing any interval above such pitch. Change in size and transparency of the unifying trajectory in between symbols (diamonds) indicate both intervallic and dynamic transformations. A bigger/darker trajectory denotes a larger sung interval with a stronger dynamic; and a thinner/lighter section of the trajectory indicates a smaller sung interval with a softer dynamic.
-  = *Wind*: blow approximately 80% air and 20% sound. A bigger circle indicates a lower starting relative pitch, and a smaller circle indicates a higher departing relative pitch. Changes in wavelength saturation of the unifying trajectory in between symbols indicate dynamic transformations, air pressure and vibrato. A darker/thicker wavelength denotes a stronger dynamic and air pressure, as well as a more present vibrato. A lighter/thinner section of the wavelength indicates a softer dynamic and air pressure, as well as a less present vibrato.

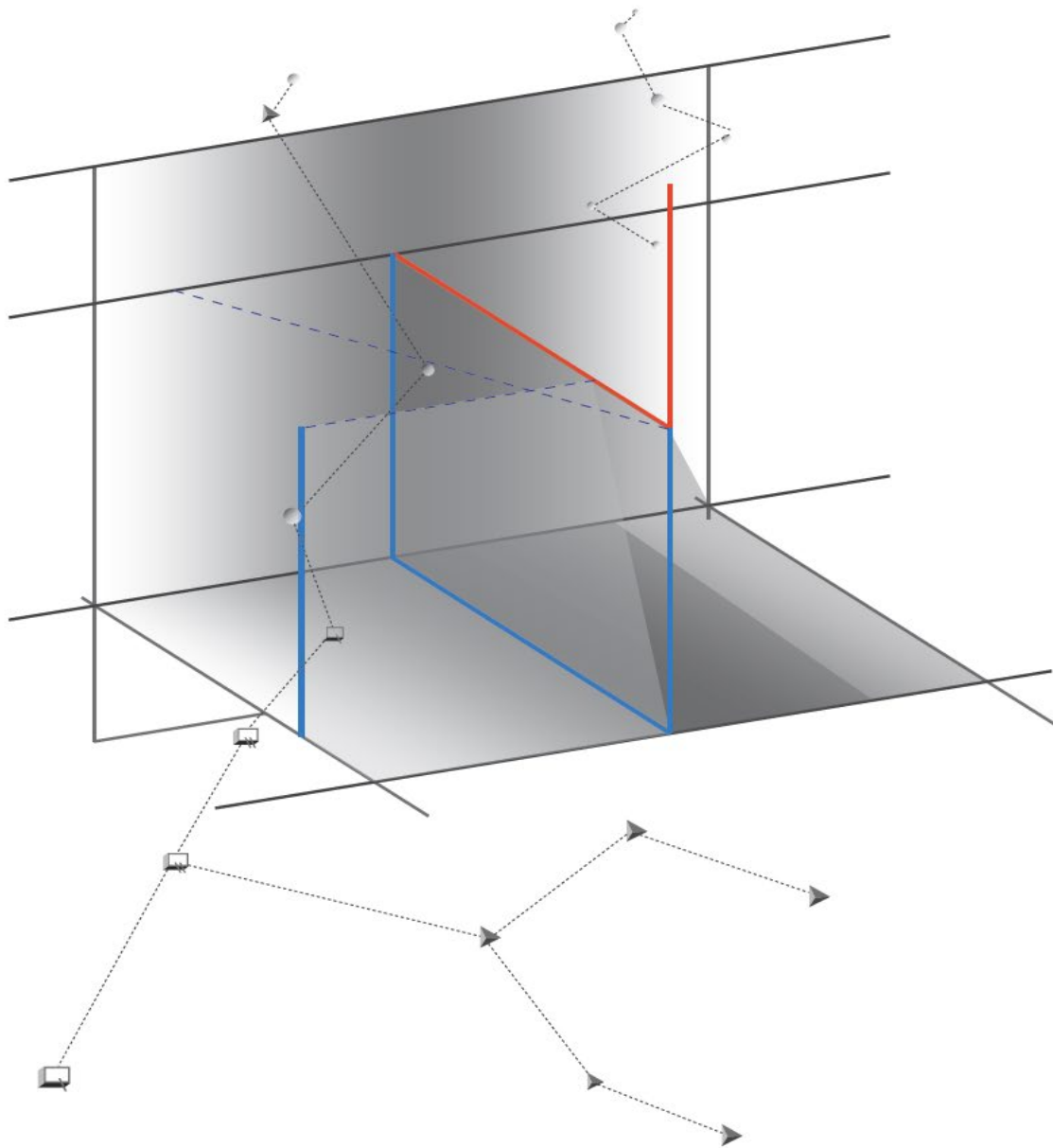


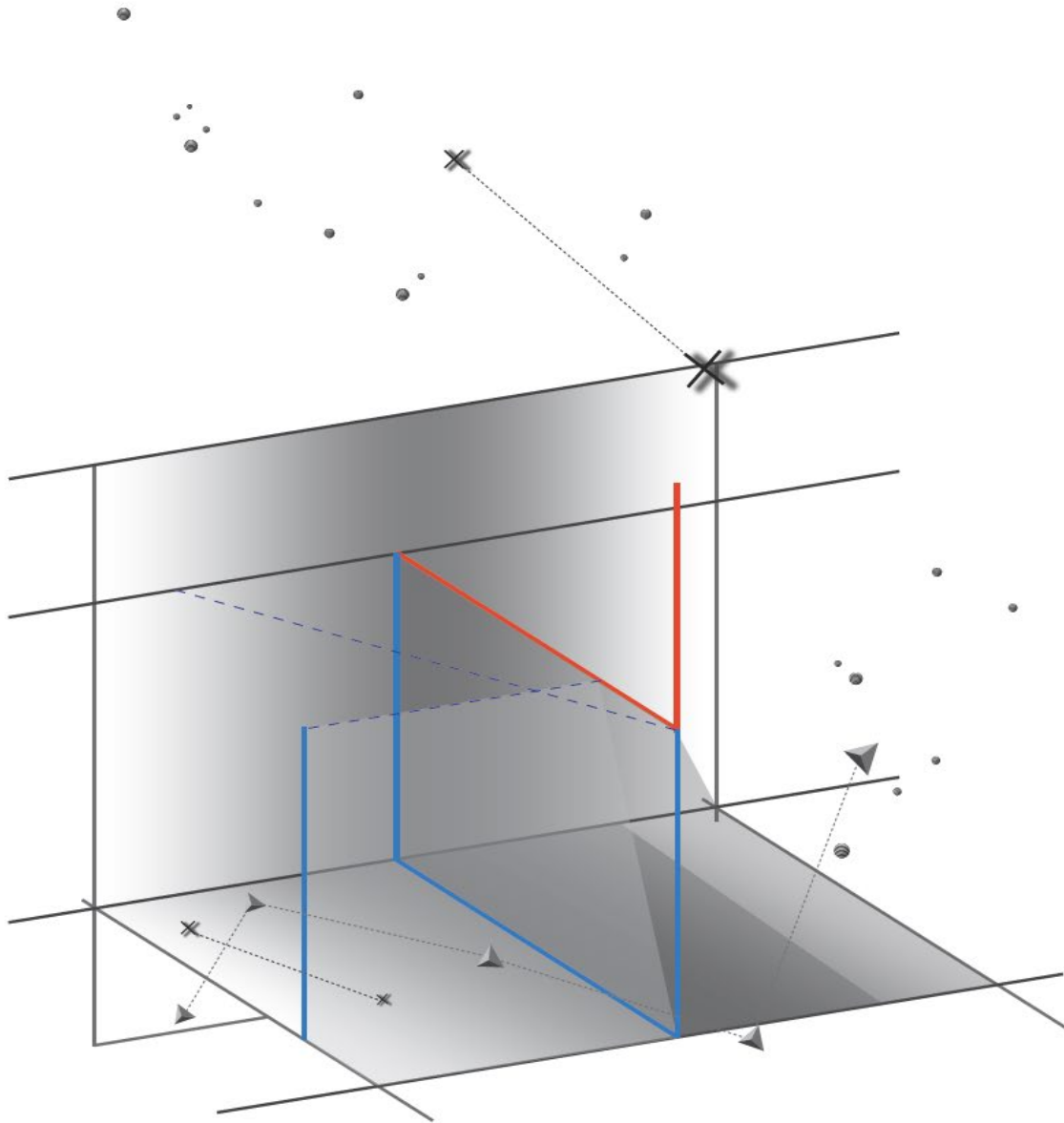


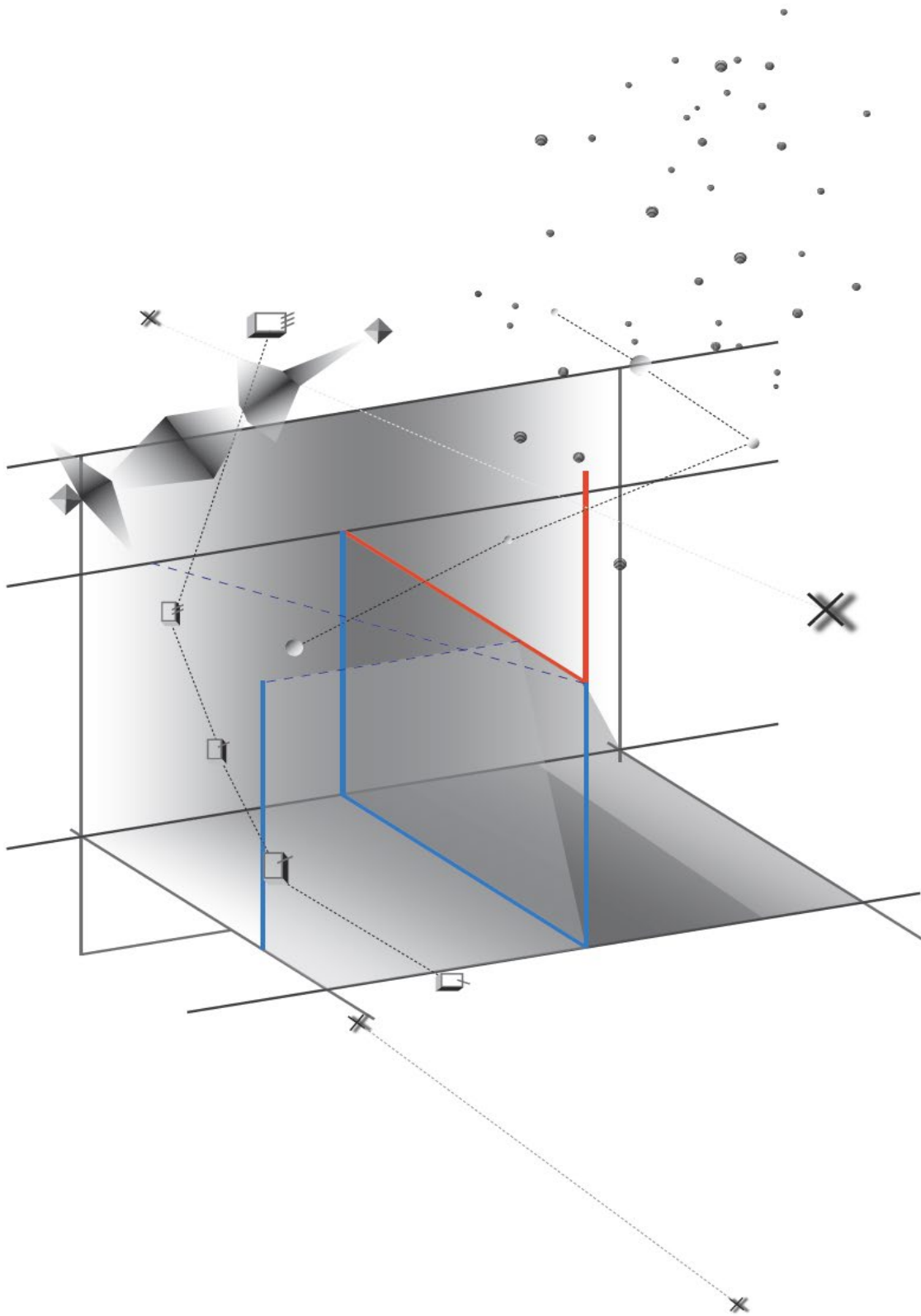


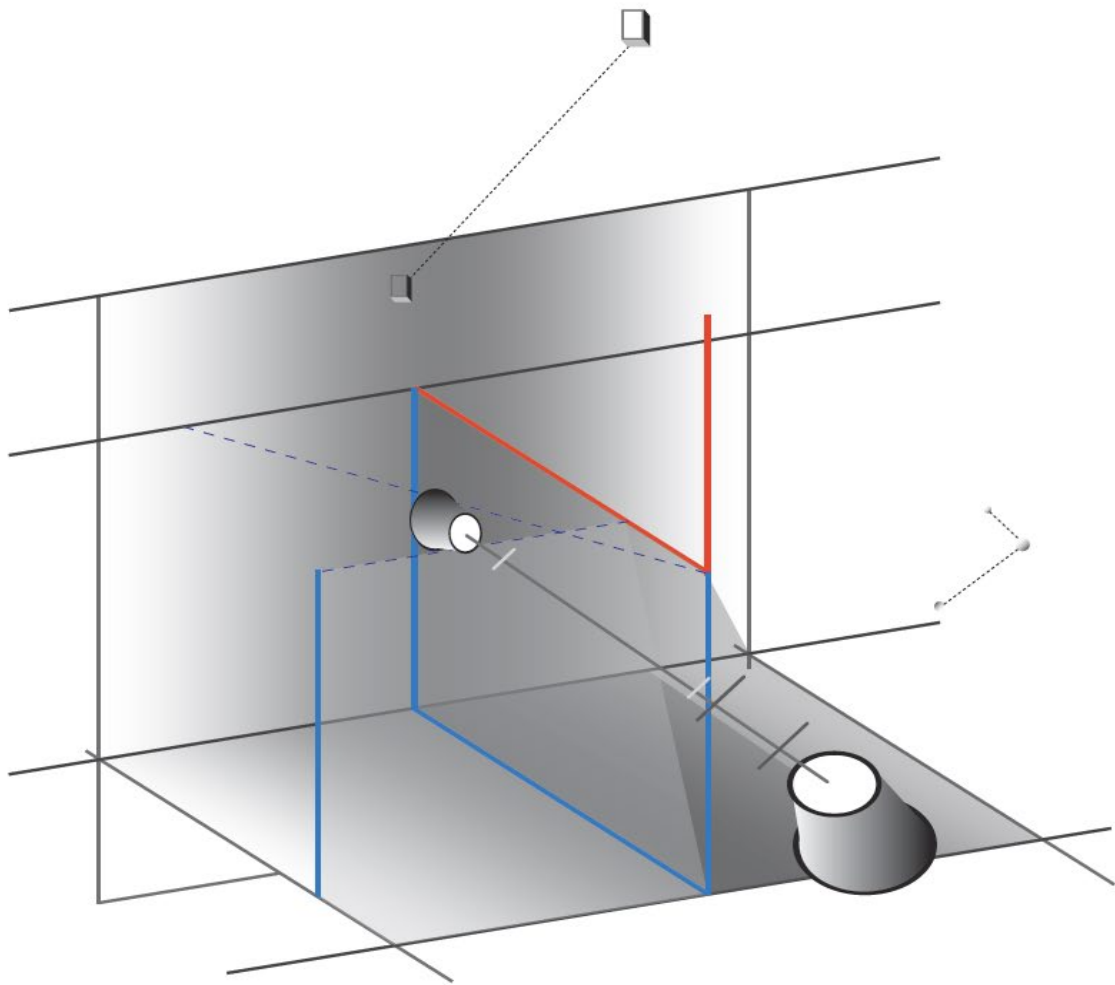


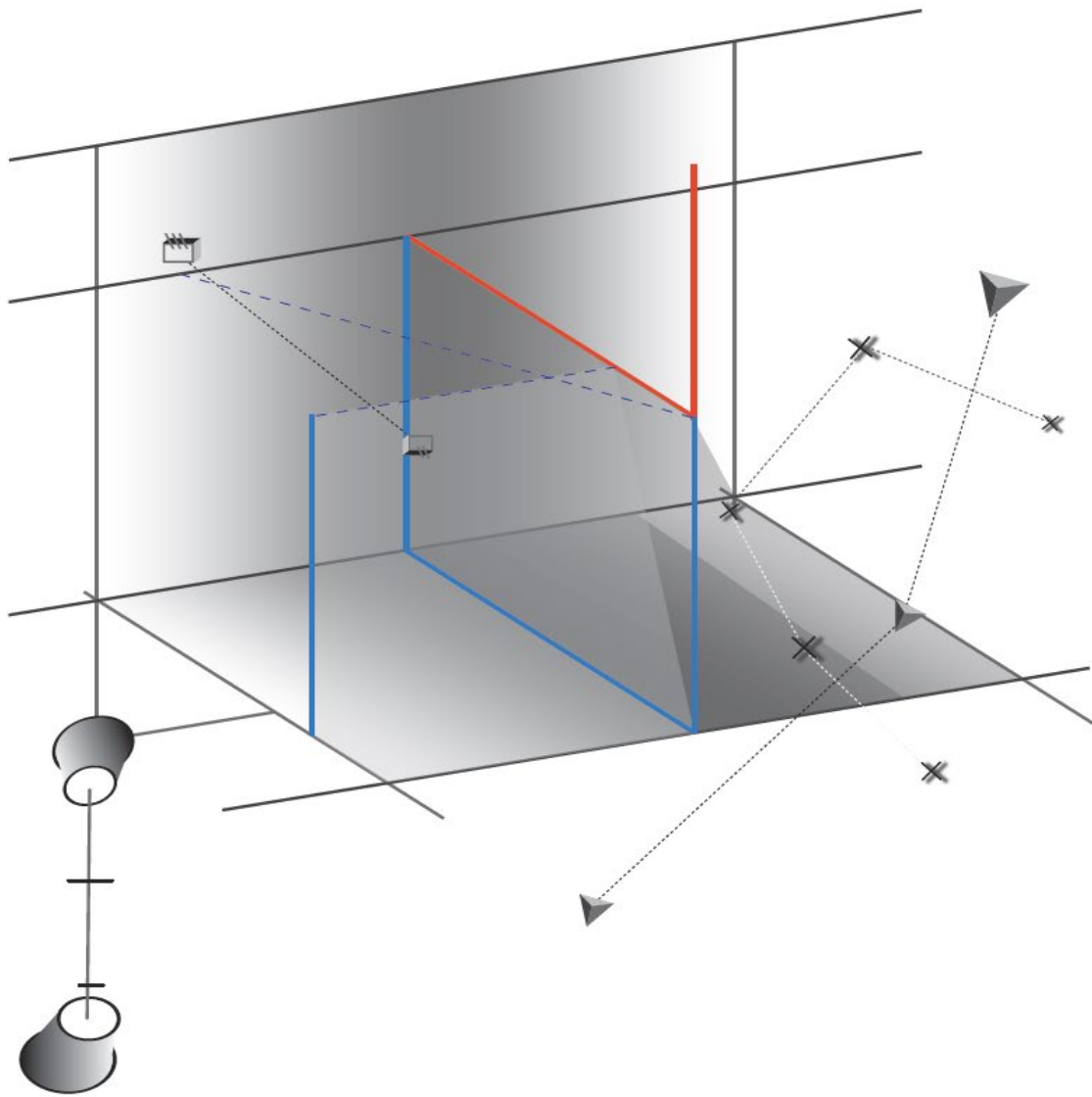


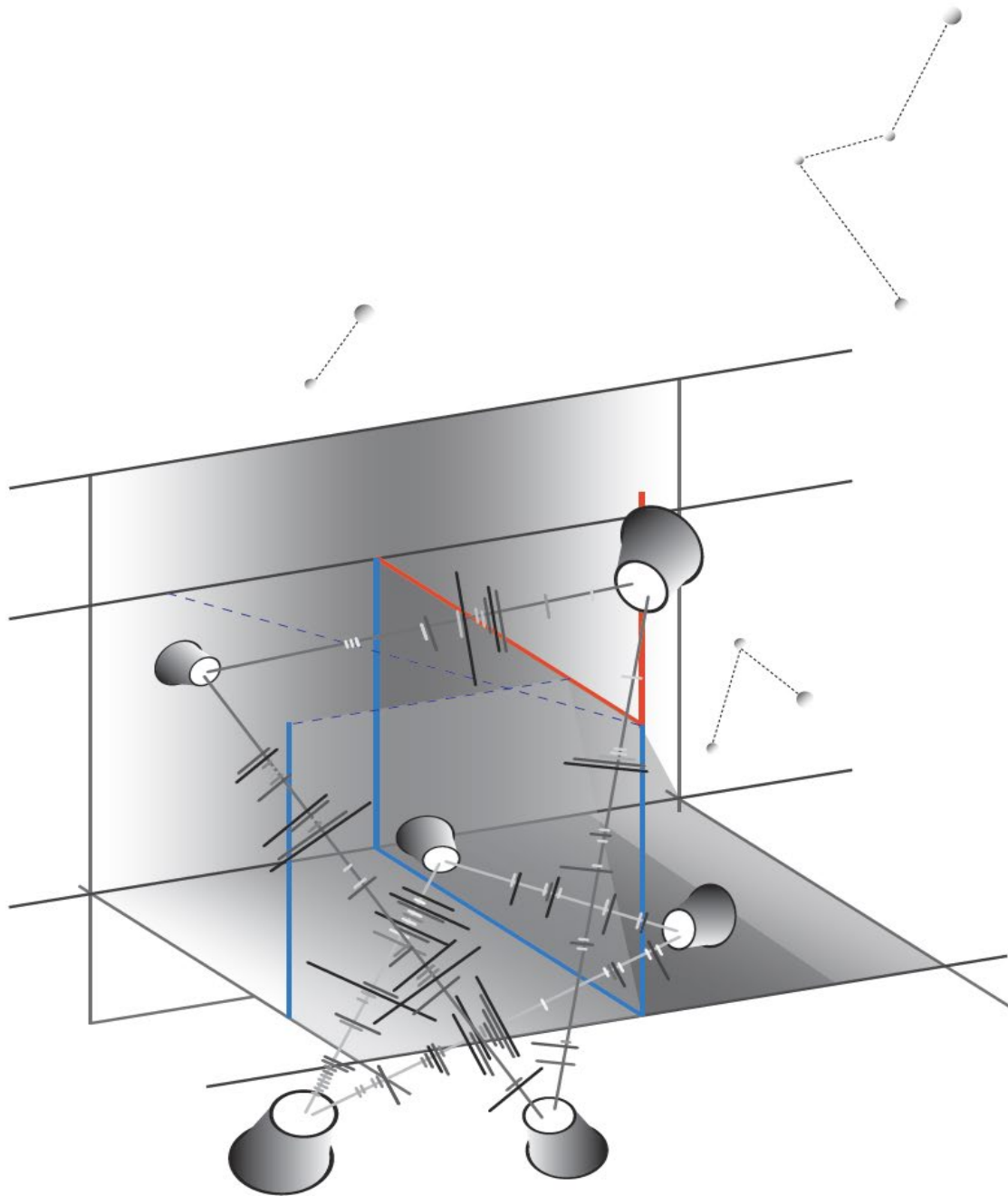


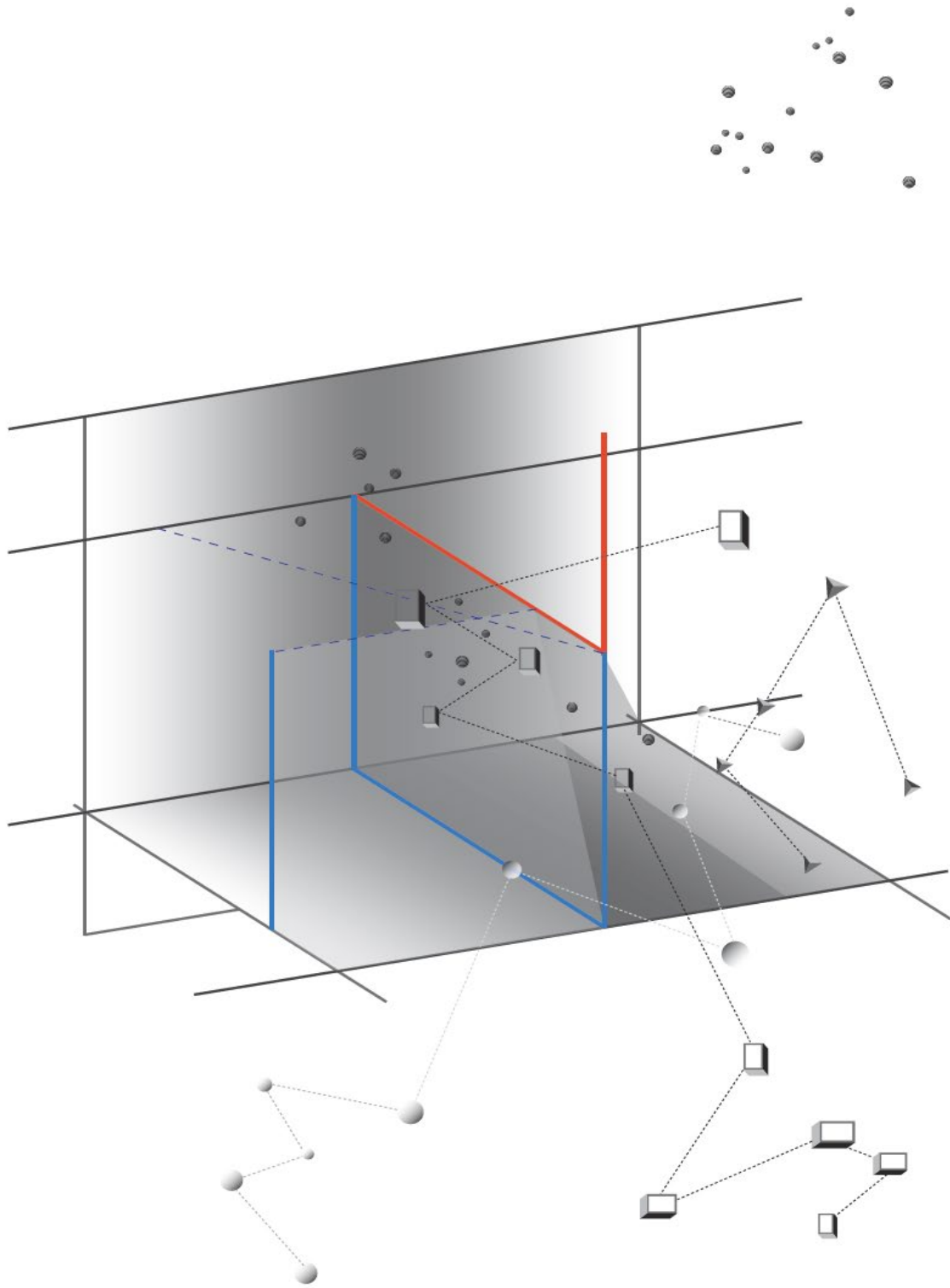


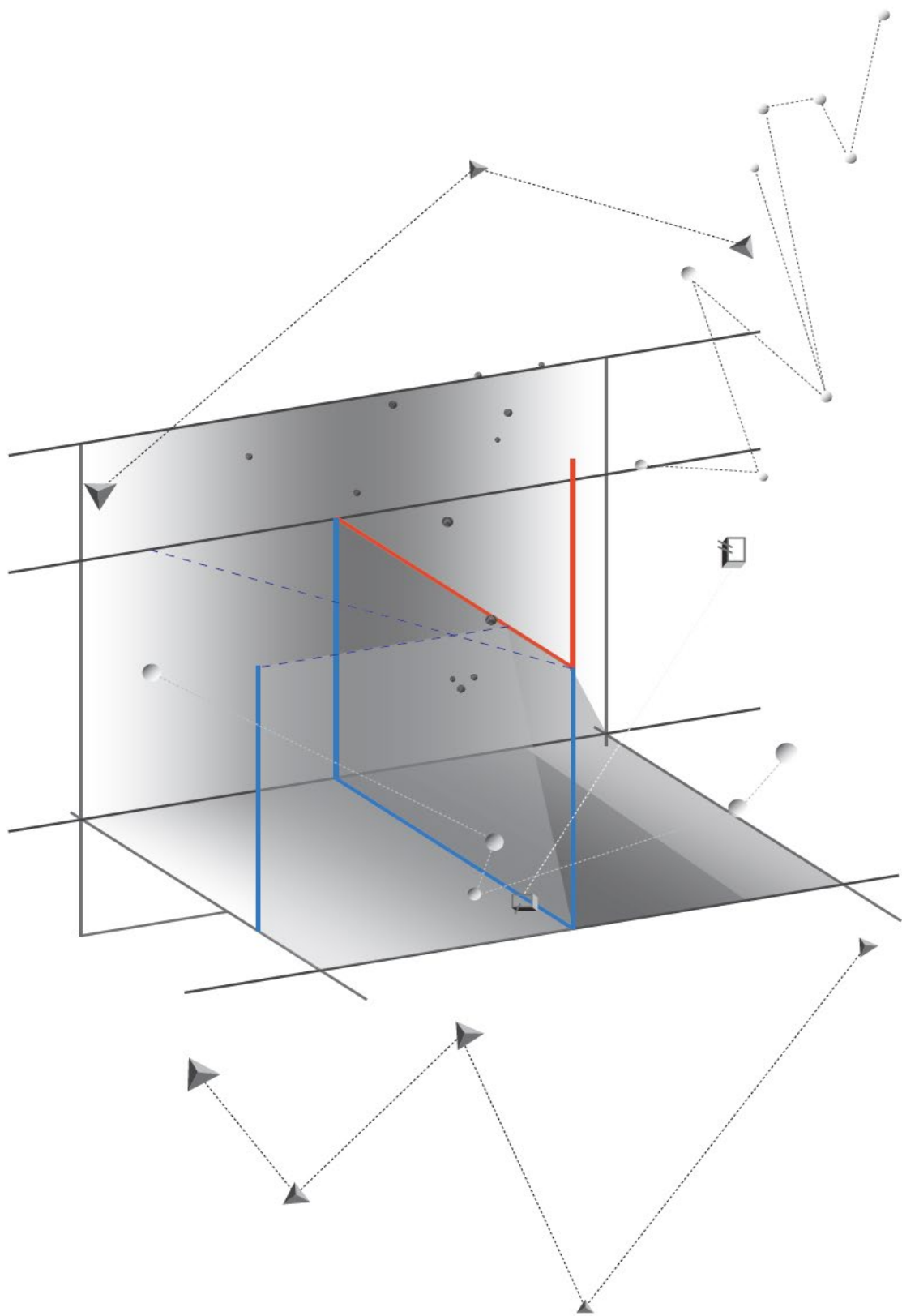


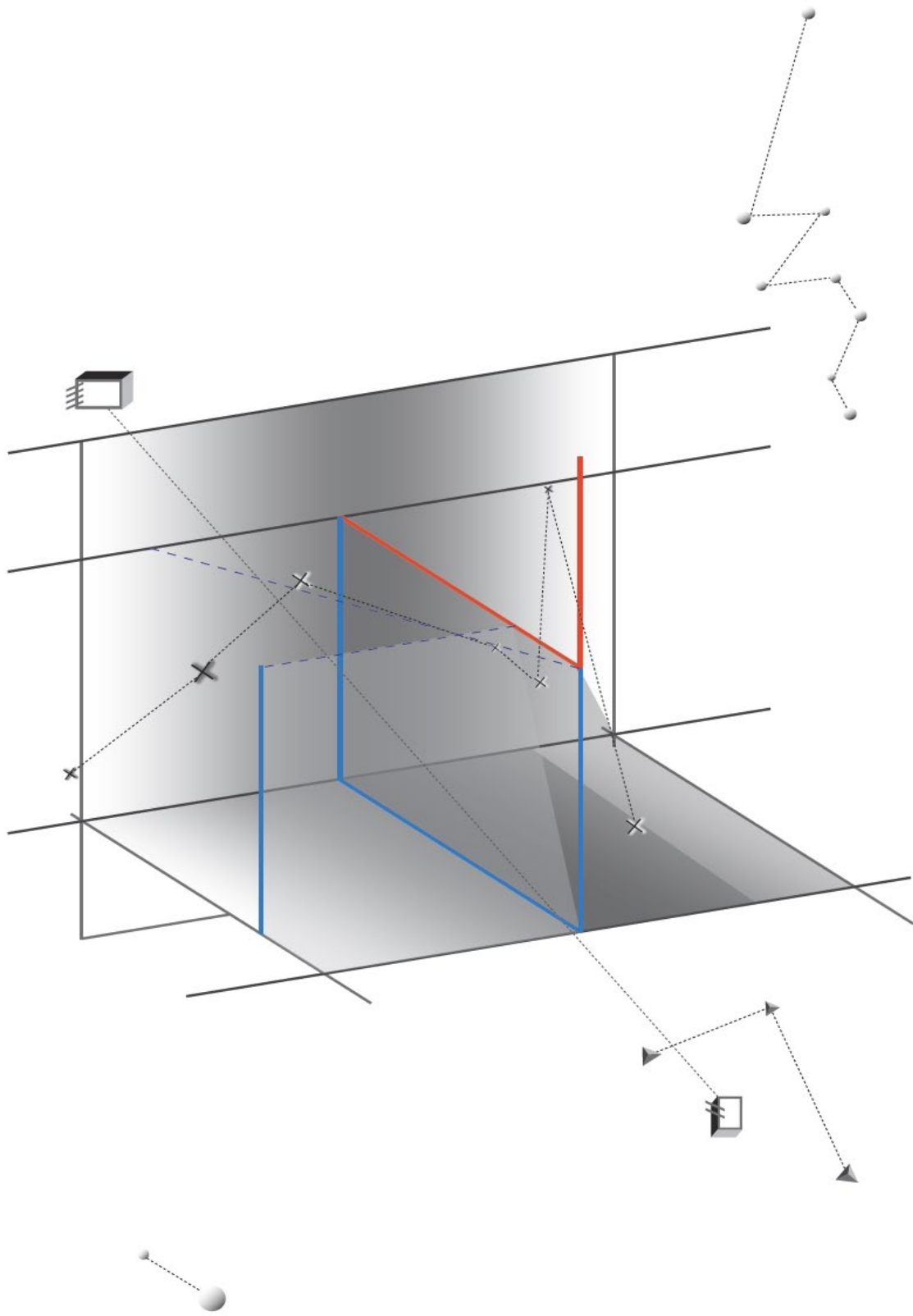


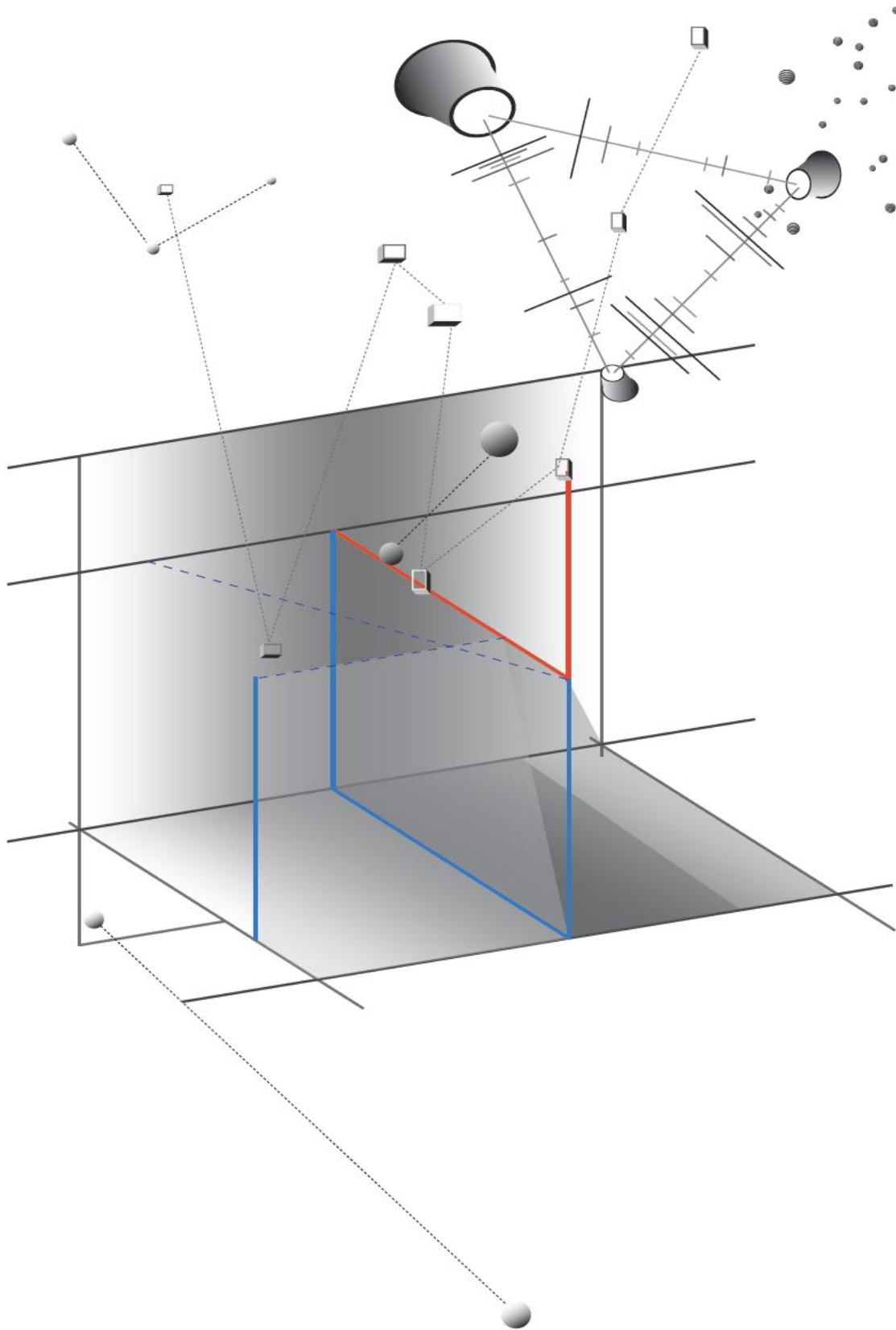


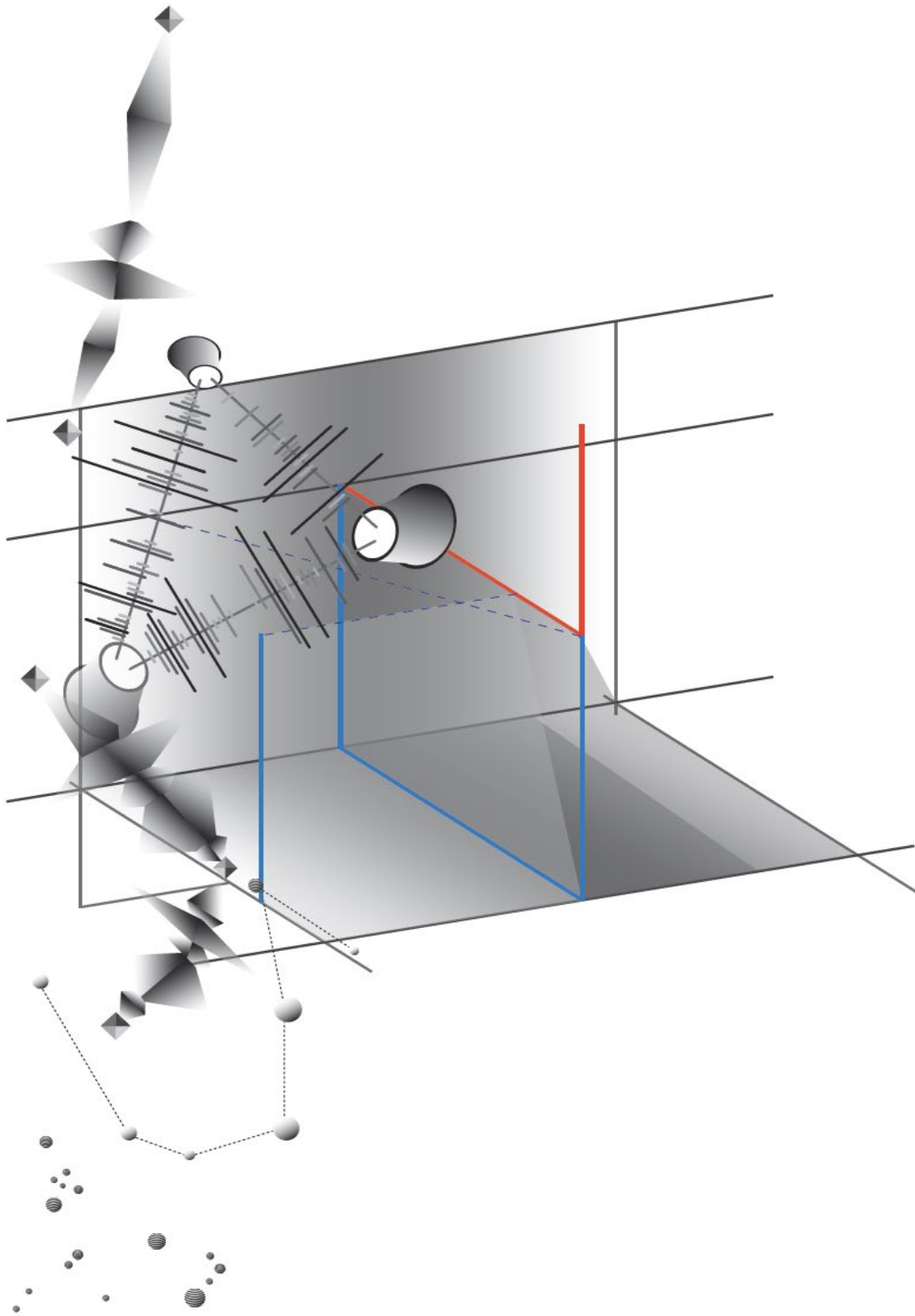


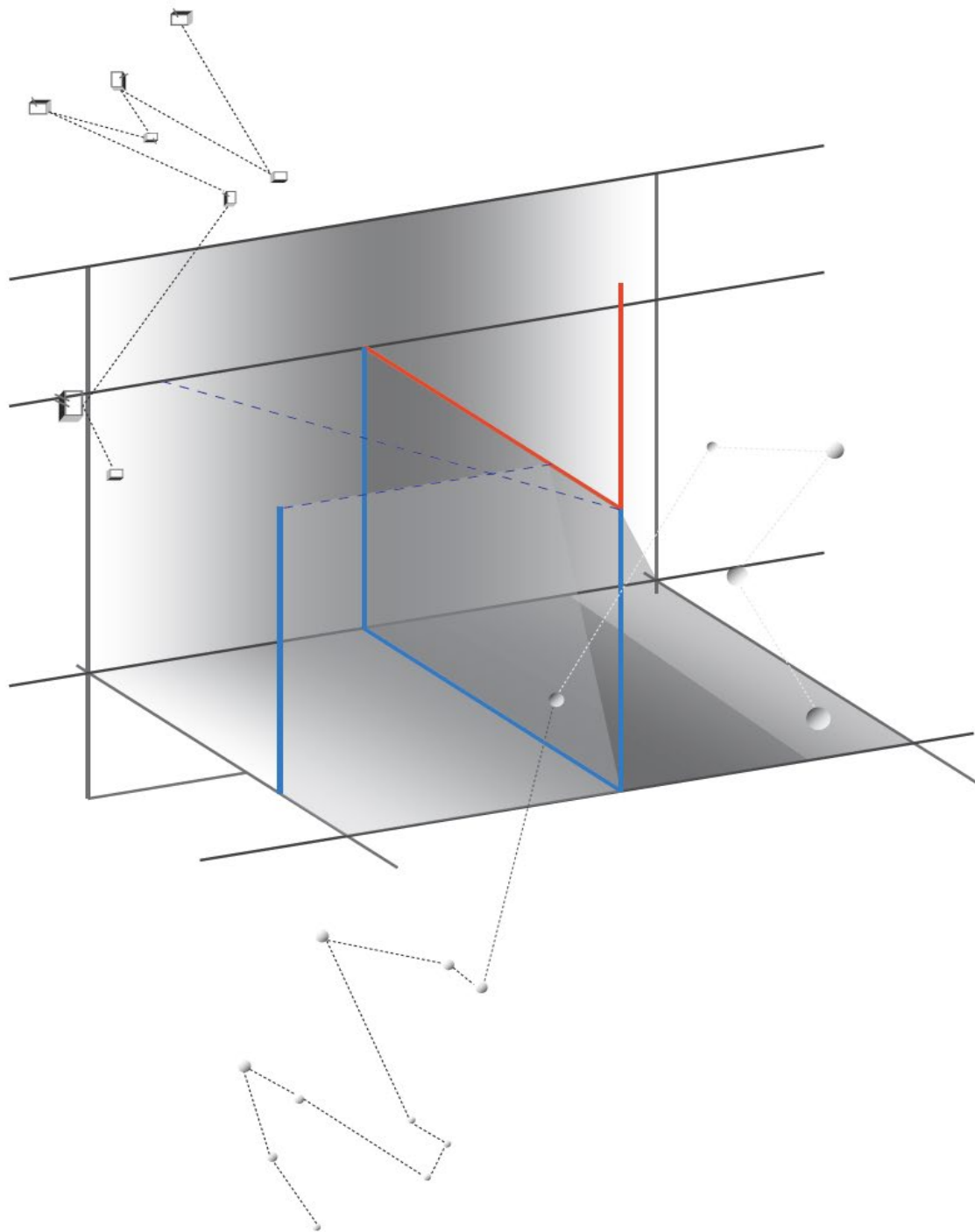


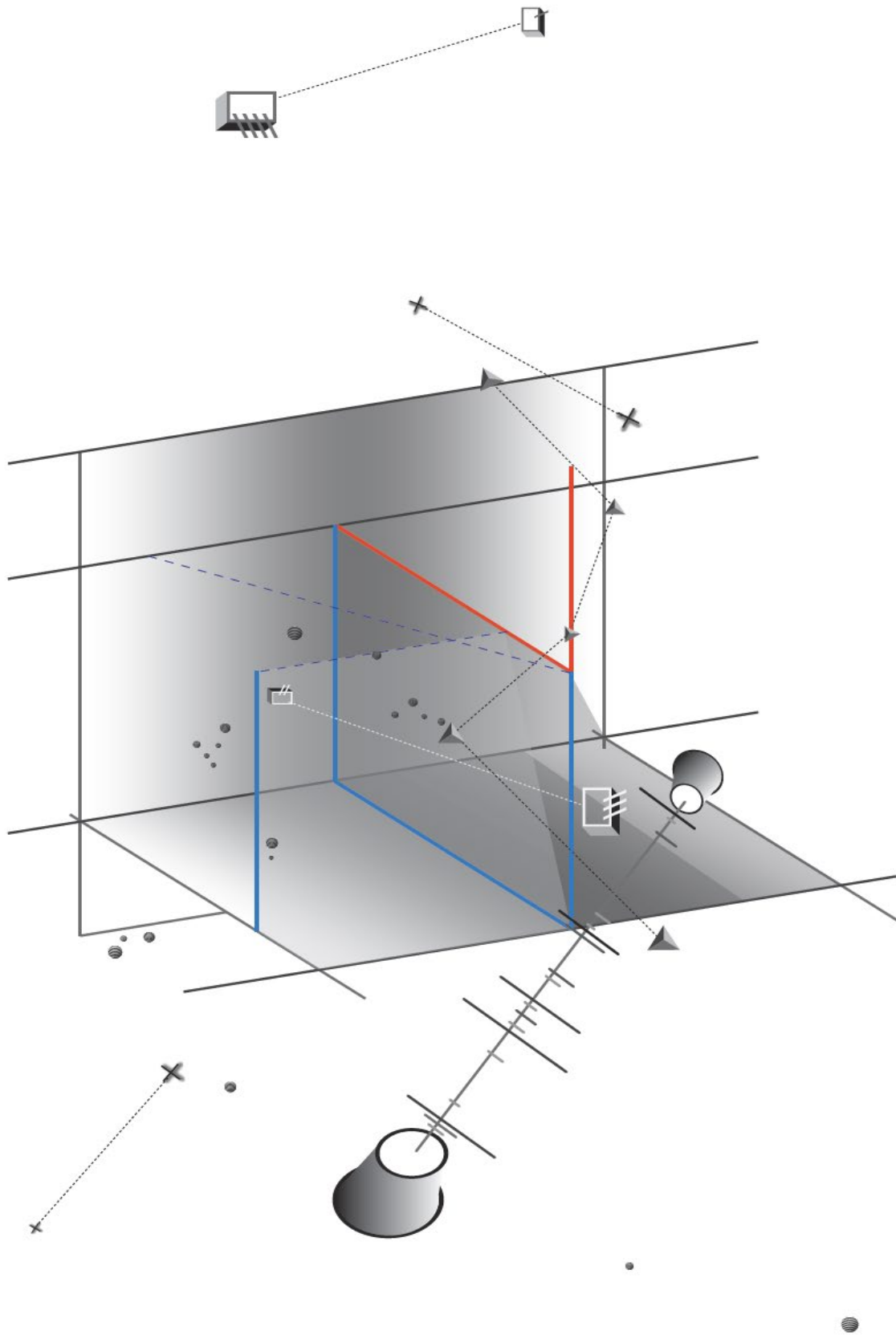


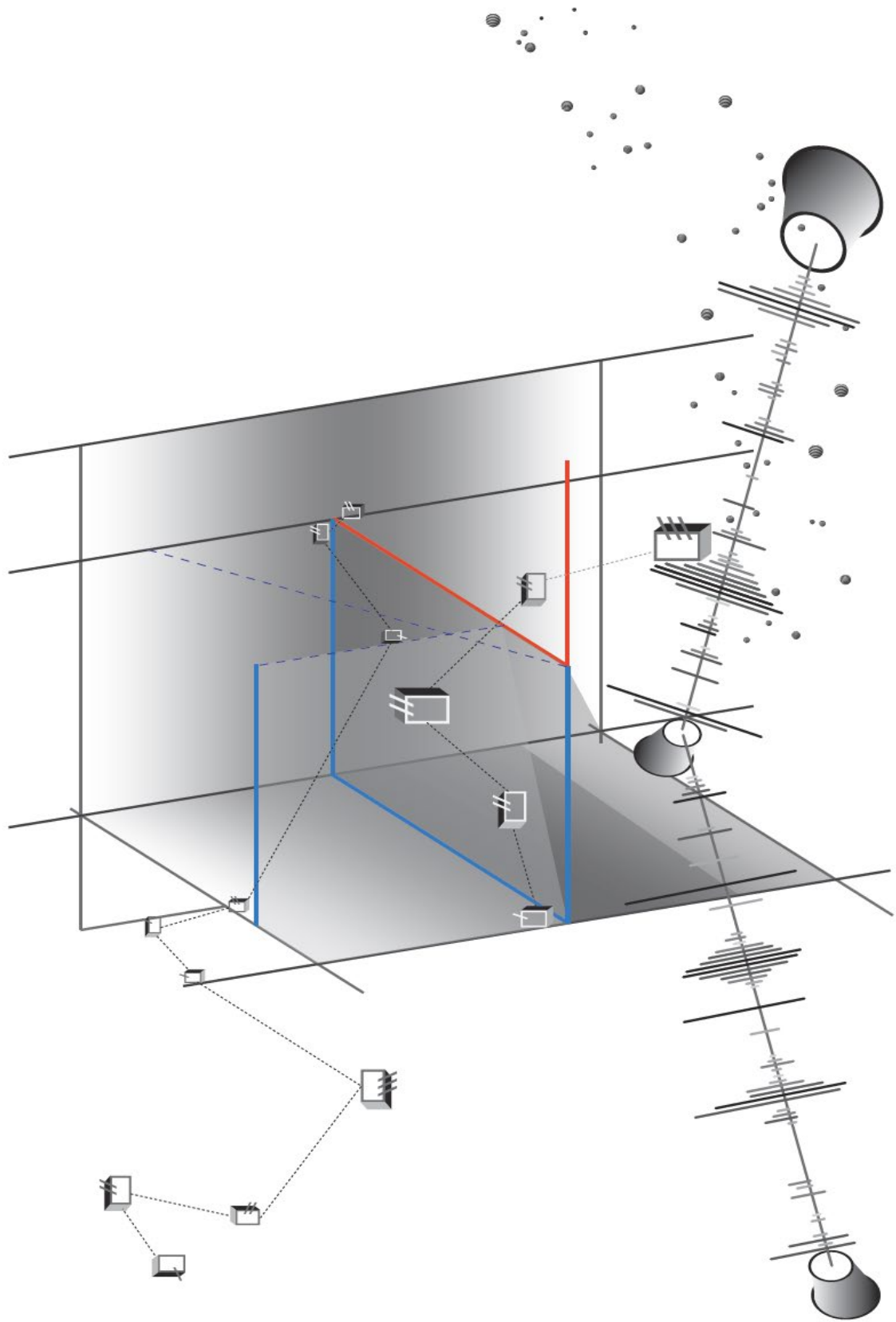


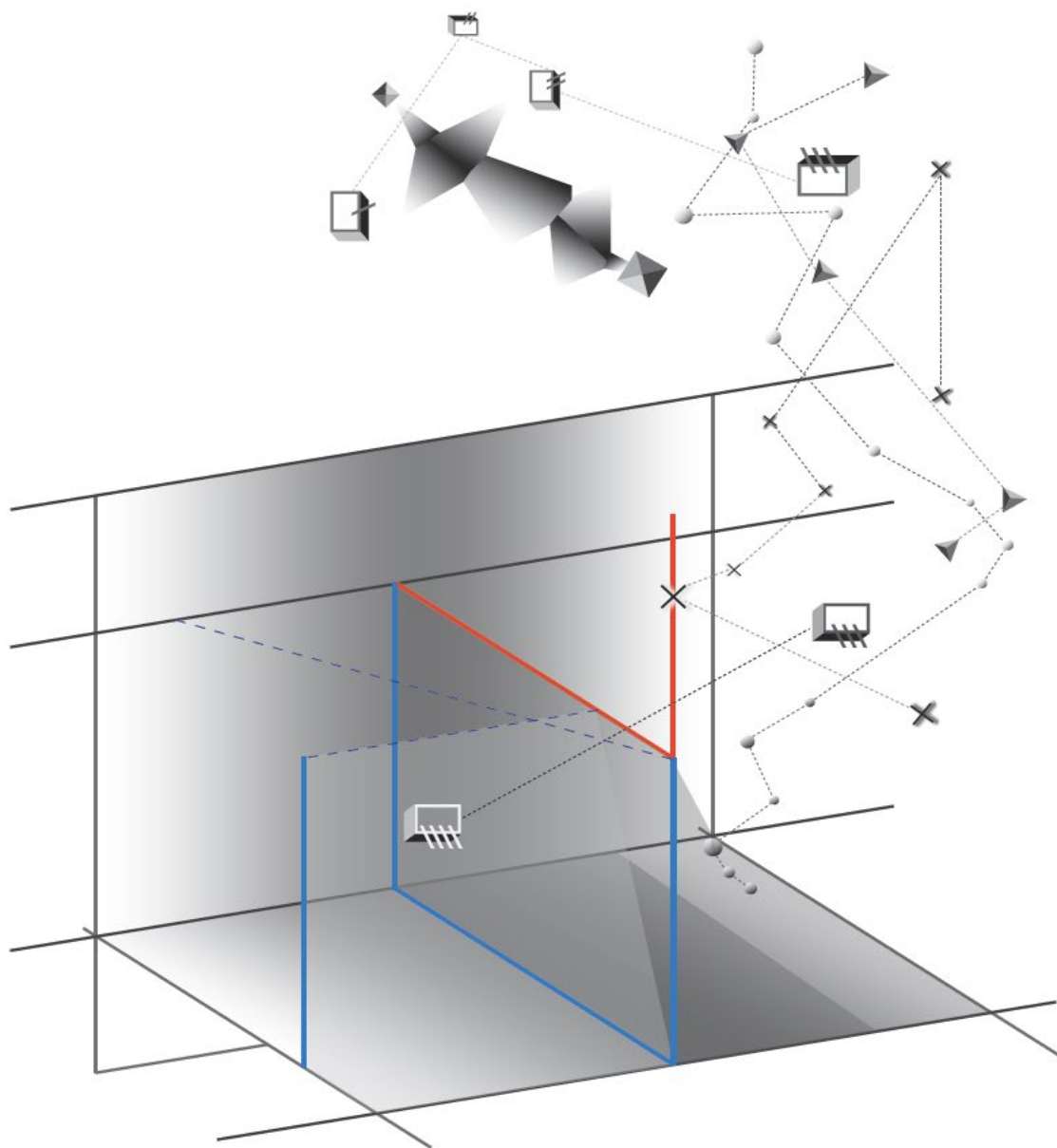


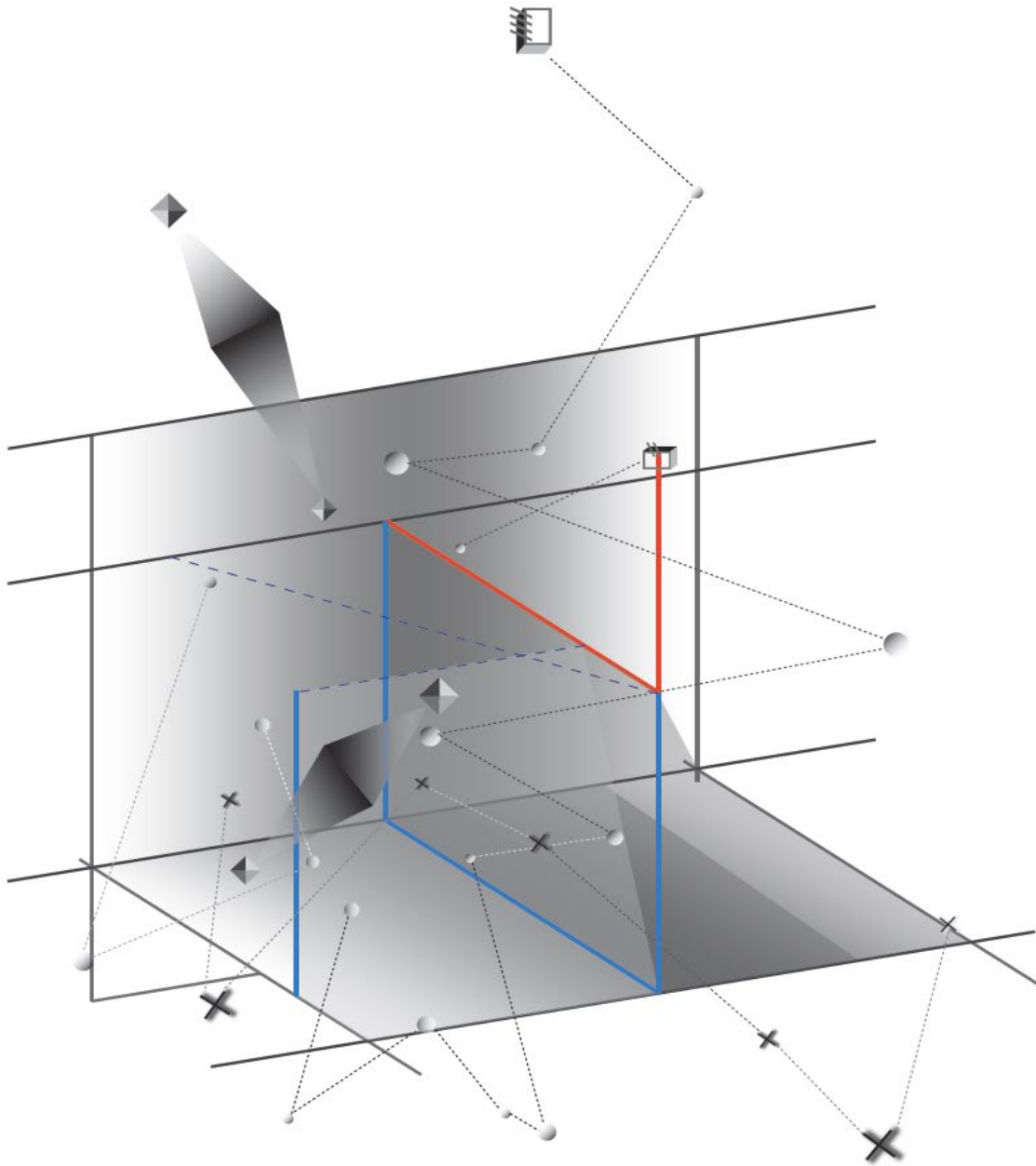


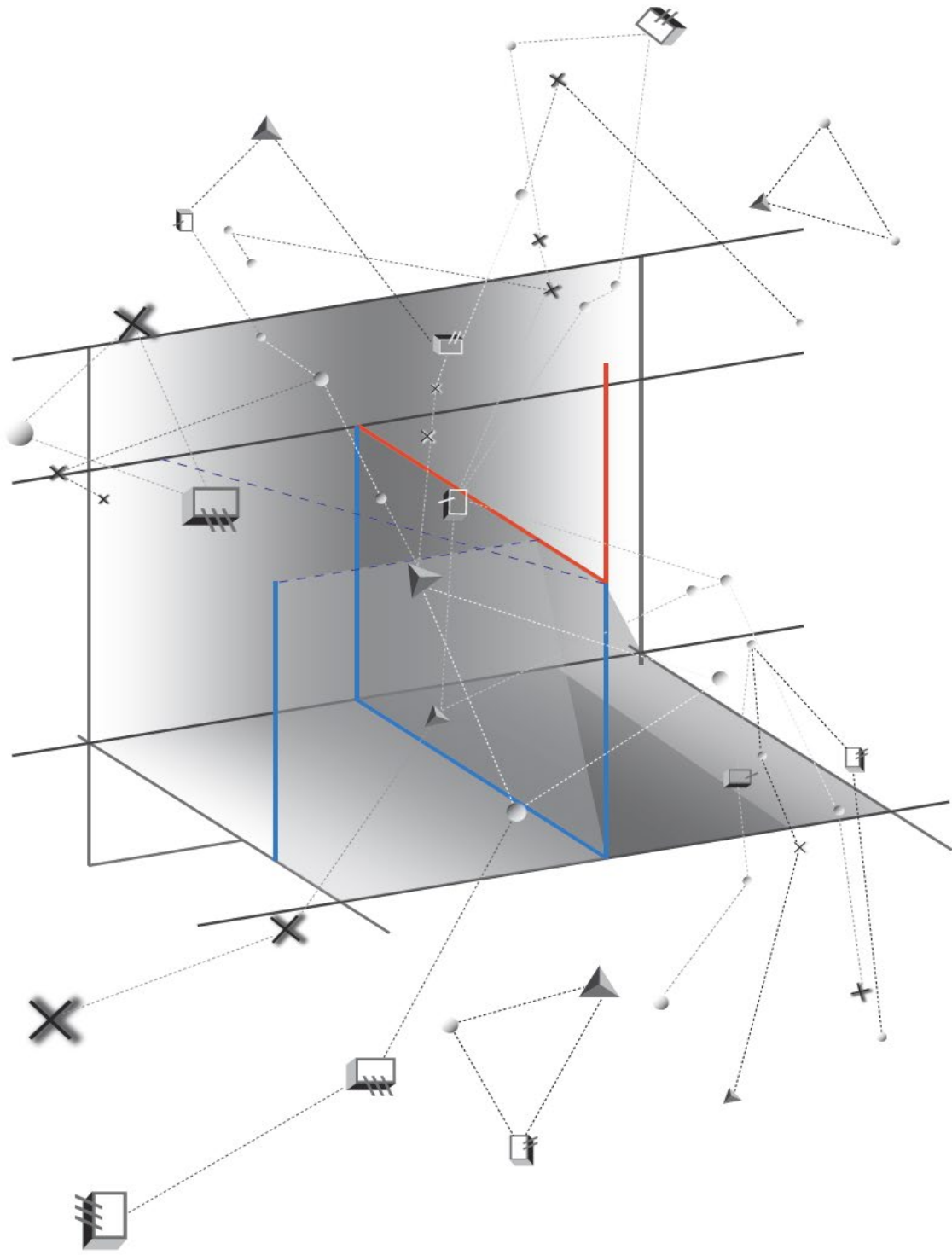


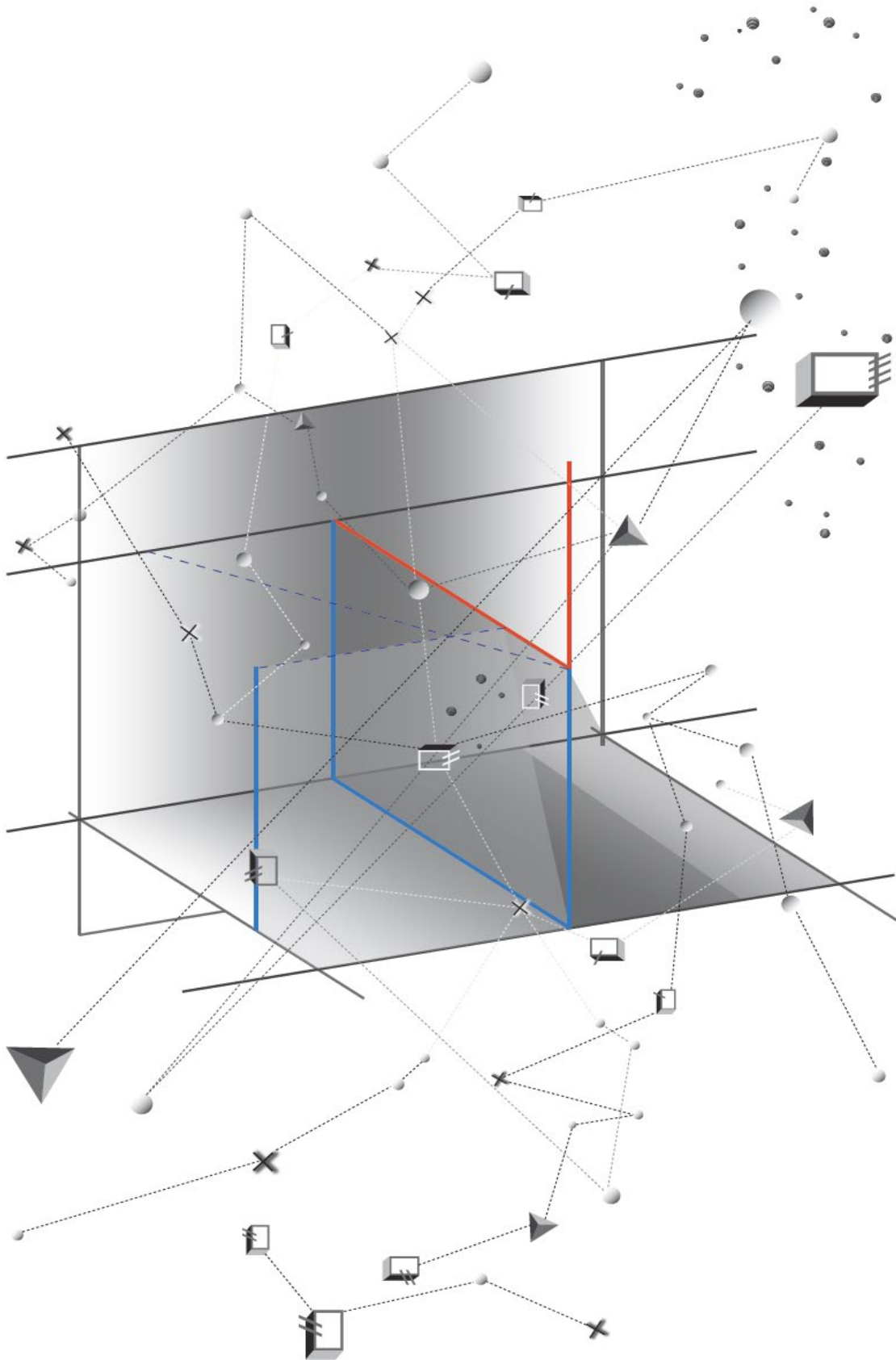


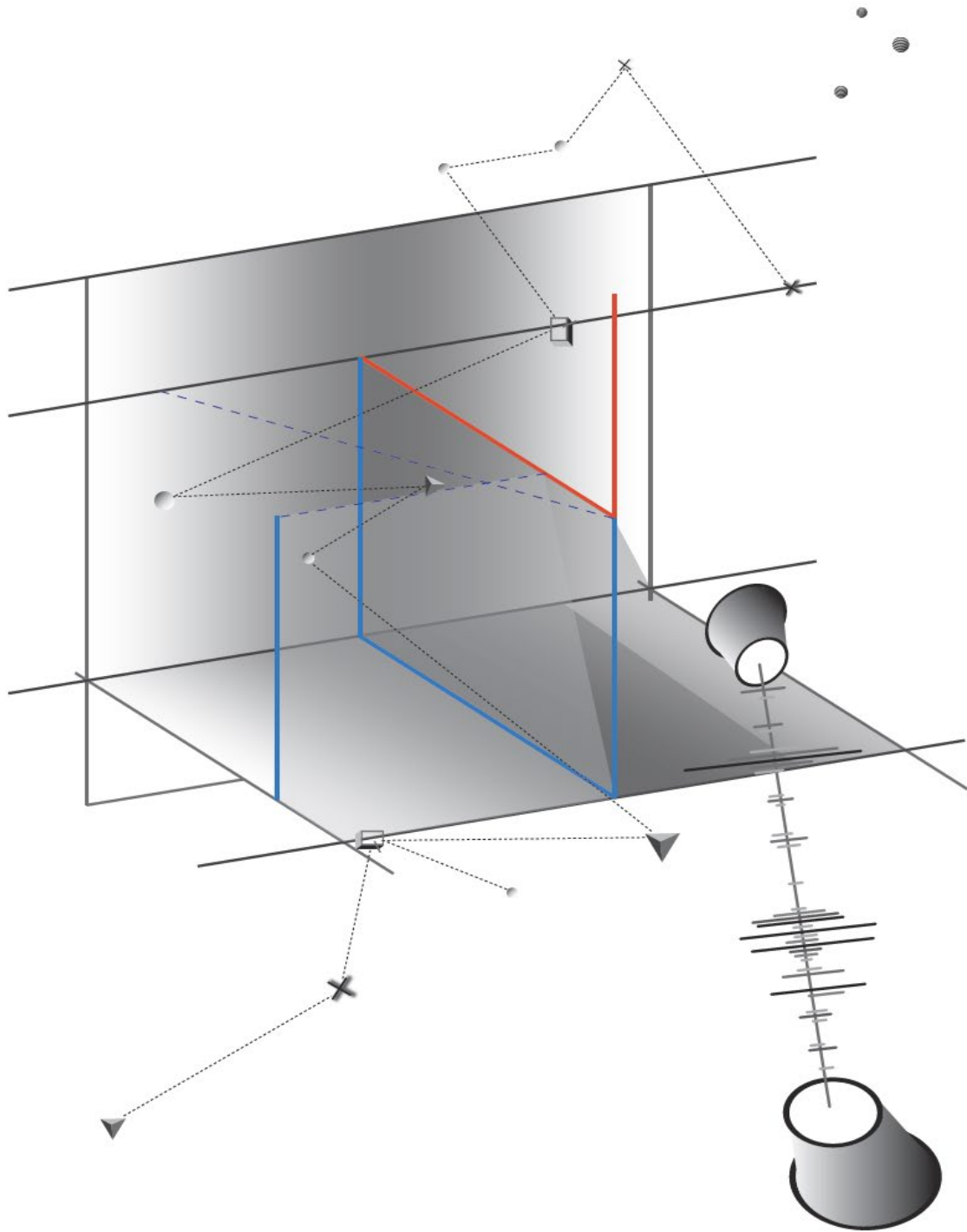


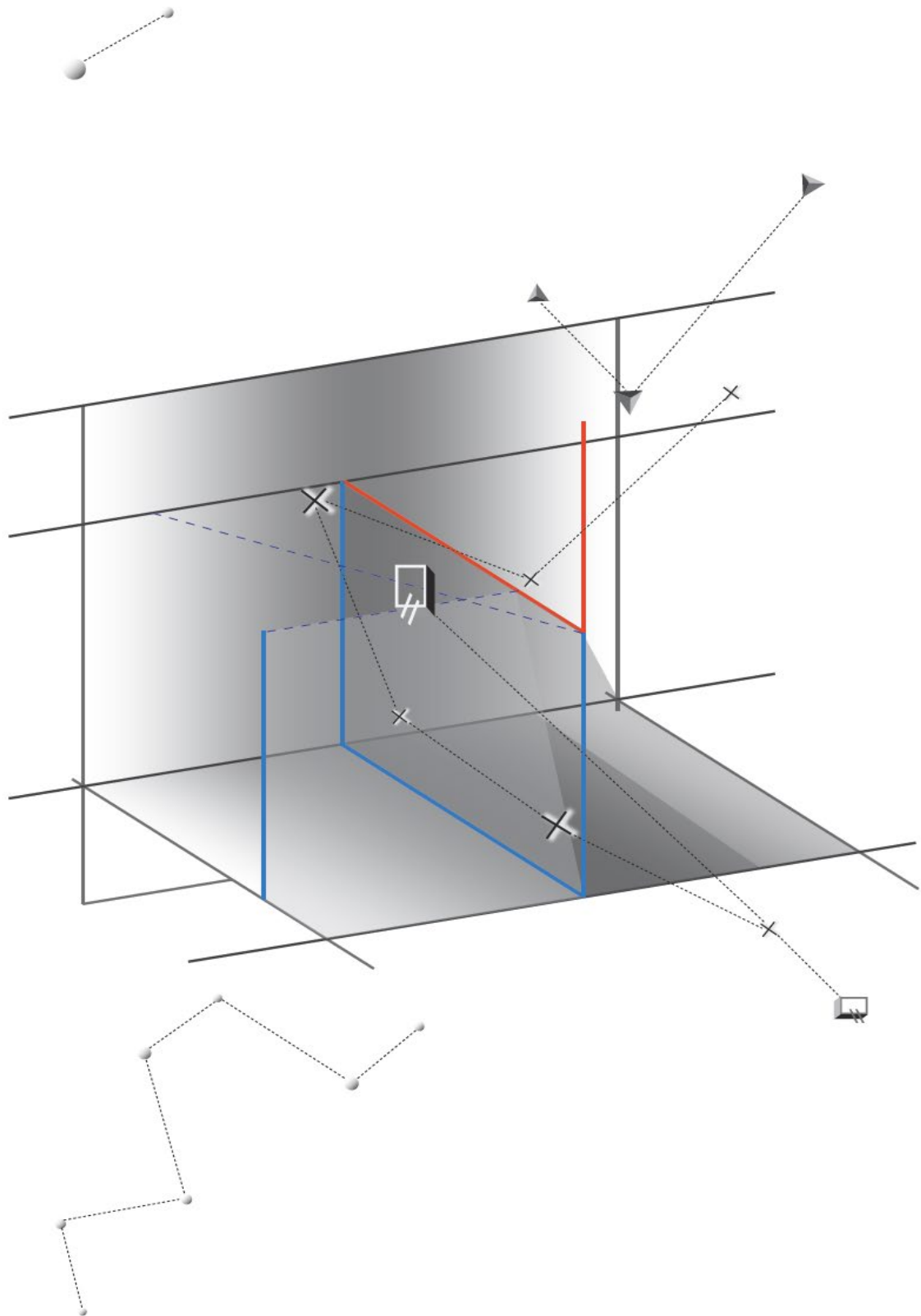


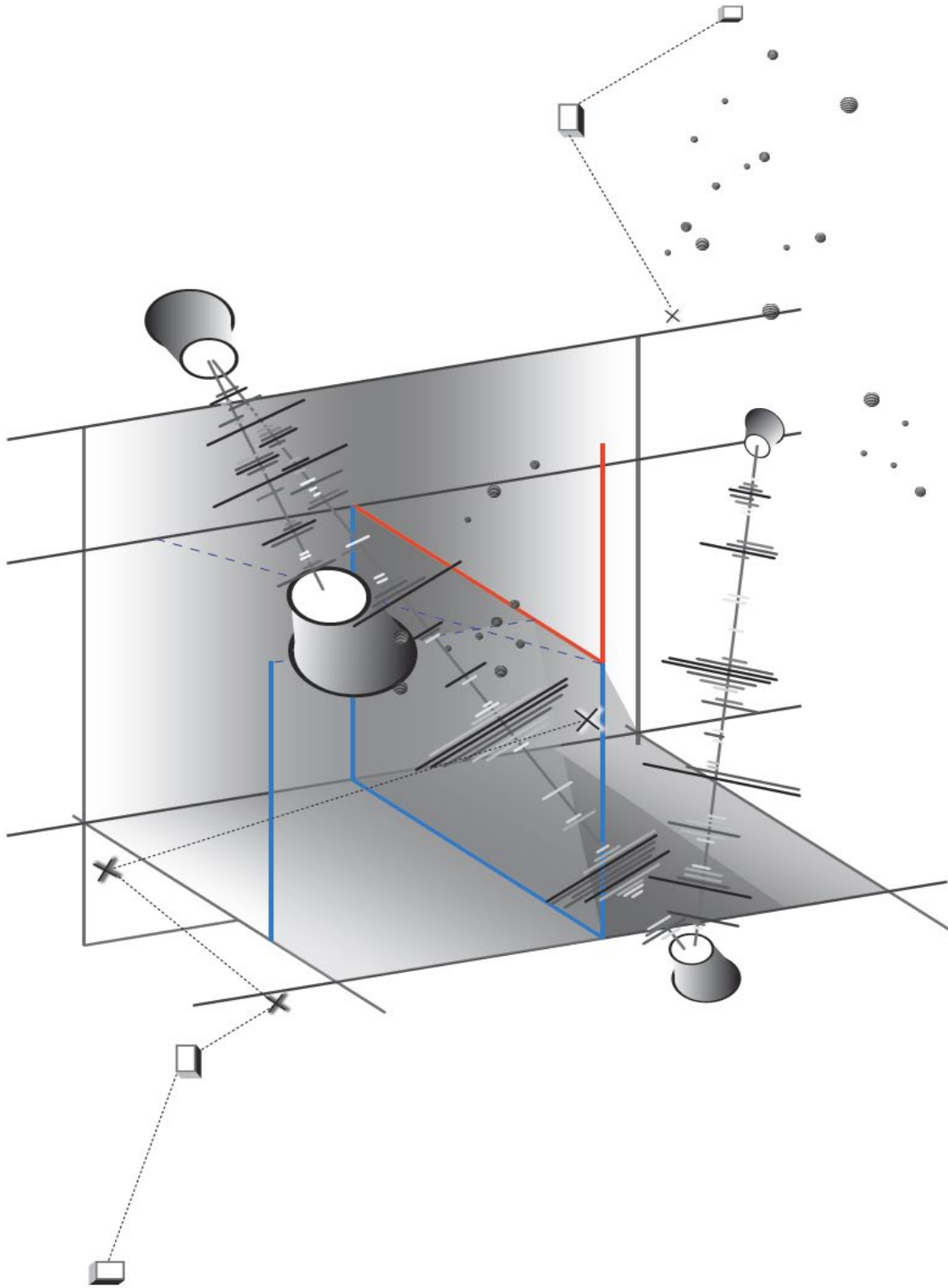


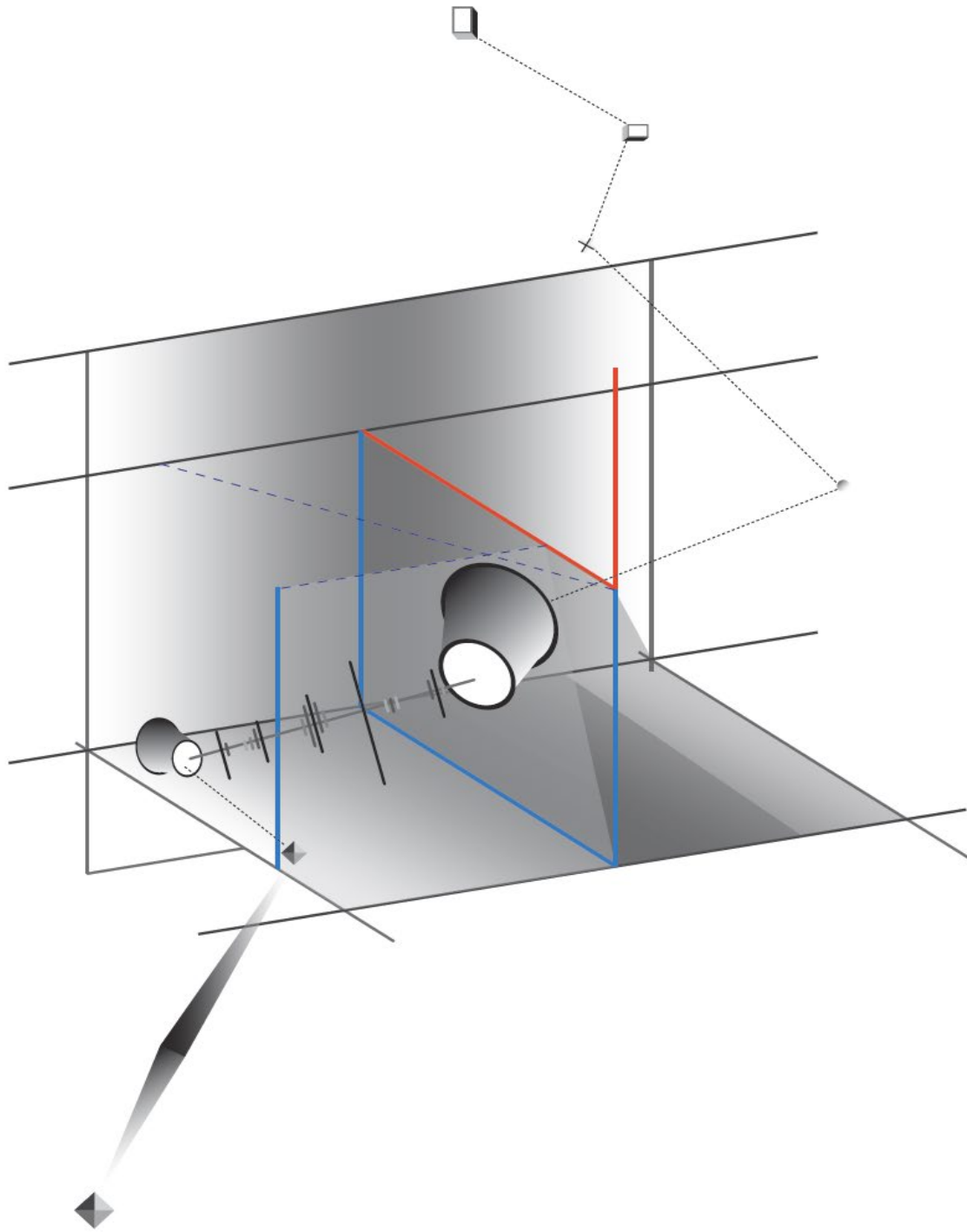












PRIS-MA (2020) - For Amplified Modified Pierrot Quintet

Instrumentation: piccolo, violin, Bb bass clarinet, violoncello, and piano.

This composition has been written using as its main concept the positioning and light emitted by the Orion and Cancer constellations.^{9,10} The arrangement of each texture is crucial to the understanding of the piece because it reflects the relative proportional interactions between the main positional stars used as referential points for the compositional framework.

Given the physical nature of the light emitted by the above-described constellations, the prism method of refraction and bending was chosen to better describe how the different portions of electromagnetic waves behave and become perceptible for the human eye.¹¹ These waves, while naturally inaudible to the human ear, are transformed in the piece, by assigning a range between 20-20,000 Hz to each color refraction, to fit the needs of the human hearing range, thus becoming perceptible. It is important to mention that there are specific portions of the audible spectrum assigned to a certain instrument, but rather, the acoustic transformation is achieved by the intertwinement of different textures and their respective dynamic transformations.

In this composition the amplification method aims to resemble the bending of light waves through a prism via sound alteration from a specific viewpoint by adding a slight reverberation. Refraction, on the other hand, is represented by the instrumental setup, which

⁹ Kimm Ann Zimmerman, and Daisy Dobrijevic, Orion Constellation: Facts, location and stars of the hunter.

¹⁰ Google, Cancer Constellation, Constellation Guide.

¹¹ Google, 2.3 Refraction of Light through a Prism.

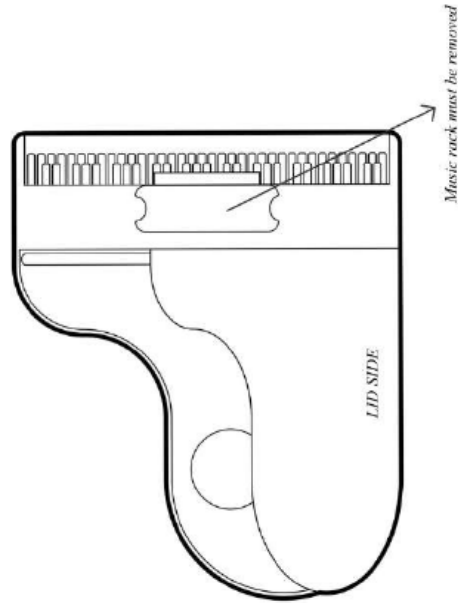
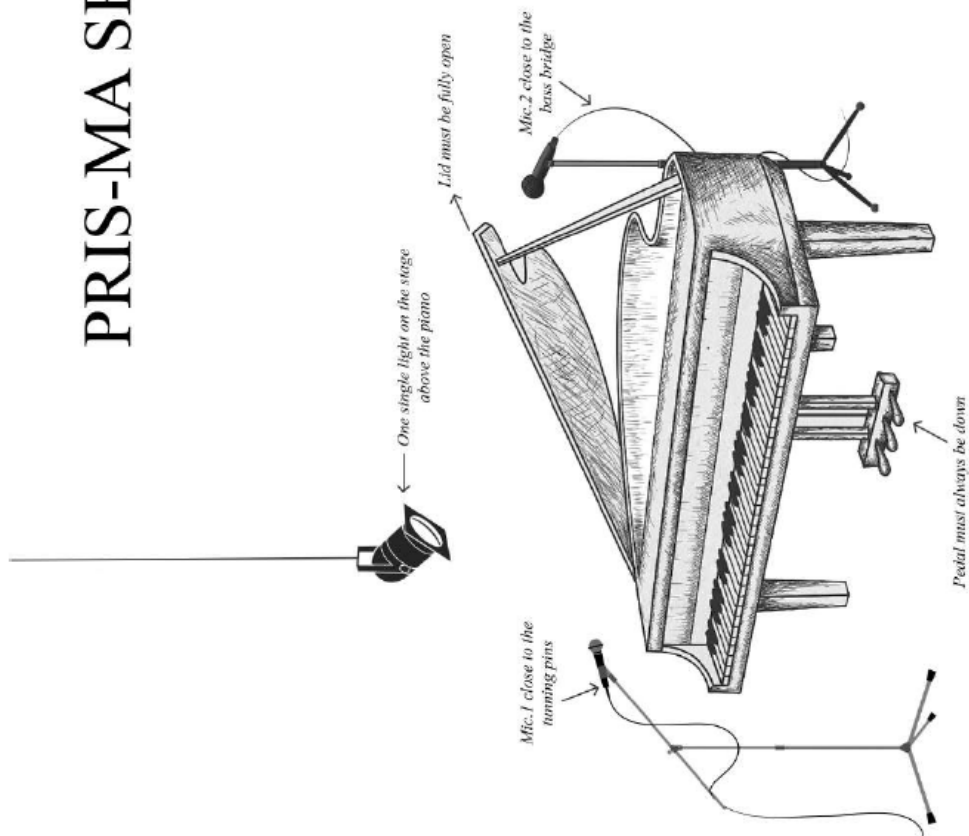
looks for a single sound source (inside the piano) that breaks in multiple frequencies but with a similar origin, such as it occurs in a prism.

PRIS-MA

(10' 33" approx.)

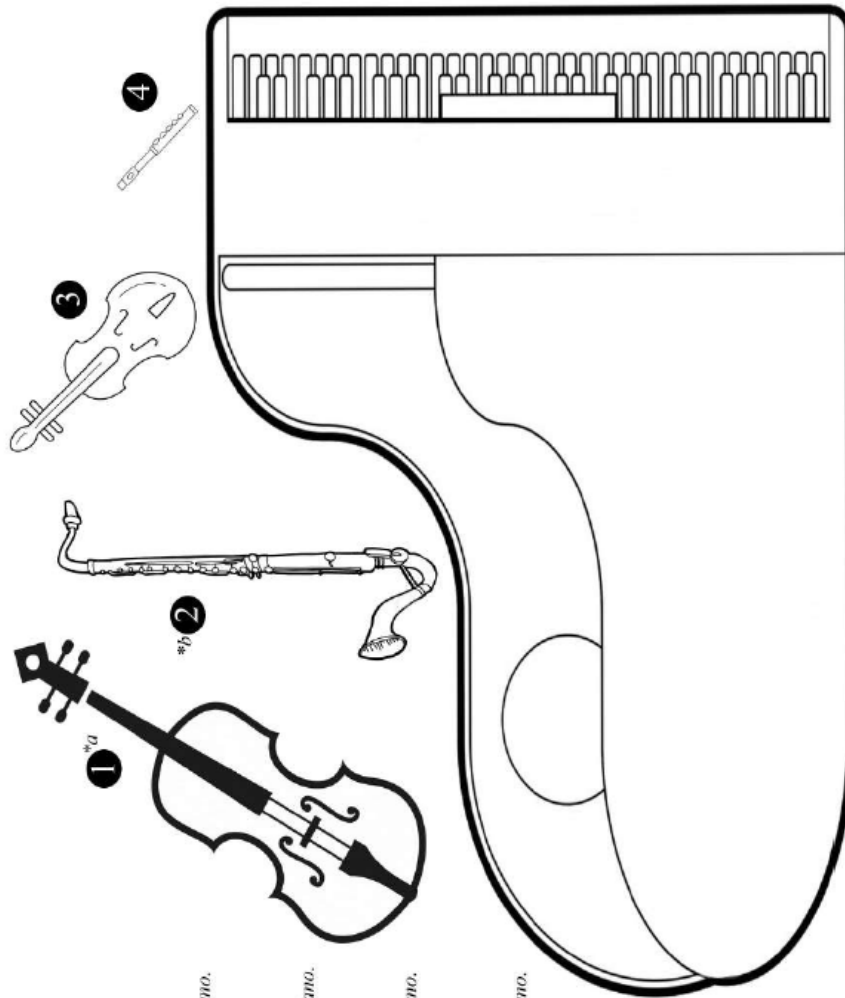
Composer: Eduardo Orea
2020

PRIS-MA SET UP: Part I



- ◆ The piano must be as close as possible to the edge of the stage.
- ◆ The curtains must be low enough that the audience can only see the hands of the pianist and the other performers' lower body.
- ◆ There must be at least two speakers on each side of the stage. They must be placed so that the curtain is behind them, this will make the sound be better projected towards the audience.
- ◆ The rest of the instruments must remain hidden behind the curtain and the piano lid at all times - before, during and after the performance.

PRIS-MA SET UP: Part II



1. The cello must be as close as possible to the bass bridge.
Its sound must be projecting or leaning towards this region of the piano.
2. The bass clarinet must be as close as possible to the soundboard.
Its sound must be projecting or leaning towards this region of the piano.
3. The violin must be as close as possible to the treble bridge.
Its sound must be projecting or leaning towards this region of the piano.
4. The piccolo must be as close as possible to the treble strings.
Its sound must be projecting or leaning towards this region of the piano.

^{*1} Use endpin to elevate instrument as much as it is comfortably possible. It is important to try to hide the instrument behind the piano.

^{*2} Do not use endpin, rather, use strap. This will help hide the instrument better.

PRIS-MA

Eduardo Orea - 2020

Performance Notes - Part I




◆GENERAL

- String and wind instruments must be as close as possible to the microphones to increase amplification.
- The duration of each system (page) is around 31 seconds.

◆PITCH

- Chromatic succession is not to be played.
- Alternate (balance) between accidentals in any order (♭-♯-♭)

◆ALIGNMENT

- Square brackets delimit instrument register. The middle of the square bracket indicates the approximate center of the register.
- Dashed line cues indicate that two or more textures have exact alignment, their onset is the same.
- Dotted line cues indicate that two or more textures have inexact alignment, they are offset. They can also show that offset textures are played sequentially.

PRIS-MA

Performance Notes - Part II























ARTICULATIONS

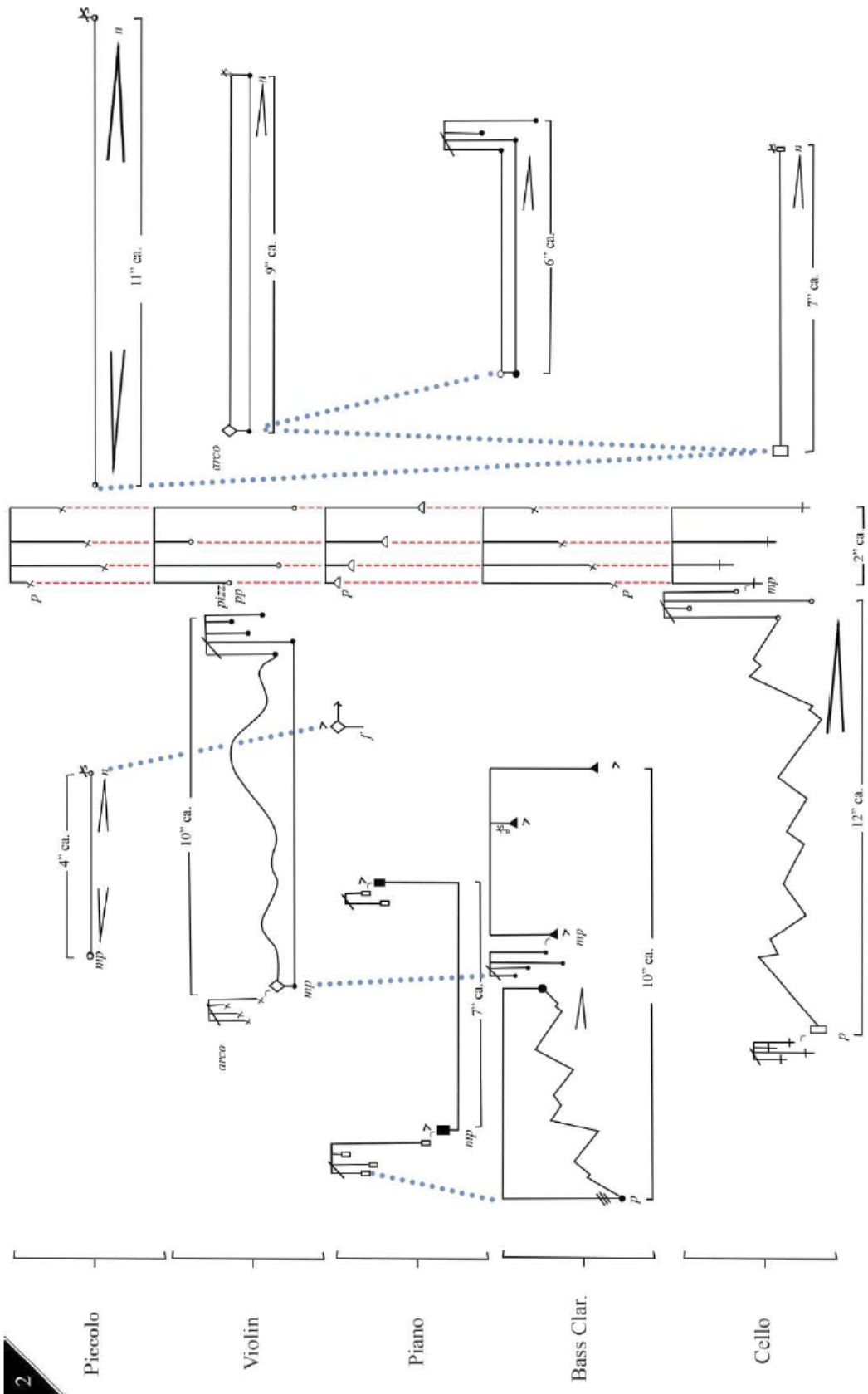
◆PICCOLO	◆BASS CLAR.	◆VIOLIN & CELLO	◆PIANO
<p>→ "Regular pitch"</p> <p>→ Airy sound (<i>molto vibrato</i>)</p> <p>→ With flutter tongue</p> <p>→ Added gliss</p> <p>→ Flutter tongue + normal sound</p> <p>→ Added gliss</p> <p>→ Slap tongue</p> <p>→ Key clicks + blown air through gesture</p> <p>→ Multiphonic (sing chosen interval below played note)</p>	<p>→ "Regular pitch"</p> <p>→ Airy sound (<i>molto vibrato</i>)</p> <p>→ With flutter tongue</p> <p>→ Added gliss</p> <p>→ Flutter tongue</p> <p>→ Added gliss</p> <p>→ Slap tongue</p> <p>→ Key clicks + blown air through gesture</p> <p>→ Throat harmonic (sing above the played note)</p>	<p>→ Bowing for long gestures is: <i>col legno molto sul pont. tratto.</i></p> <p>→ Natural harmonic</p> <p>→ Muted strings</p> <p>→ Artificial harmonic</p> <p>→ Added gliss</p> <p>→ Scratch tone</p> <p>→ Bowing for short gestures is: <i>col legno molto sul pont. battuto</i></p> <p>→ Circular bowing (moving from pont. to tasto). According to figure</p> <p>→ RH Pizzicato</p> <p>→ LH Pizzicato</p> <p>→ Silent fingering</p>	<p>→ Pedal must always be down for all effects and textures</p> <p>→ "Regular pitch"</p> <p>→ Muted strings</p> <p>→ Hit piano parts</p> <p>→ Pins</p> <p>→ Treble bridge</p> <p>→ Lid Prop</p> <p>→ Soundboard</p> <p>→ Bridge</p> <p>→ Hit strings (with mallets). According to verbal indication</p> <p>→ Harmonics (by placing fingers on the strings)</p> <p>→ Nail sounds</p> <p>→ Run nail throughout the length of the string</p>

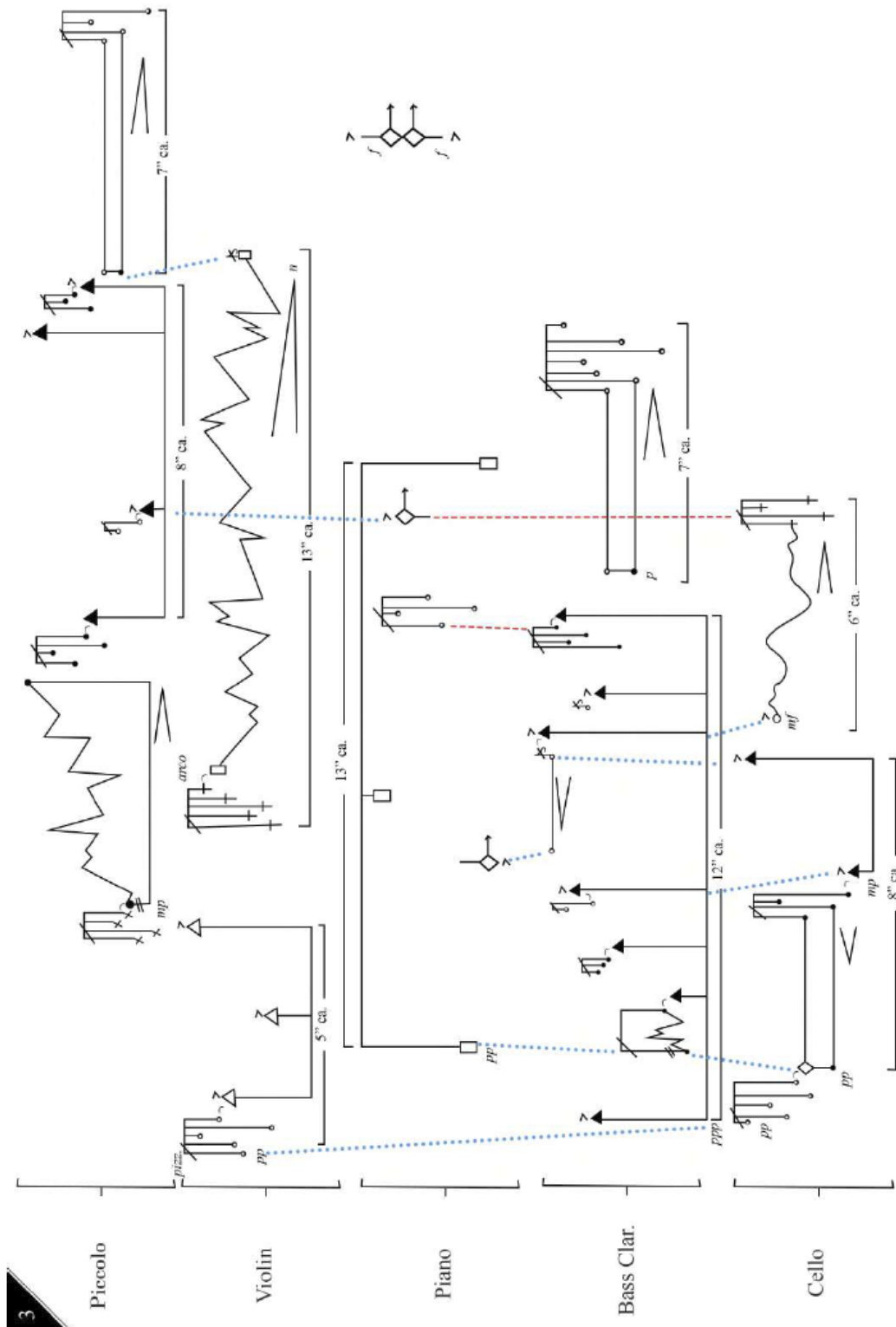
PRIS-MA

Performance Notes - Part III

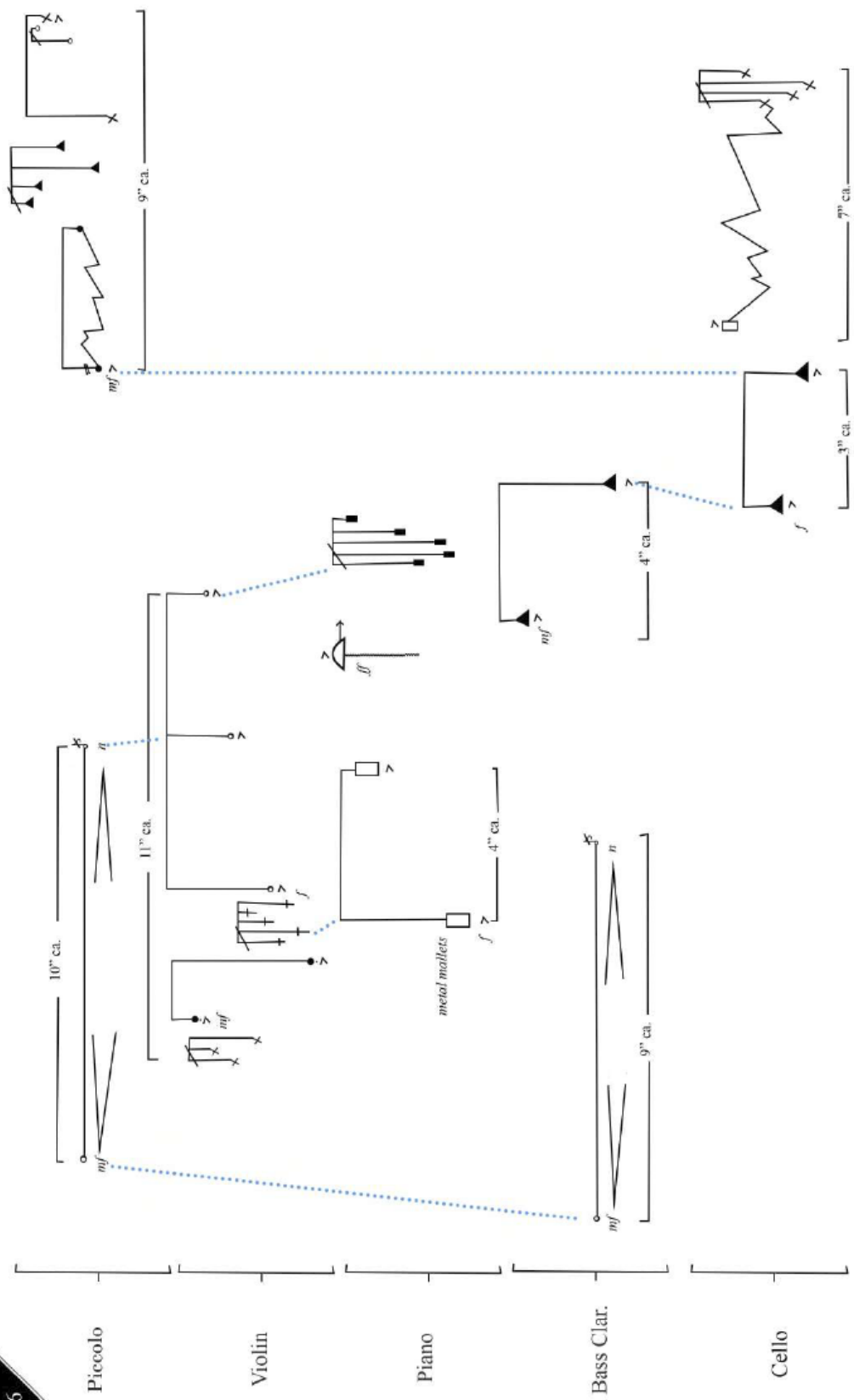
ARTICULATIONS

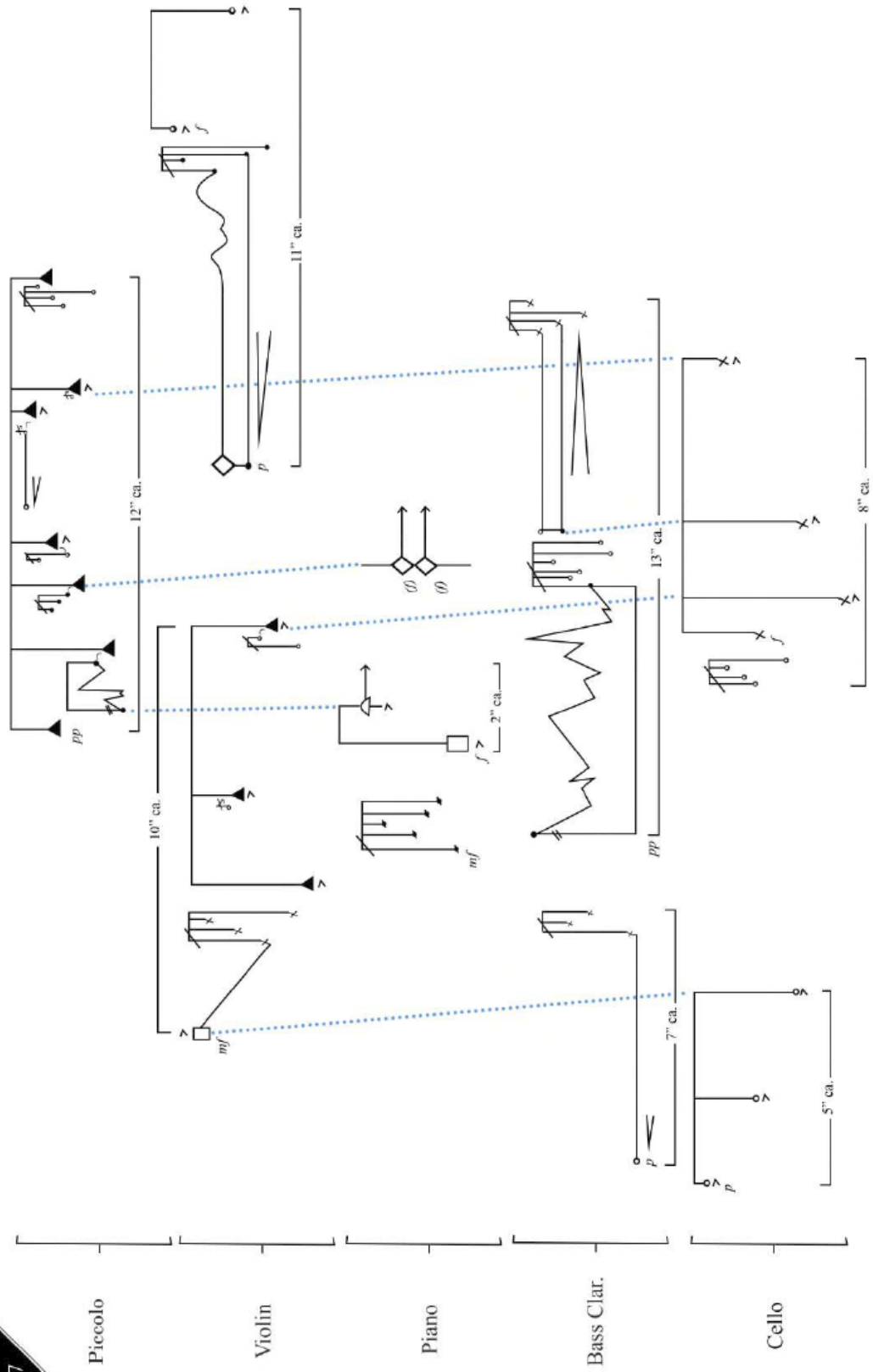
<p>◆ PICCOLO</p> <p>→  = Airy sound (<i>molto vibrato</i>) Play a combination of air, mostly, and sound when this gesture appears.</p> <p>→  = With flutter tongue = Added gliss</p> <p>* When this gesture appears as an appoggiatura, articulate every single dotted pitch.</p> <p>* When this gesture appears with a glissando, articulate only the first dotted pitch.</p> <p>→  = Flutter tongue + normal pitch = Added gliss</p> <p>* When this gesture appears as an appoggiatura, articulate the initial and closing dotted pitch.</p> <p>* When this gesture appears with a glissando, articulate only the first dotted pitch.</p>	<p>◆ BASS CLAR.</p> <p>→  = Airy sound (<i>molto vibrato</i>) Play a combination of air, mostly, and sound when this gesture appears.</p> <p>→  = With flutter tongue = Added gliss</p> <p>* When this gesture appears as an appoggiatura, articulate every single dotted pitch.</p> <p>* When this gesture appears with a glissando, articulate only the first dotted pitch.</p> <p>→  = Flutter tongue + normal pitch = Added gliss</p> <p>* When this gesture appears as an appoggiatura, articulate the initial and closing dotted pitch.</p> <p>* When this gesture appears with a glissando, articulate only the first dotted pitch.</p>	<p>◆ VIOLIN & CELLO</p> <p>→  = Natural harmonic →  = Muted strings →  = Artificial harmonic →  = Added gliss →  = Scratch tone</p> <p>* When a gesture appears in combination with a gliss., it must be played in one string only and the register changes for this string.</p> <p>→  = Circular bowing (moving from pont. to tasto)..</p> <p>* The curvature indicates a change in register and bowing.</p>	<p>◆ PIANO</p> <p>→ Pedal must always be down for all effects and textures</p> <p>→  = Muted strings →  = Hit piano parts →  = Pins →  = Treble bridge →  = Lid Prop →  = Soundboard →  = Bridge</p> <p>→  = Hit strings (with mallets). According to verbal indication</p> <p>→  = Harmonics (by placing fingers on the strings)</p> <p>→  = Nail sounds ↳ = Run nail throughout the length of the string</p>
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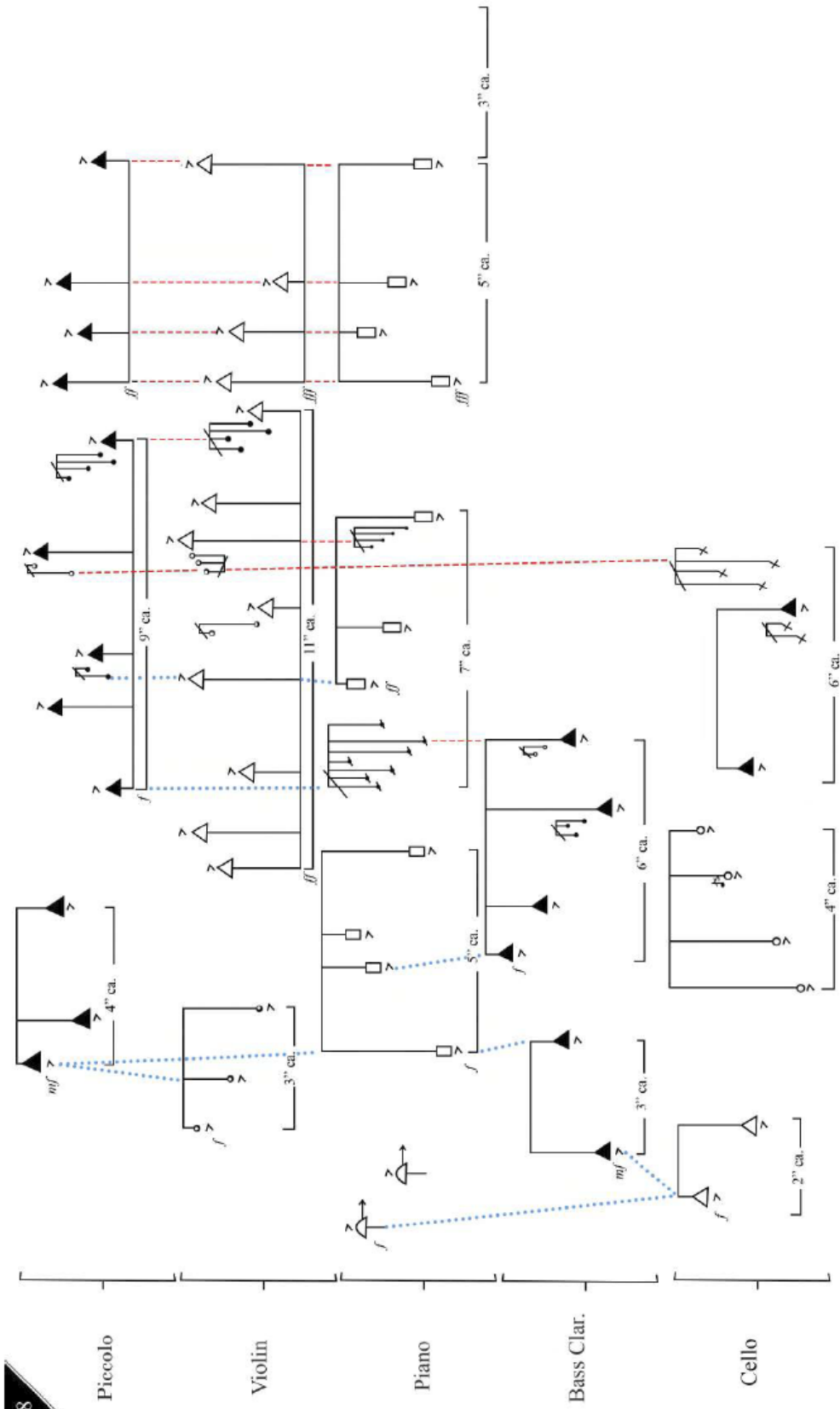


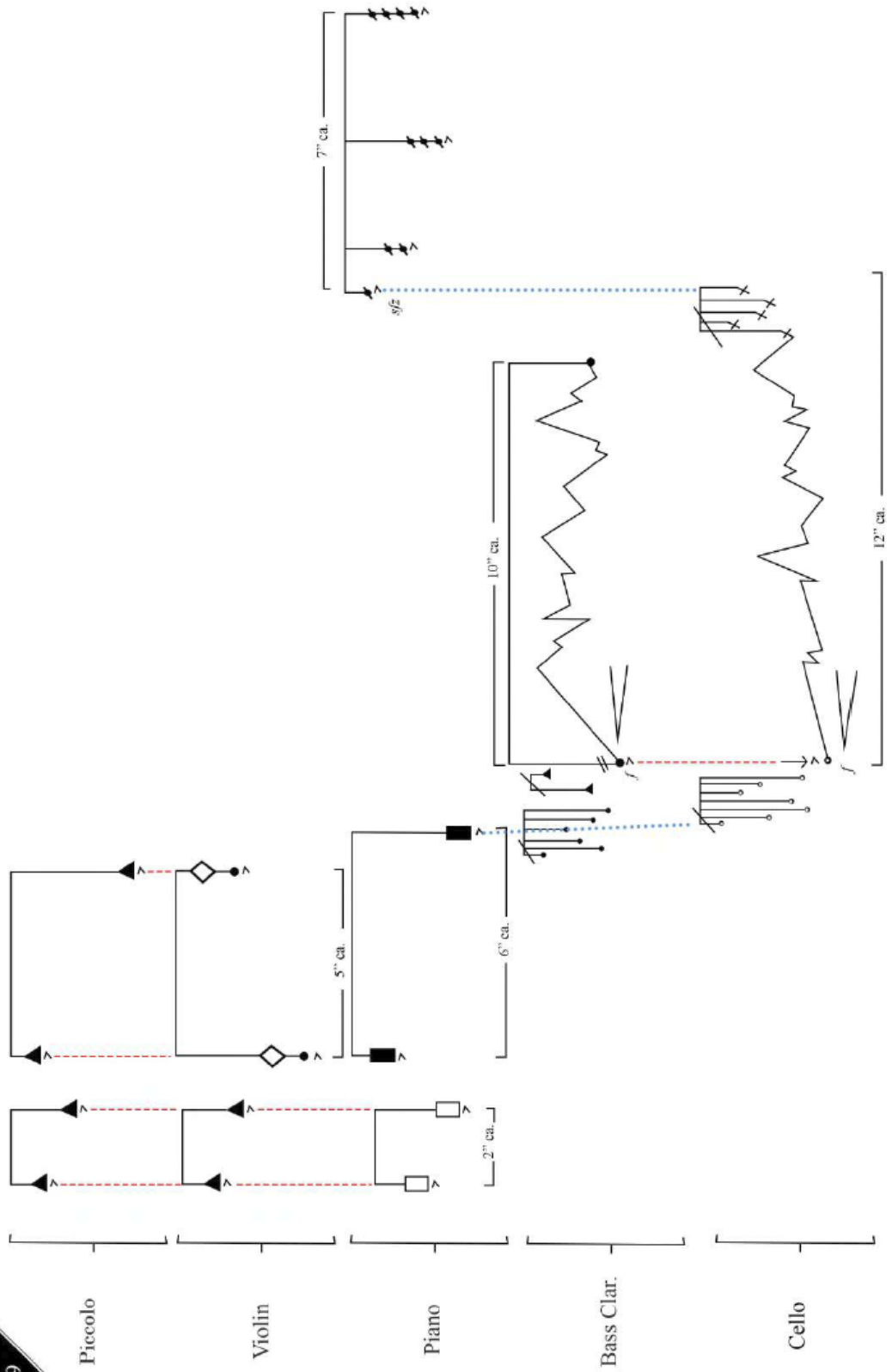


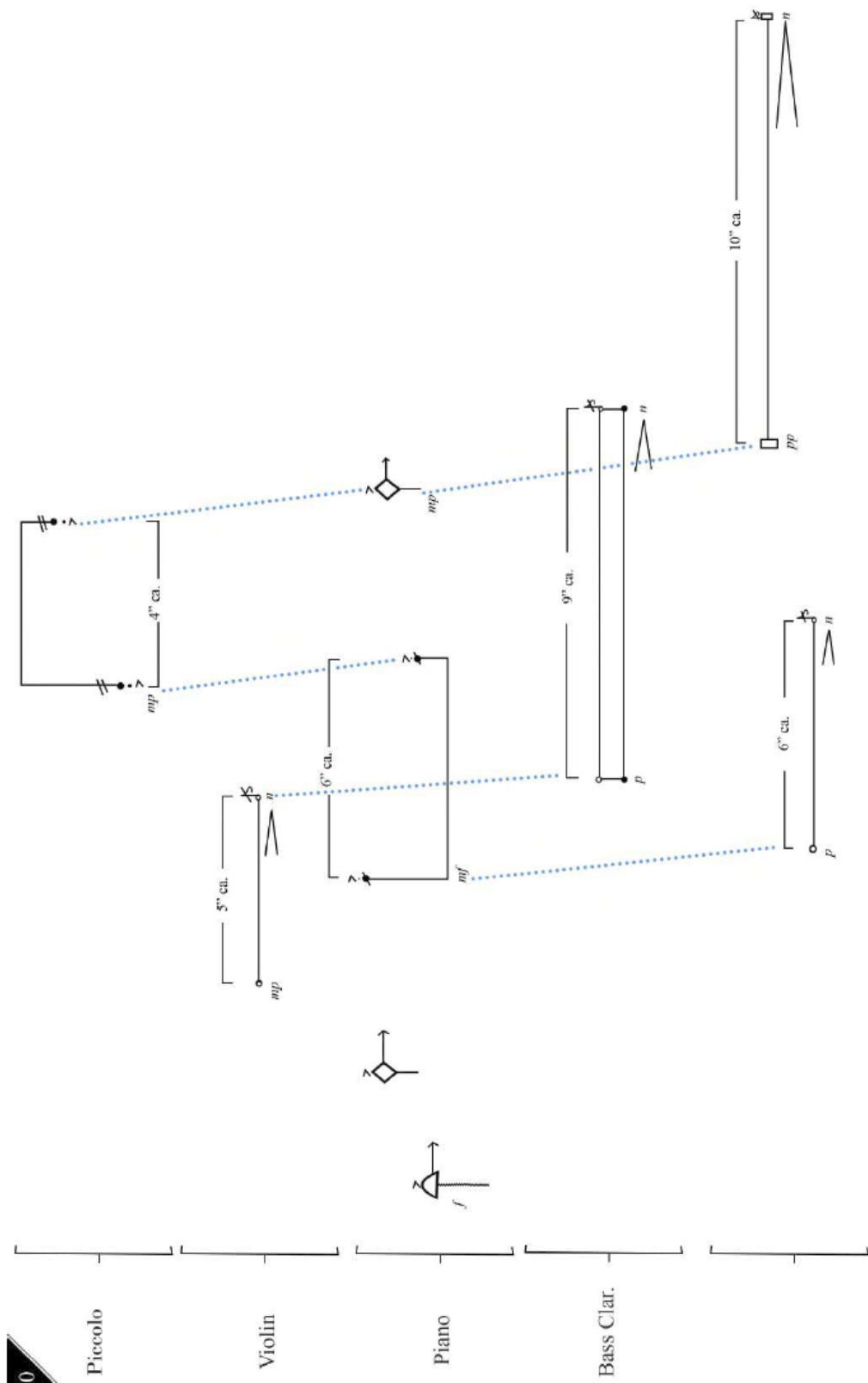
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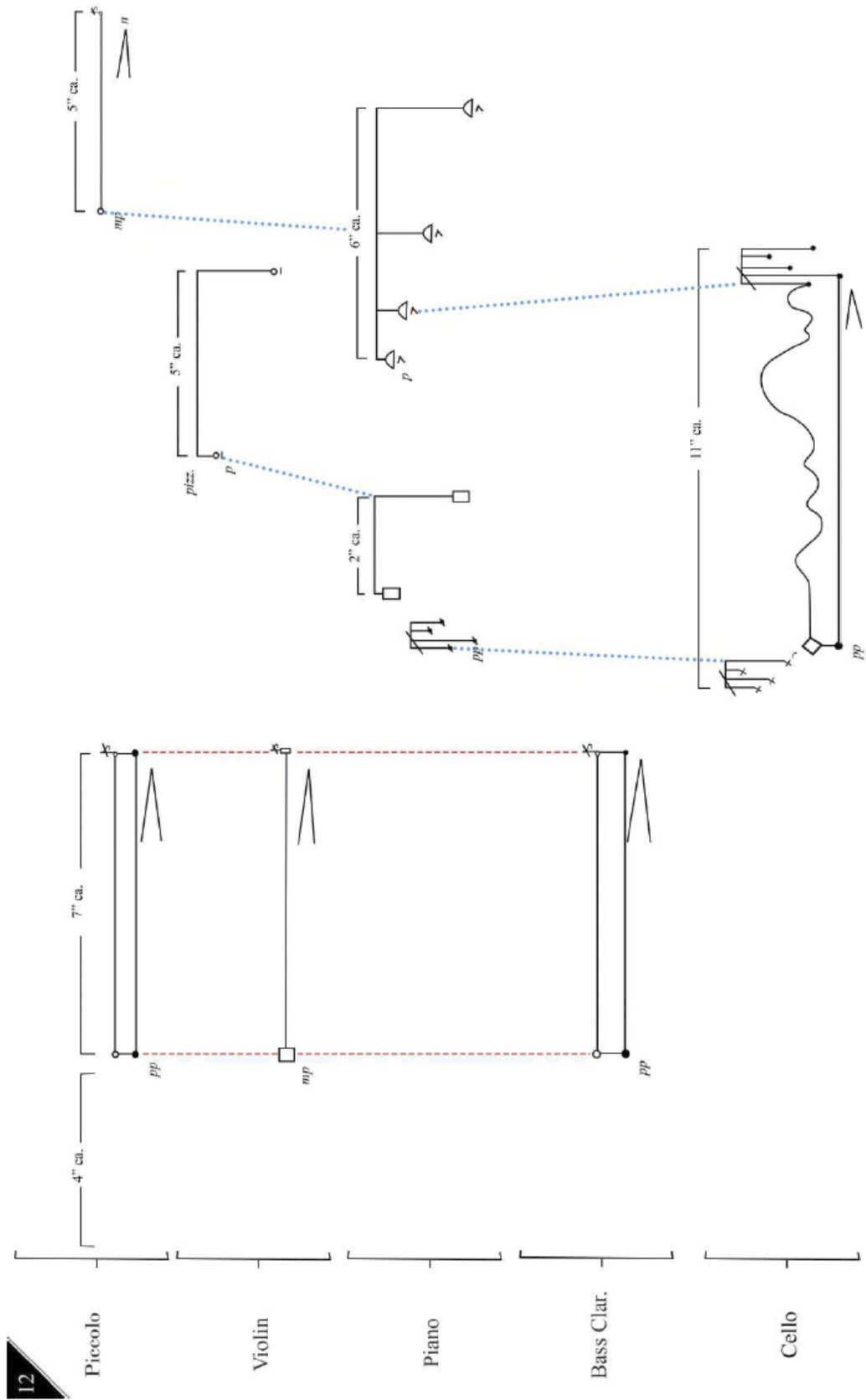


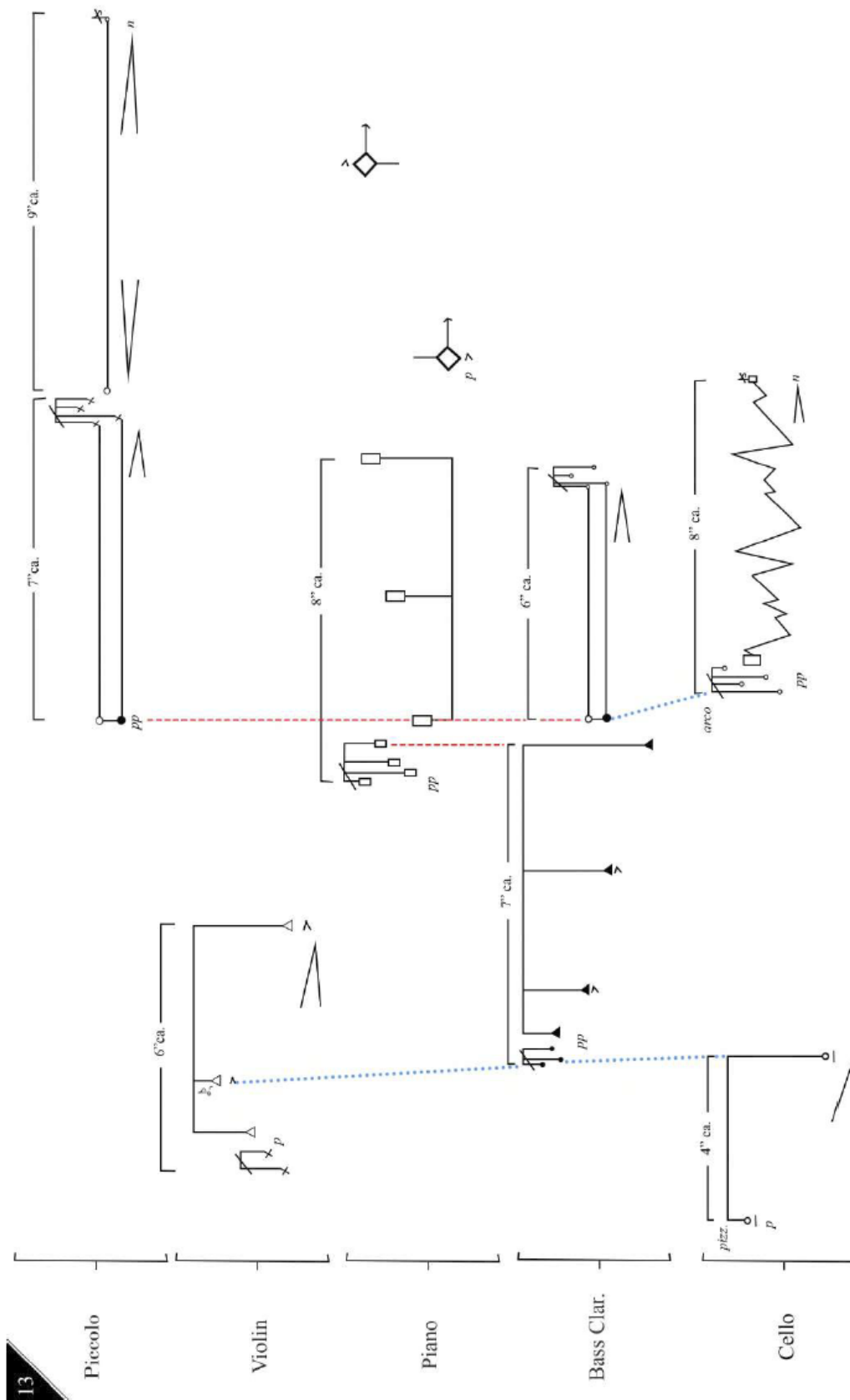


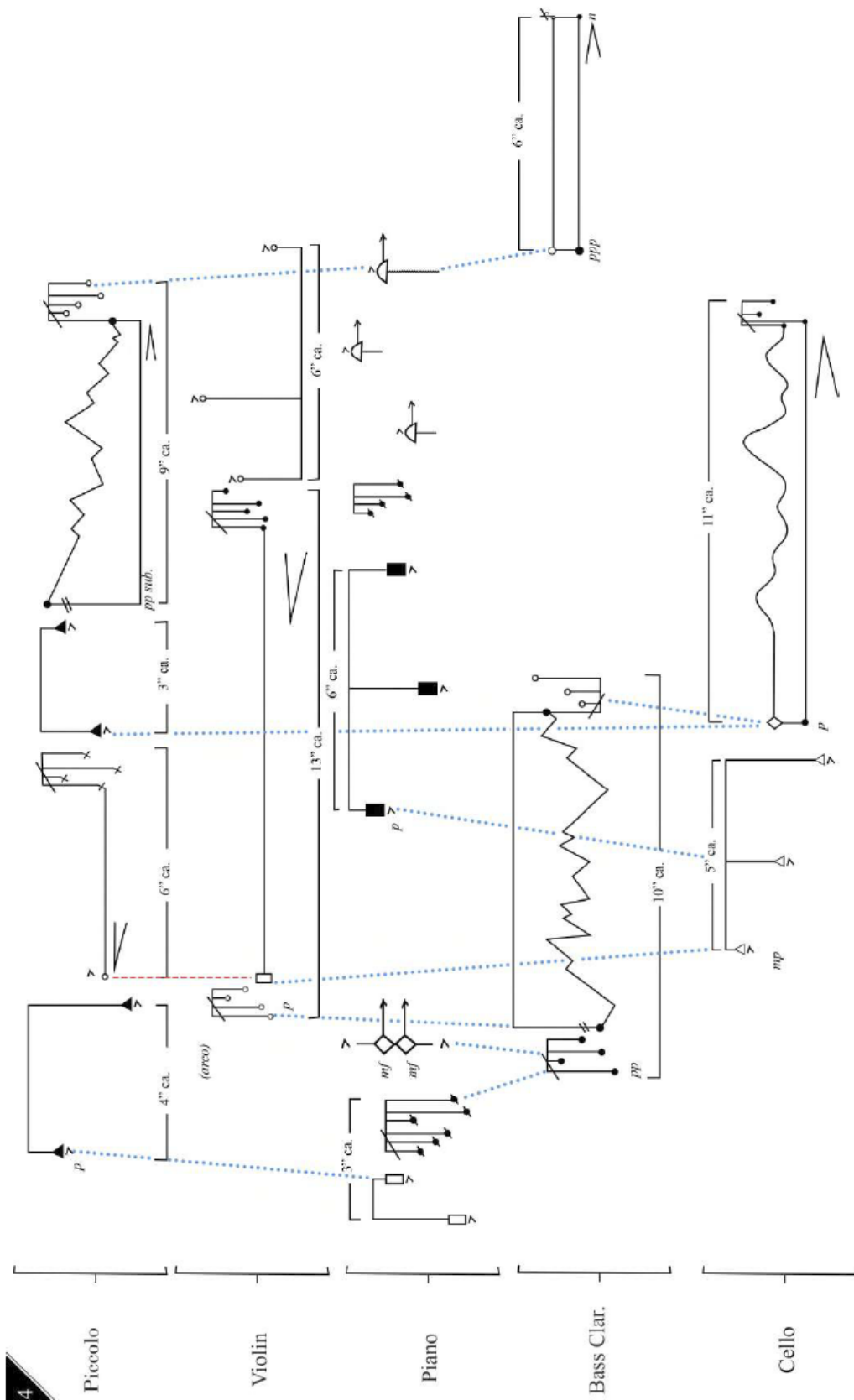


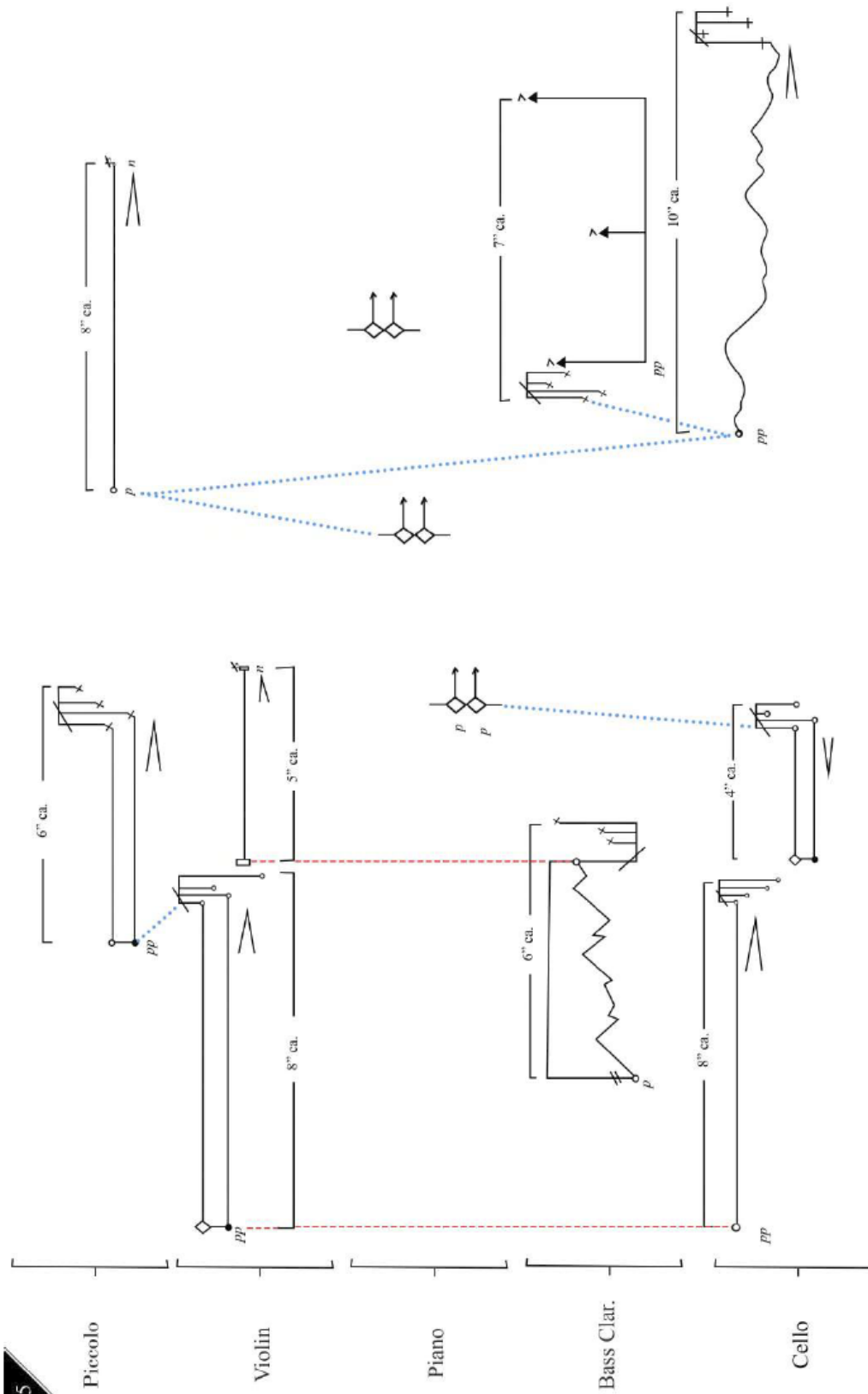


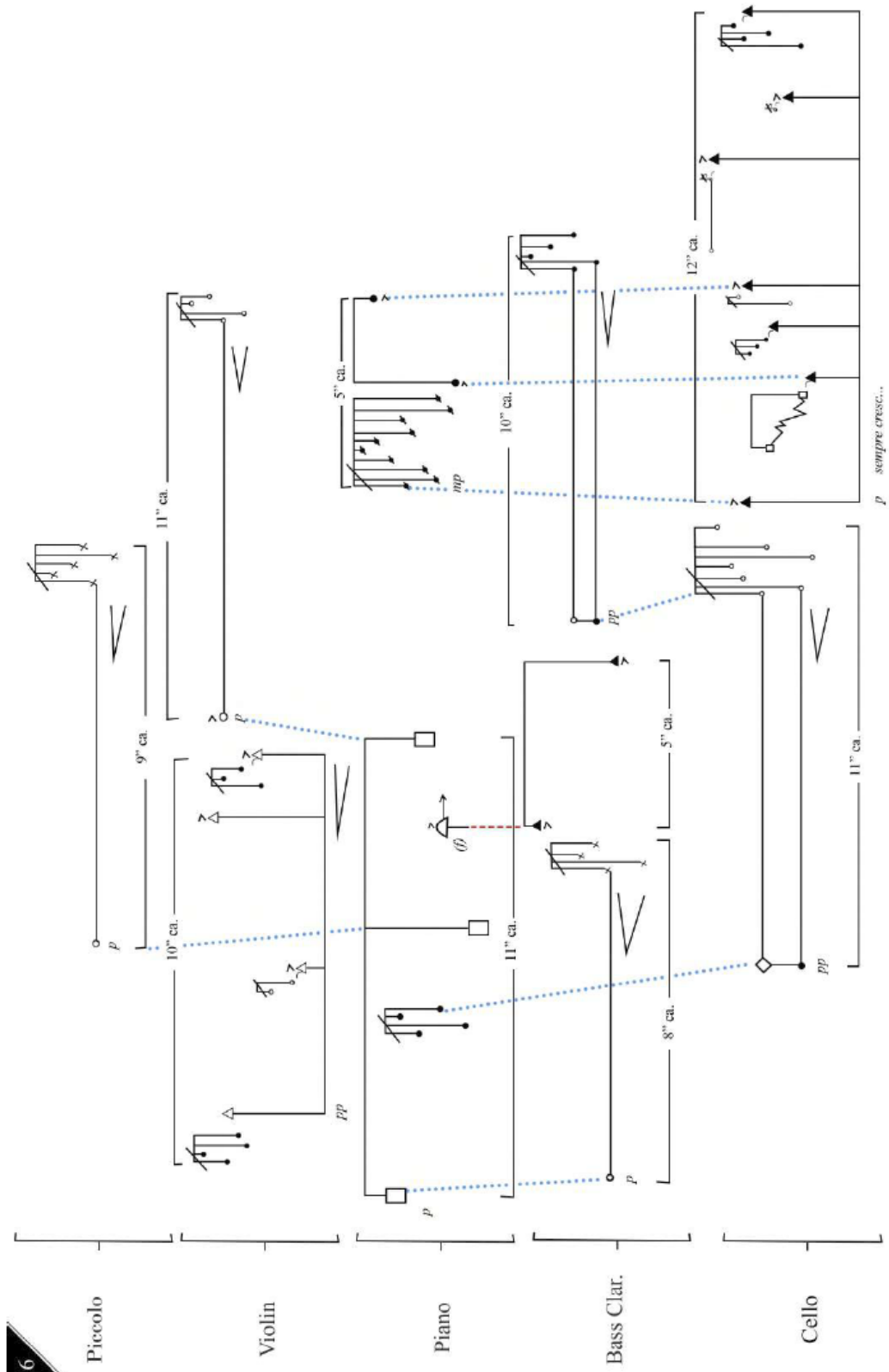












Piccolo
13" ca.
5" ca.
5" ca.

Violin
5" ca.
9" ca.

Piano
3" ca.
6" ca.
8" ca.

Bass Clar.
13" ca.

Cello
9" ca.
12" ca.

mp sempre cresc...
mp sempre cresc...
mp sempre cresc...
mp sempre cresc...
mp sempre cresc...

f
pizz.
f
f
f

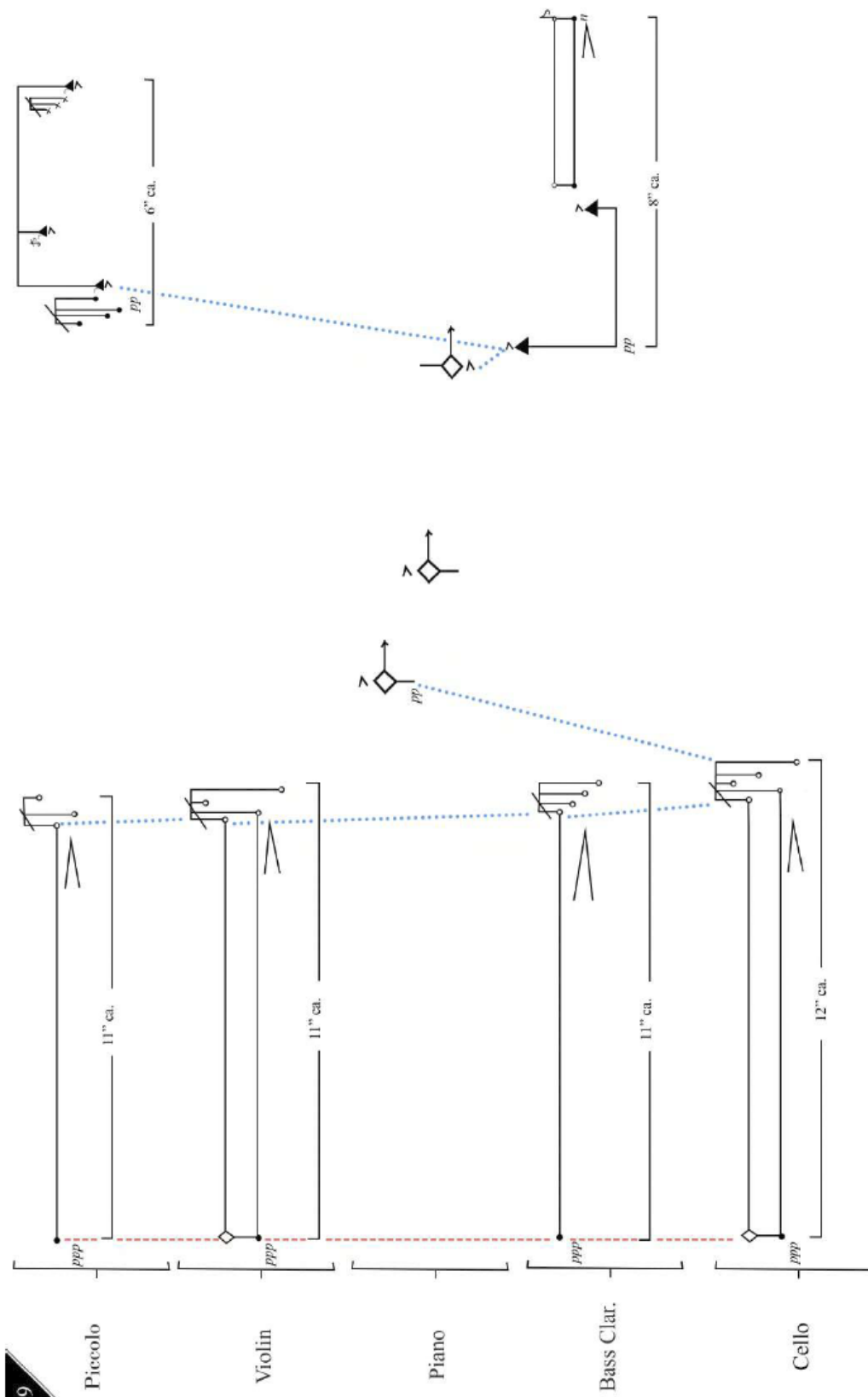
Musical score for five instruments: Piccolo, Violin, Piano, Bass Clar., and Cello. The score is divided into four systems, with measures grouped by brackets and labeled with durations: 5'' ca., 8'' ca., 6'' ca., and 7'' ca. Dynamics include *ff*, *pp*, *p*, and *arco*.

System 1 (5'' ca.): Piccolo (5 measures), Violin (5 measures), Piano (5 measures), Bass Clar. (5 measures), Cello (5 measures). Dynamics: *pp*, *pp*, *pp*, *pp*, *pp*.

System 2 (8'' ca.): Piccolo (8 measures), Violin (8 measures), Piano (8 measures), Bass Clar. (8 measures), Cello (8 measures). Dynamics: *ff*, *ff*, *ff*, *ff*, *ff*.

System 3 (6'' ca.): Piccolo (6 measures), Violin (6 measures), Piano (6 measures), Bass Clar. (6 measures), Cello (6 measures). Dynamics: *pp*, *pp*, *pp*, *pp*, *pp*.

System 4 (7'' ca.): Piccolo (7 measures), Violin (7 measures), Piano (7 measures), Bass Clar. (7 measures), Cello (7 measures). Dynamics: *p*, *arco*, *p*, *p*, *p*.



CHAPTER 3- Work for Sung or Spoken Voice

Sirius (2021) - For Amplified Vocal Ensemble

Instrumentation: 1 bass, 1 baritone, 1 tenor, 1 mezzo-soprano, 1 soprano, 1 high soprano
(mezzo-soprano can be replaced by a counter-tenor).

This piece has been composed using the Sirius constellation¹² contour as its main abstract criterion. First, it is presented a double three-layer projection in a two-dimensional plane as a substitute for the traditional staff, which is critical to better understand the structural design of the piece because it reflects the bi-focal configuration of each presented gesture. The Orthogonal Projection¹³ (3D- “staff”) defines the relationships between gestures in terms of length, duration, movement, dynamics, relative register, and orientation. The Orthogonal Projection matrix does not possess a specific facet that faces upward, hence allowing multiple orientations (see **Figure 3**). It is crucial to comprehend how the structural design of the piece consists of a four-dimensional diagrammatic perspective (two dimensions for projection, one dimension for space, one dimension for time), as it reflects the multi-perspective positioning of each presented gesture as mentioned above.

¹² Elizabeth Howell, and Alisa Harvey, Sirius: The brightest star in Earth’s night sky.

¹³ Dan Margalit and Joseph Rabinoff, 6.3 Orthogonal Projection.

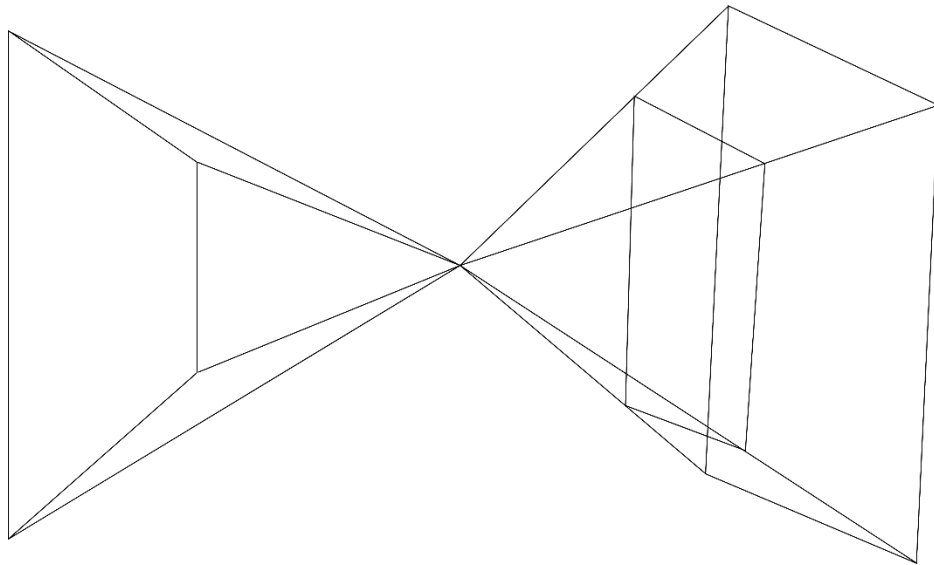


Figure 3- Orthogonal Projection Matrix

Second, all the writing techniques work in favor of the interacting dimensions of the events as they simultaneously add depth, movement and temporality to the music. In this sense, gesture-groups within the composition include movement, emphasis, and trajectory in a single space-occurrence. Such gestures, in combination with proportional distances, convert this spatial principle into a musical one. Dynamic transformations are integrated inside each individual token to increase depth into the otherwise unidimensional depiction. Finally, a non-lyrical vocal content has been carefully chosen for this piece in order to represent a globular prototype with non-assigned viewpoint (multiple options) in as many musical scopes as possible, starting with relative rhythmic configuration, dynamics, proportional durations, etcetera, as mentioned above. This last consideration aims to visually represent the relative placement of the intended objects in space being simultaneously observed by multiple viewers, all using independent standpoints.

SIRIUS

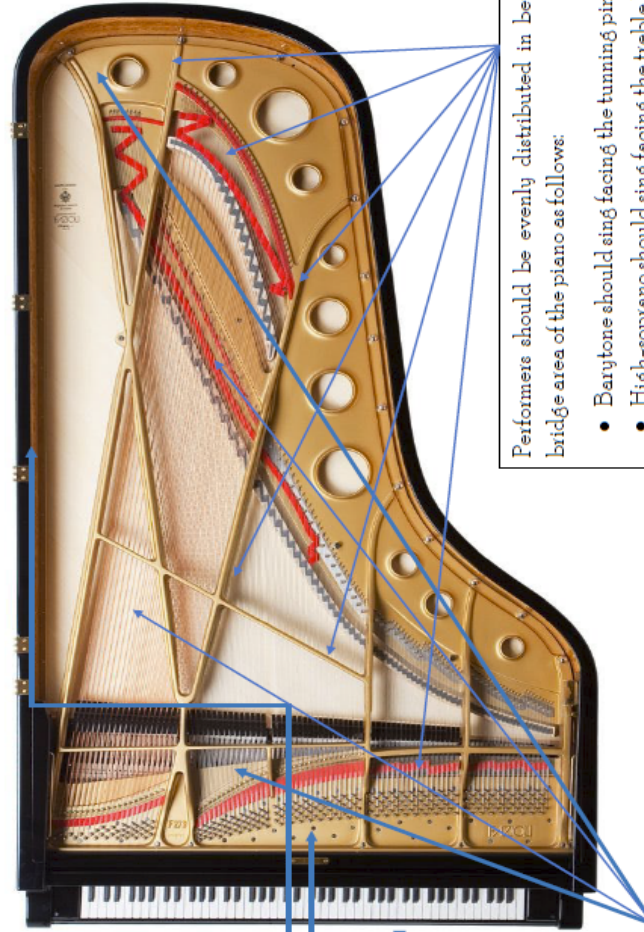
For Amplified Vocal Ensemble

~1 bass, 1 barytone, 1 tenor, 1 mezzo, 1 soprano, 1 high soprano ~
(17' approx.)

Eduardo Orea

2022

ENSEMBLE'S SETUP AND AMPLIFICATION



Both piano lid and music rack should be removed.

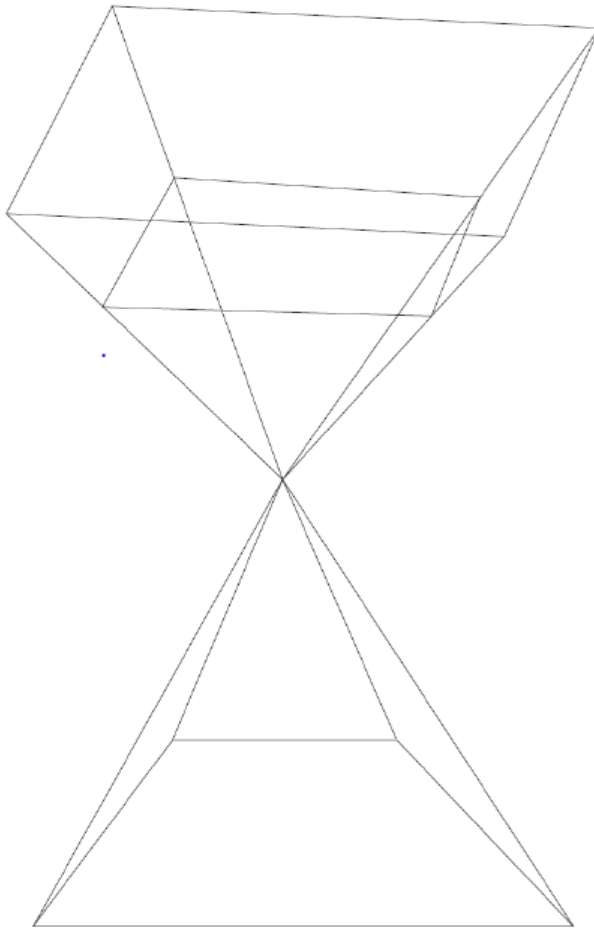
Damper pedal should always be down.

Amplification: one microphone should be placed close to the soundboard, another close to the bass bridge, a third microphone should be placed close to the plate, and the final microphone should be placed close to the treble bridge.
In addition, 2 speakers should be placed on the stage, preferably one at

Performers should be evenly distributed in between the tuning-pins and bass bridge area of the piano as follows:

- Barytone should sing facing the tuning pins.
- High-soprano should sing facing the treble bridge.
- Tenor should sing facing the bass strings.
- Counter-tenor should sing facing the plate area.
- Soprano should sing facing the bass bridge.
- Bass should sing facing the soundboard area.

SIRIUS
Orthogonal Projection Matrix



SIRIUS

Performance Notes

GENERAL

- With the exception of the first, climax, and last page (marked with an asterisk), each performer should assign a random order to the different pages of the score.
- All pages of the score can be read from any orientation (e.g., vertical, horizontal, diagonal, etc.).
- The duration of each page should be *circa* 55 seconds. The performer should play all gestures in the page during this time frame before continuing to the next page.

PROJECTION

- The Orthogonal Projection (3D- "staff") defines the relationships between gestures in terms of length, duration, movement, dynamics, relative register, and orientation.
- The Orthogonal Projection matrix does not possess a specific facet that faces upward, hence allowing multiple orientations.

Performance Notes ~ II

ORIENTATION AND TEMPORALITY

- Gestures can be played in any direction (e.g., right-left, up-down, etc.) independently of the chosen orientation.
- Full gestures are linked by dotted lines and should be played in their entirety (full trajectory) before the performer continues on to the next gesture.
- Temporality is relative to the number of elements in a page. The more elements, the faster the relative tempo, and the fewer elements the slower the relative tempo.
- The size of each element represents its relative length in comparison to contiguous gestures. Length is determined by the relationship between the number and size of elements present in a page, as well as an approximate 35" duration for each page.

Performance Notes ~ III

REGISTER

- The relative register of gestures will depend on the chosen orientation:
 - Vertical: upper side-high register; middle-middle register; lower side-low register.
 - Horizontal: upper side - high register; middle- middle register; lower side-low register.
 - Diagonal: left side-high register; middle-middle register; right side-low register.

PITCH

- There is no indicated fixed pitch; the performer should choose an intervallic relationship according to the positioning of the gesture within the selected projection orientation.
- Chromatic succession is not to be sung.
- Alternate between accidentals in any order.
- The size of each symbol represents its relative length in comparison to contiguous gestures.

Performance Notes ~ IV

TEXTURE

- Each symbol represents a specific texture. Indications for how the different voices should play a given symbol are given in the Textural Chart below.

DYNAMICS

- Changes in transparencies and depth (i.e., size of the element) define the dynamic transformations for the gestures. The smaller/thinner the element, the softer it sounds; the bigger/darker the element, the louder it sounds.







SILENCE



- Blank spaces define silent fragments.
- The length of the silence will depend on the number of elements, different trajectories and relative temporality of the trajectory within the approximate 35" duration for each page.

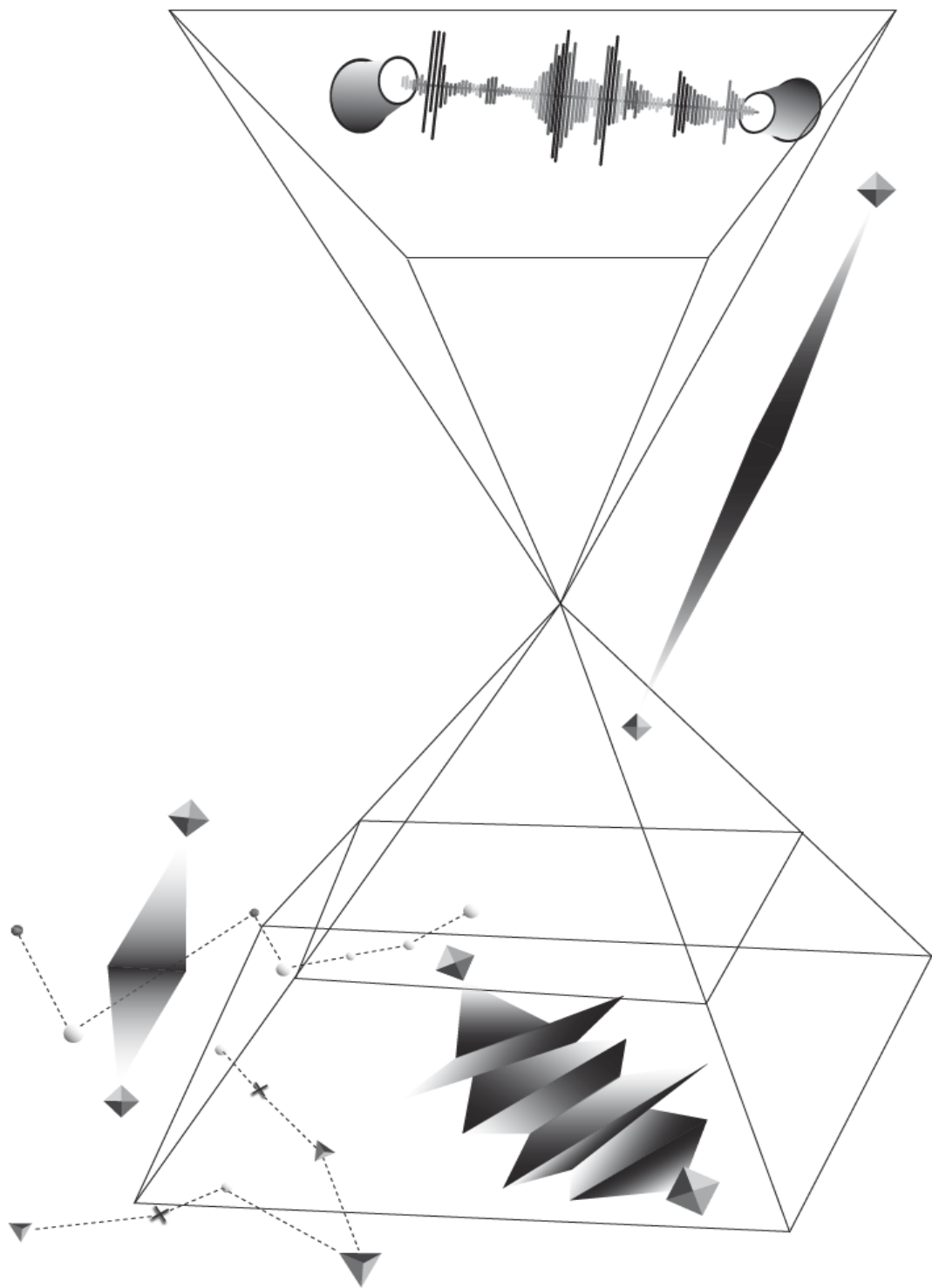
SIRIUS

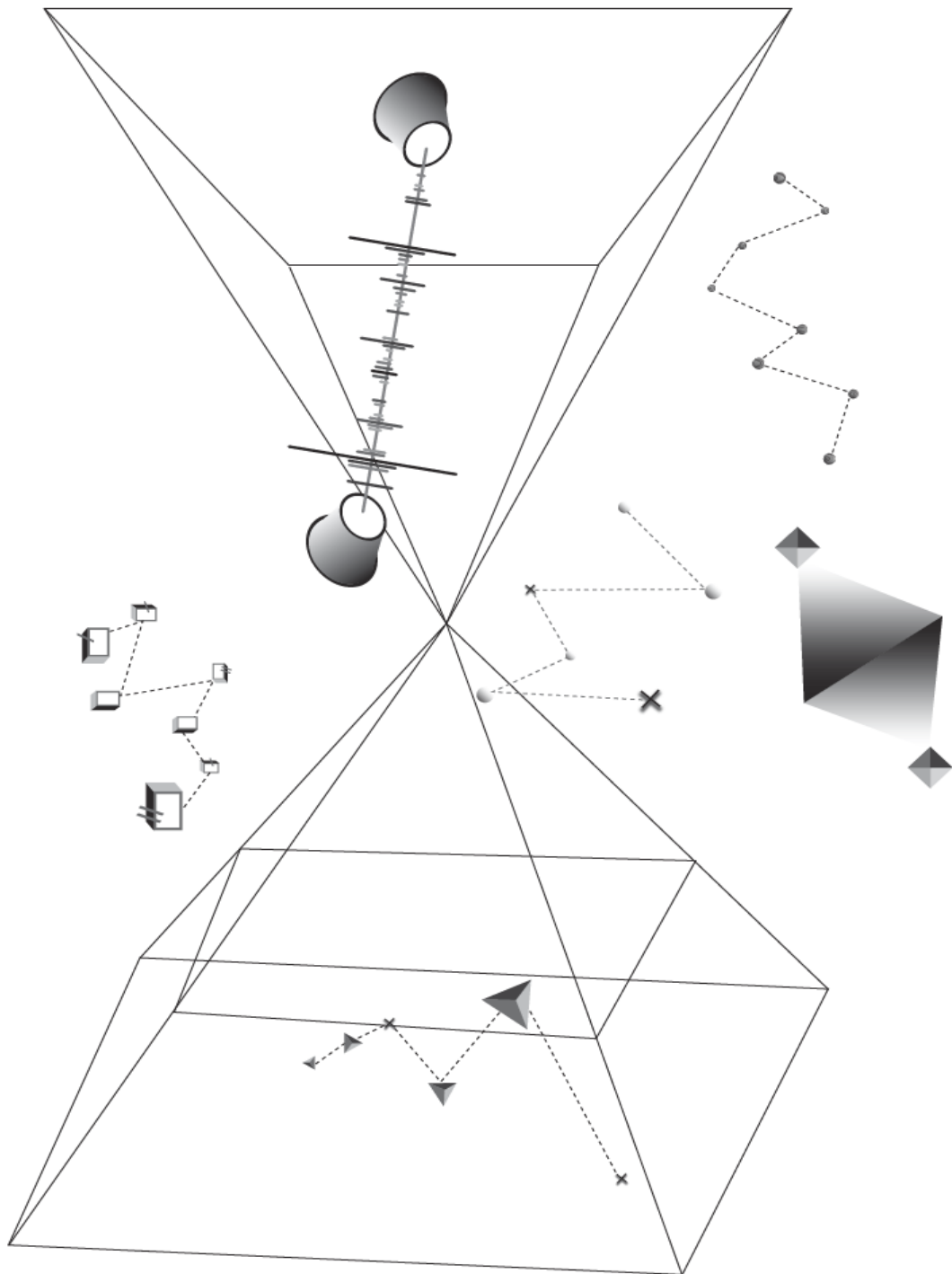
Textural Chart

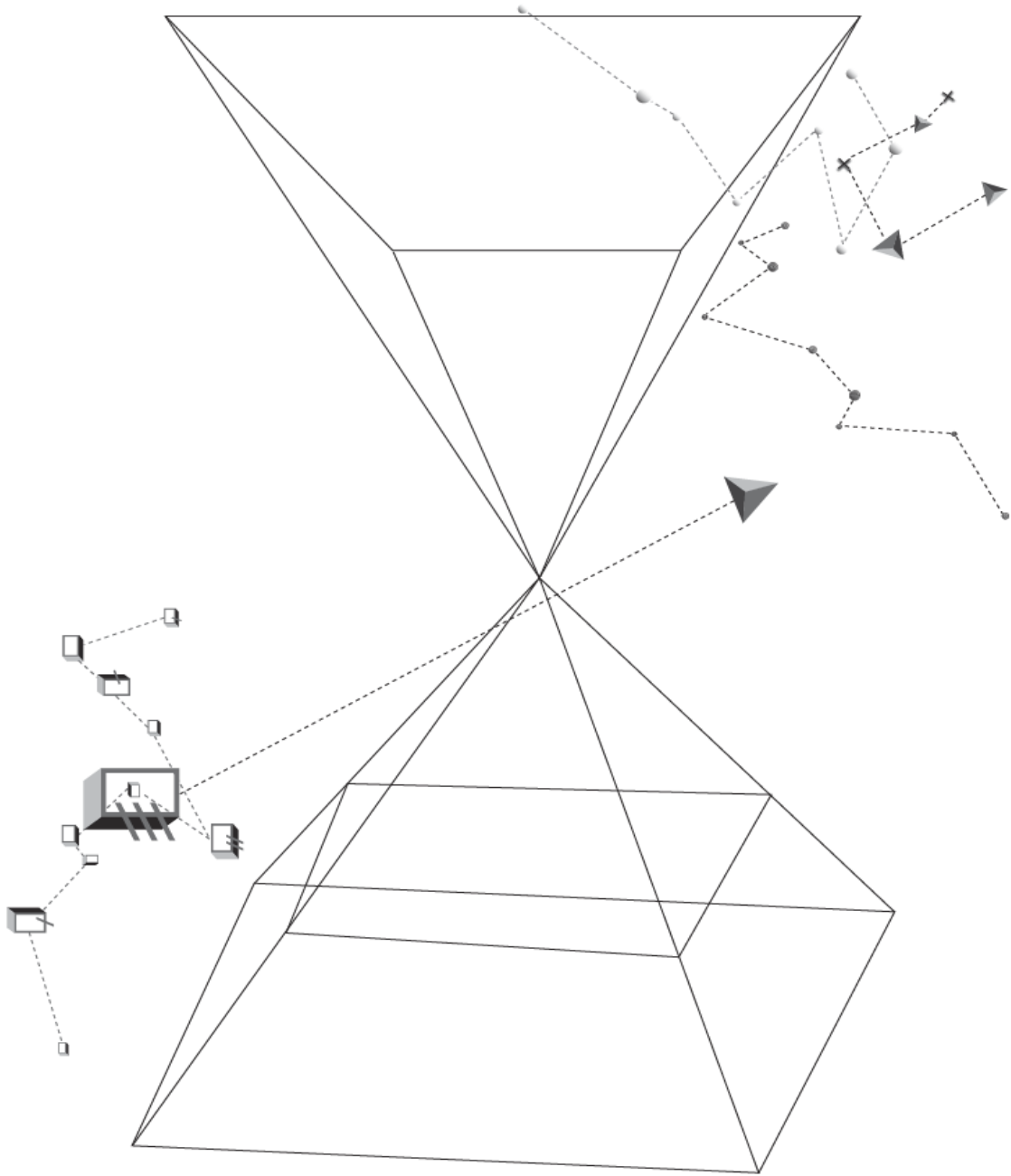
APPLIES FOR ALL VOICES:

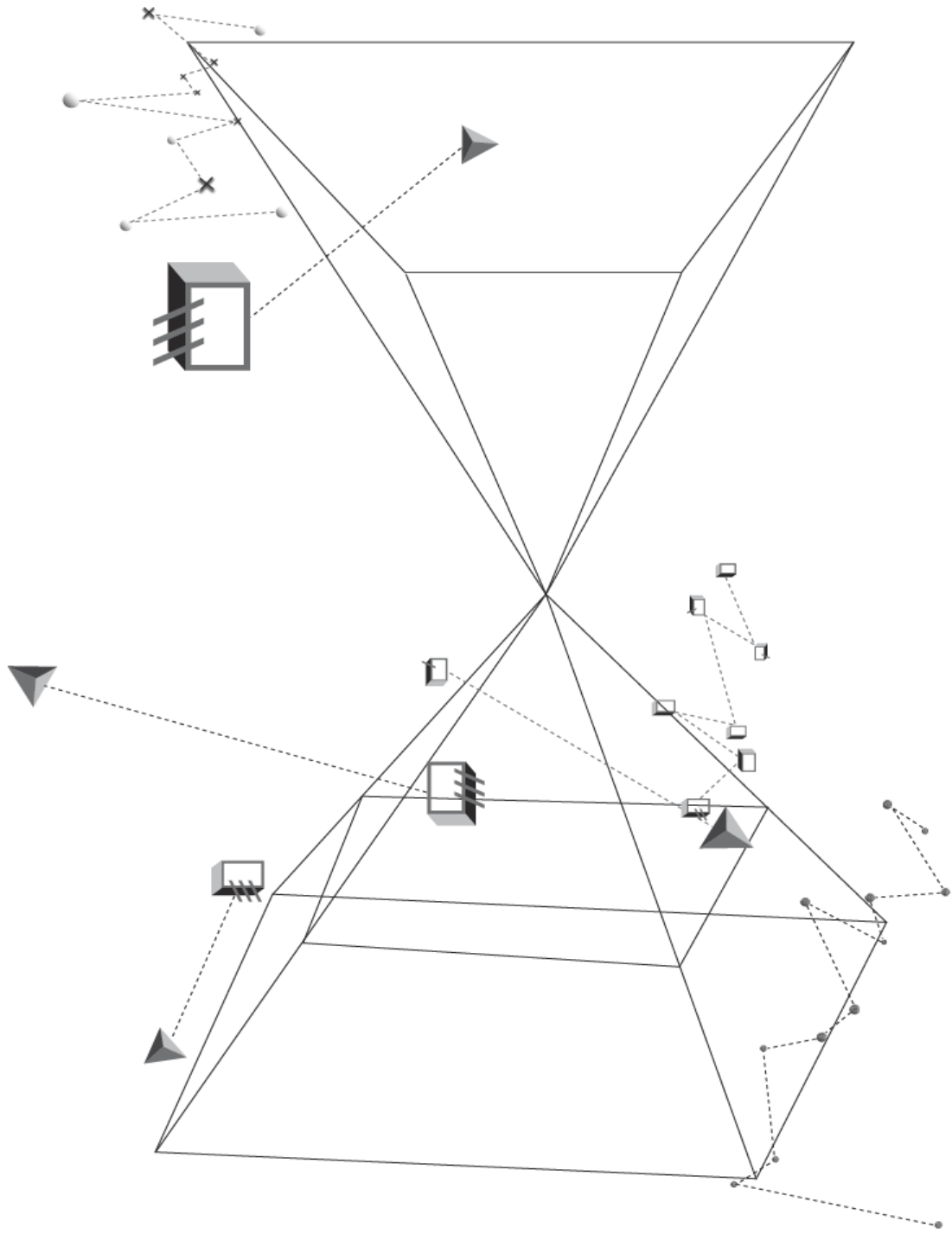
-  = *Regular Pitch*: Sing the chosen pitch by always producing an “Oh” sound with a semi closed mouth.
-  = *Whistle*: Always producing an “Oo” sound with a semi closed mouth.
-  = Indicates tongue clicking against teeth and upper cavity of the mouth.
-  = *Noise*: Sing an indefinite pitch with an “Ee” sound while generating a slight overpressure in the back of the throat.
-  = Indicates added flutter tongue (FT). The more lines the faster the FT; the lesser lines, the slower the FT.
-  = *Buzz*: Vibrate the teeth against each other while vocalizing the chosen pitch.

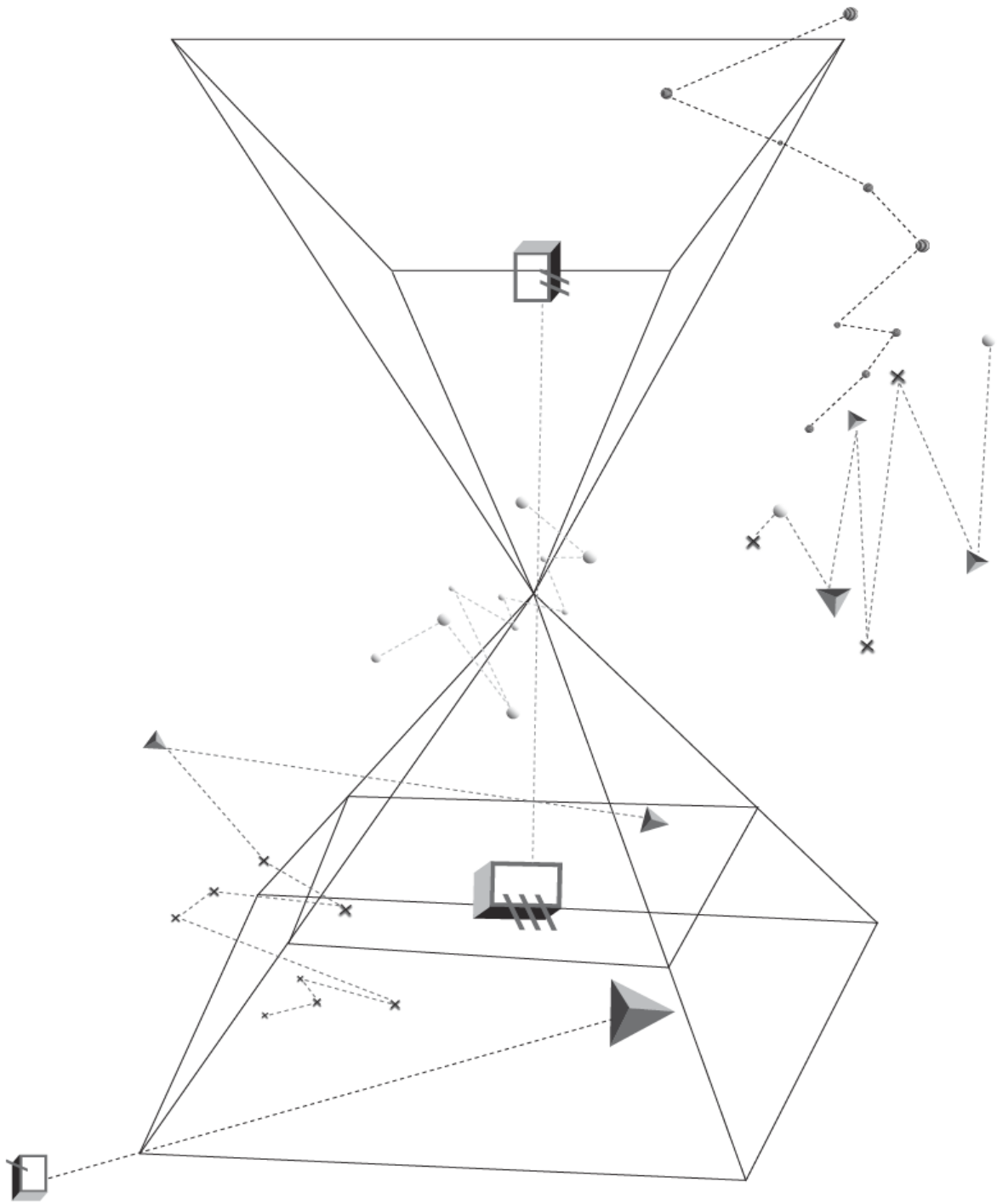
-  = *Overtone*: choose a pitch according to the position of the element in the page and produce a superimposed overtone with the tongue/lips by changing vocals. Changes in size and transparency of the unifying trajectory in between symbols (diamonds) indicate dynamic transformations.
-  = *Wind*: blow approximately 80% air and 20% sound. A bigger circle indicates a lower starting relative pitch, and a smaller circle indicates a higher departing relative pitch. A bigger “circle” indicates a lower starting relative pitch, and a smaller the circle indicates a higher departing relative pitch. Changes in wavelength saturation of the unifying trajectory in between symbols indicate dynamic transformations.

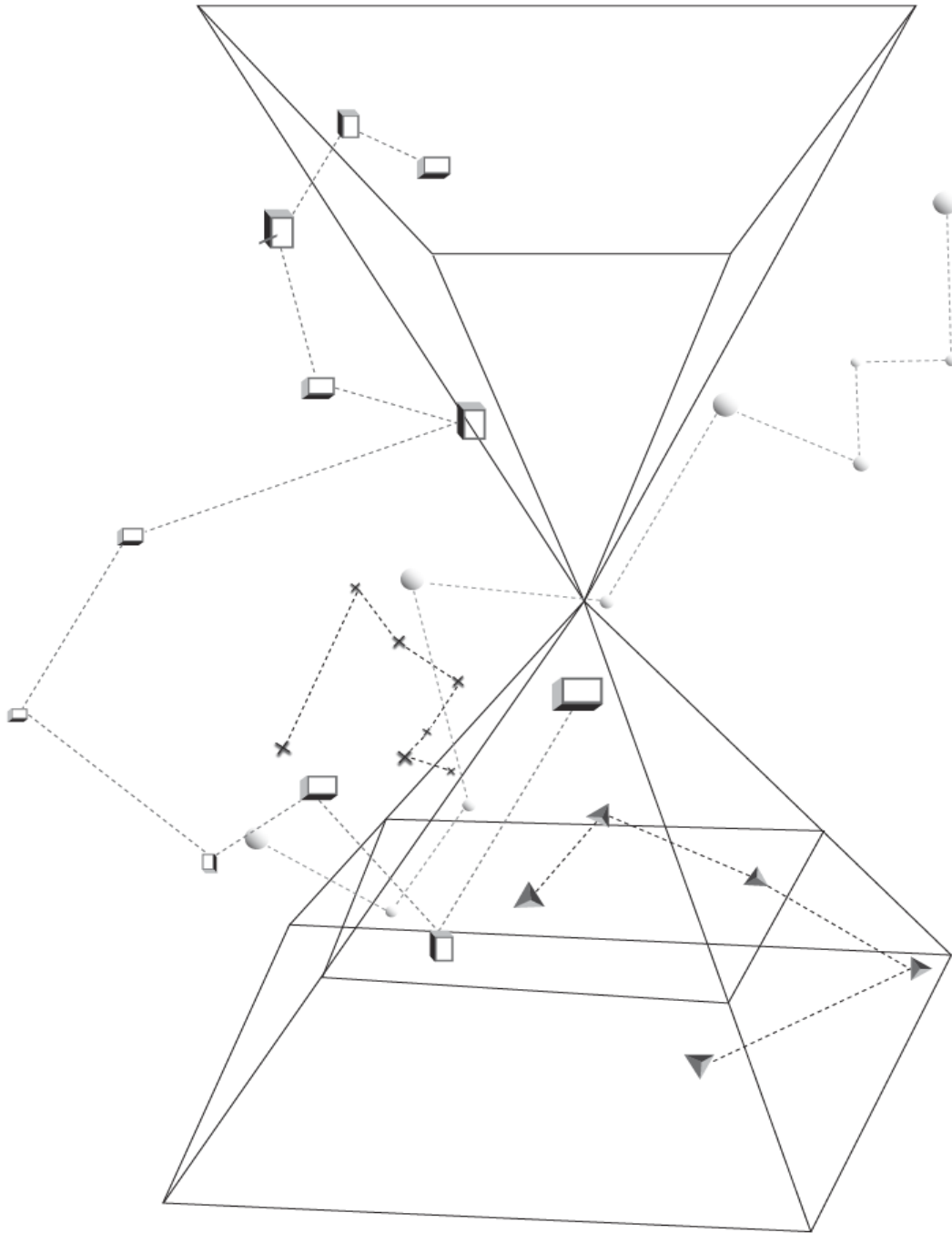


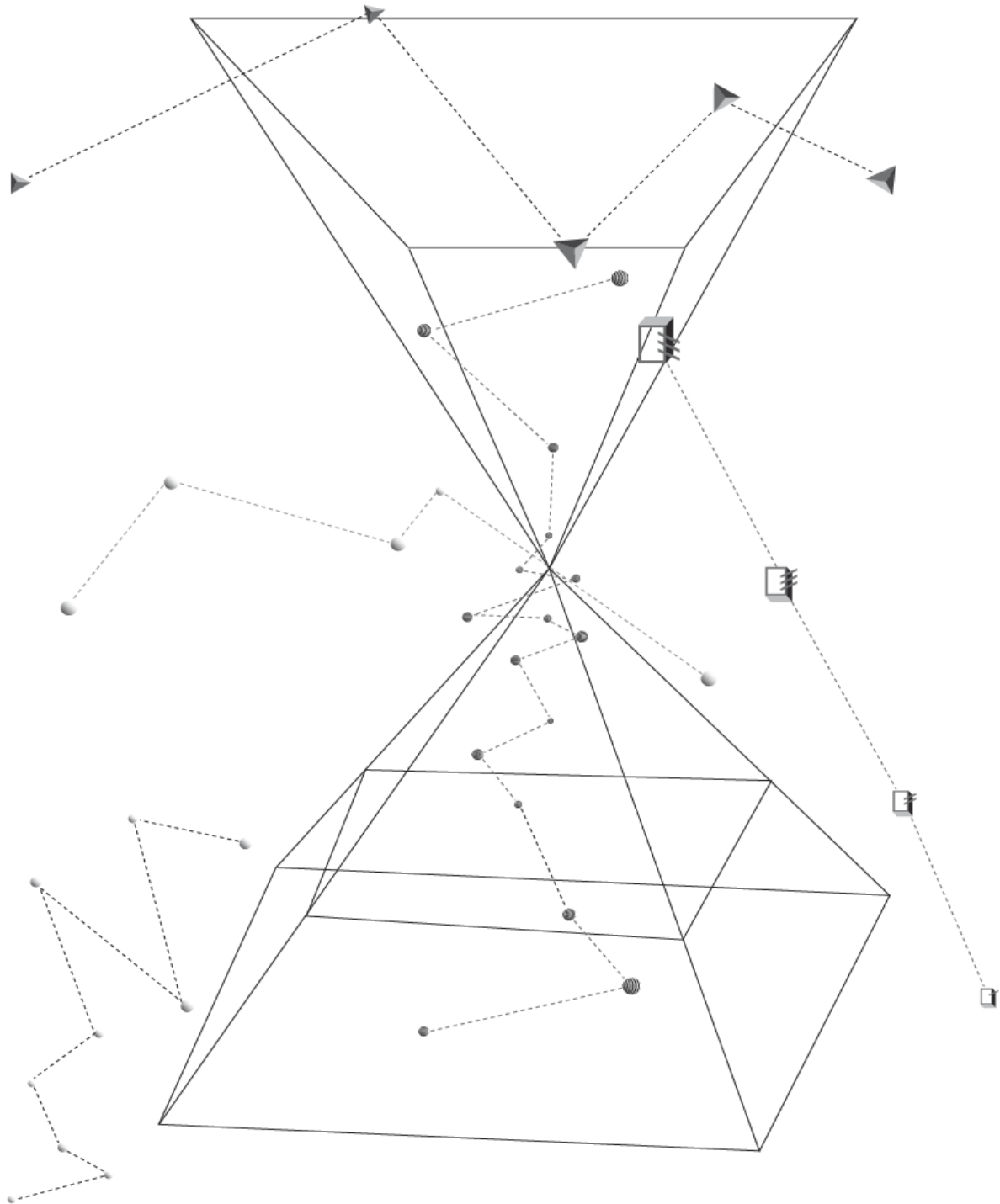


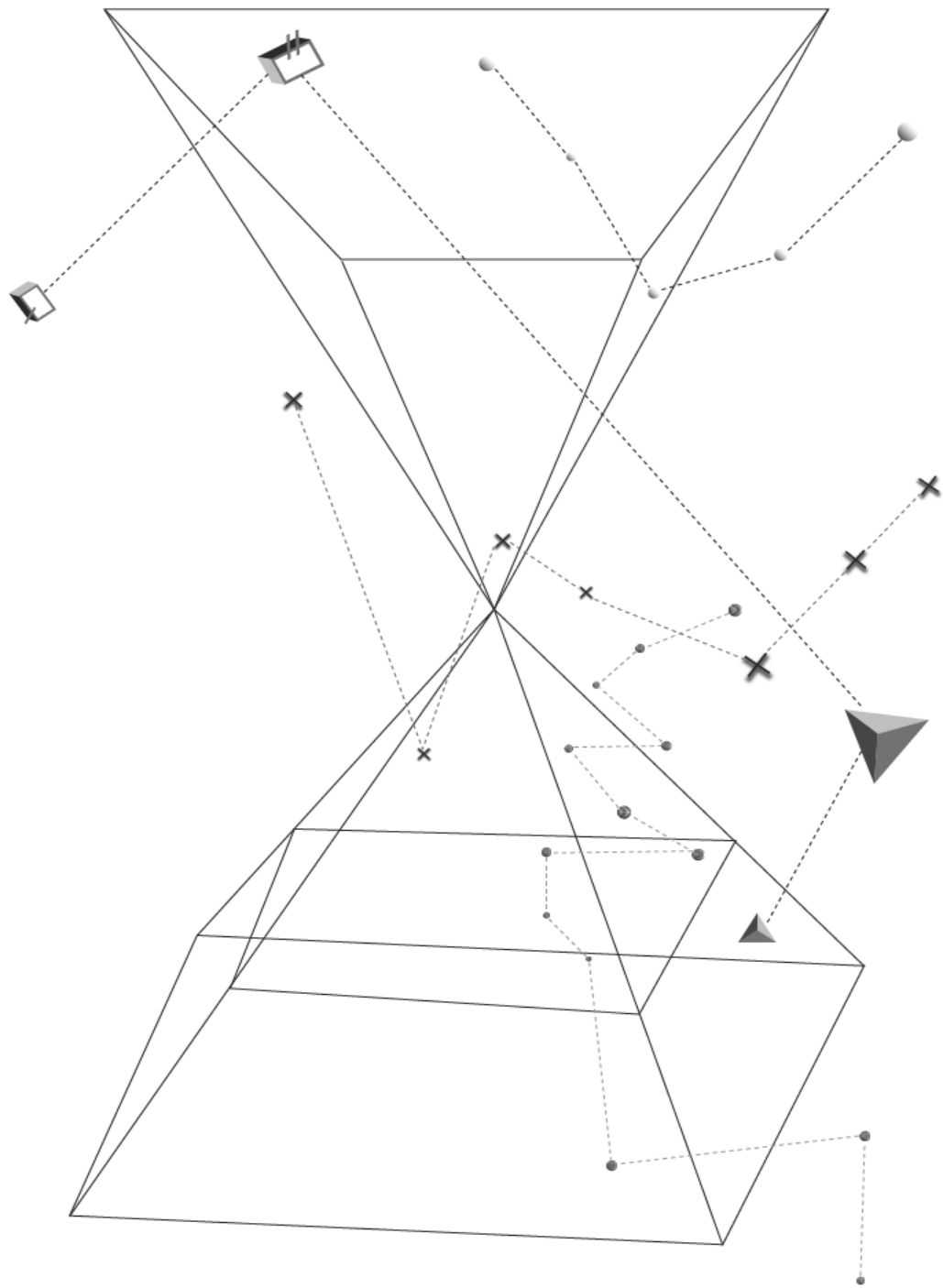


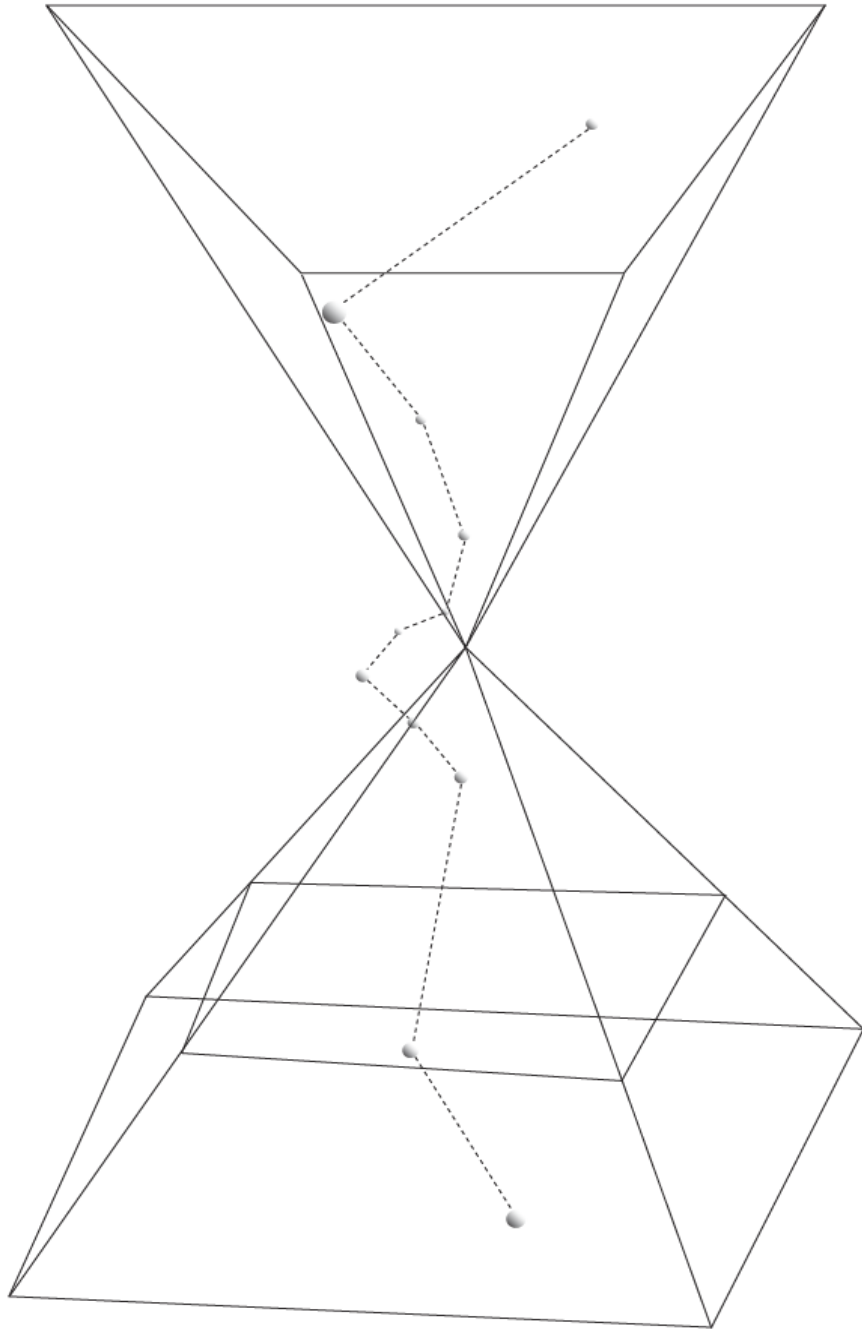


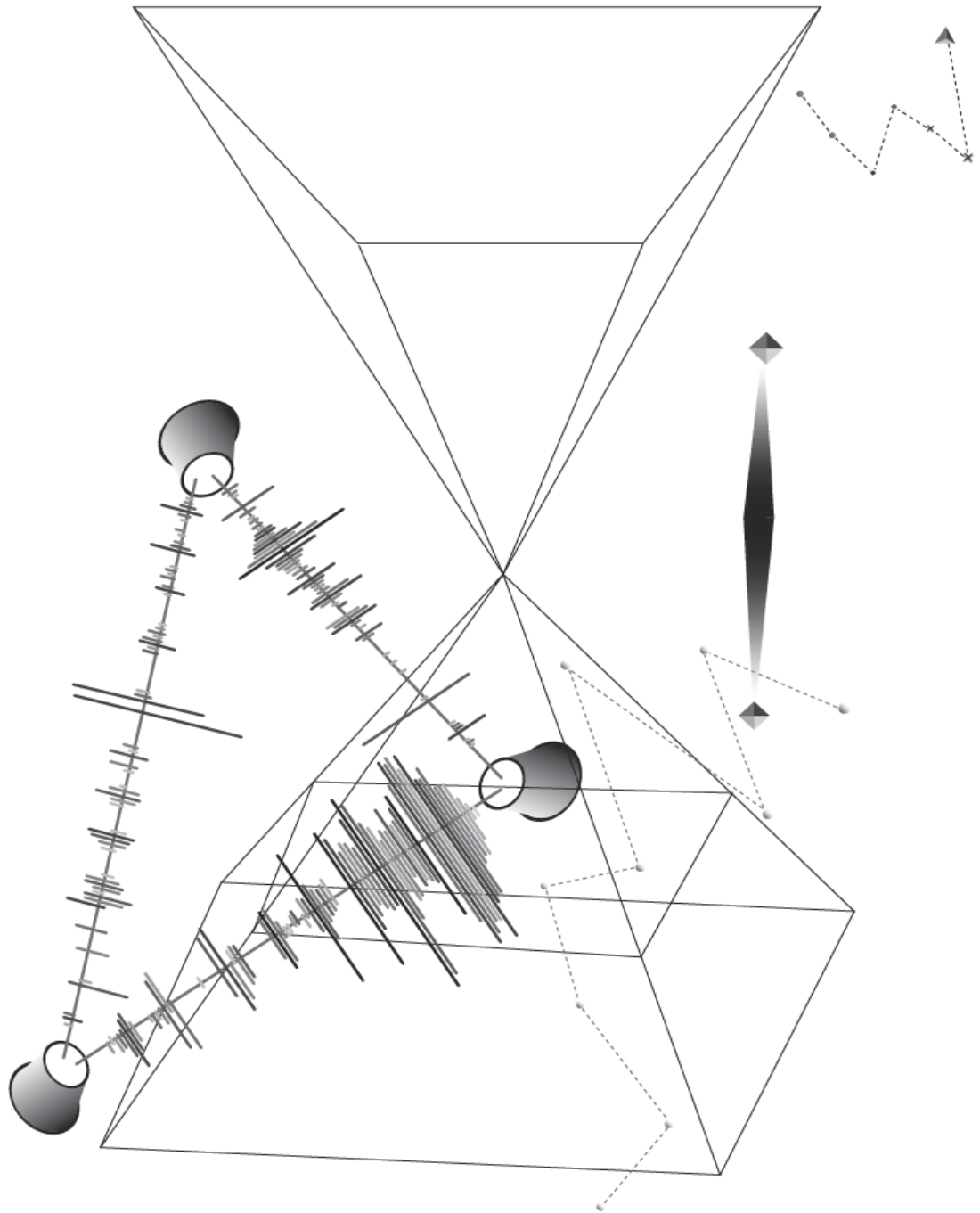


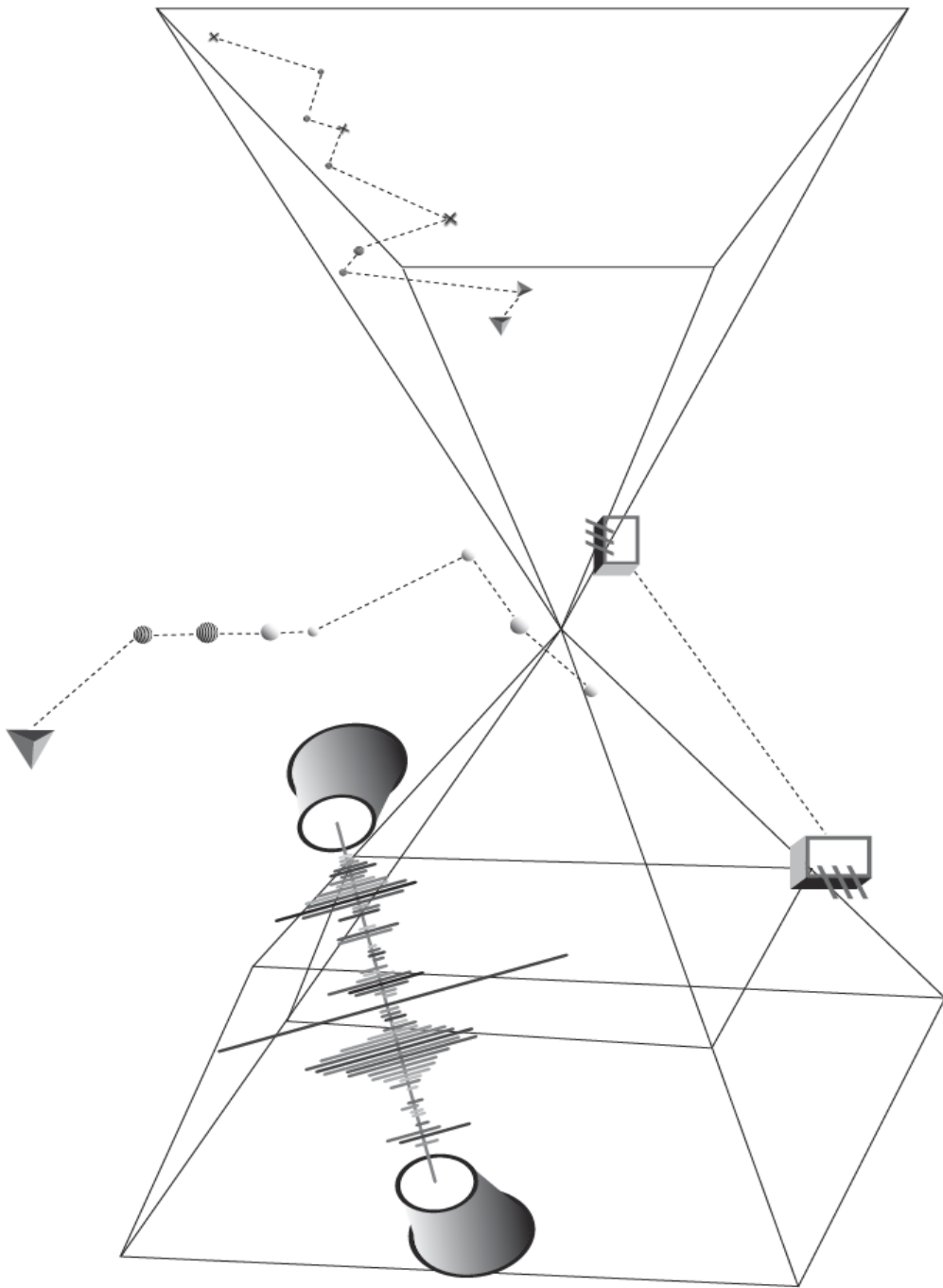


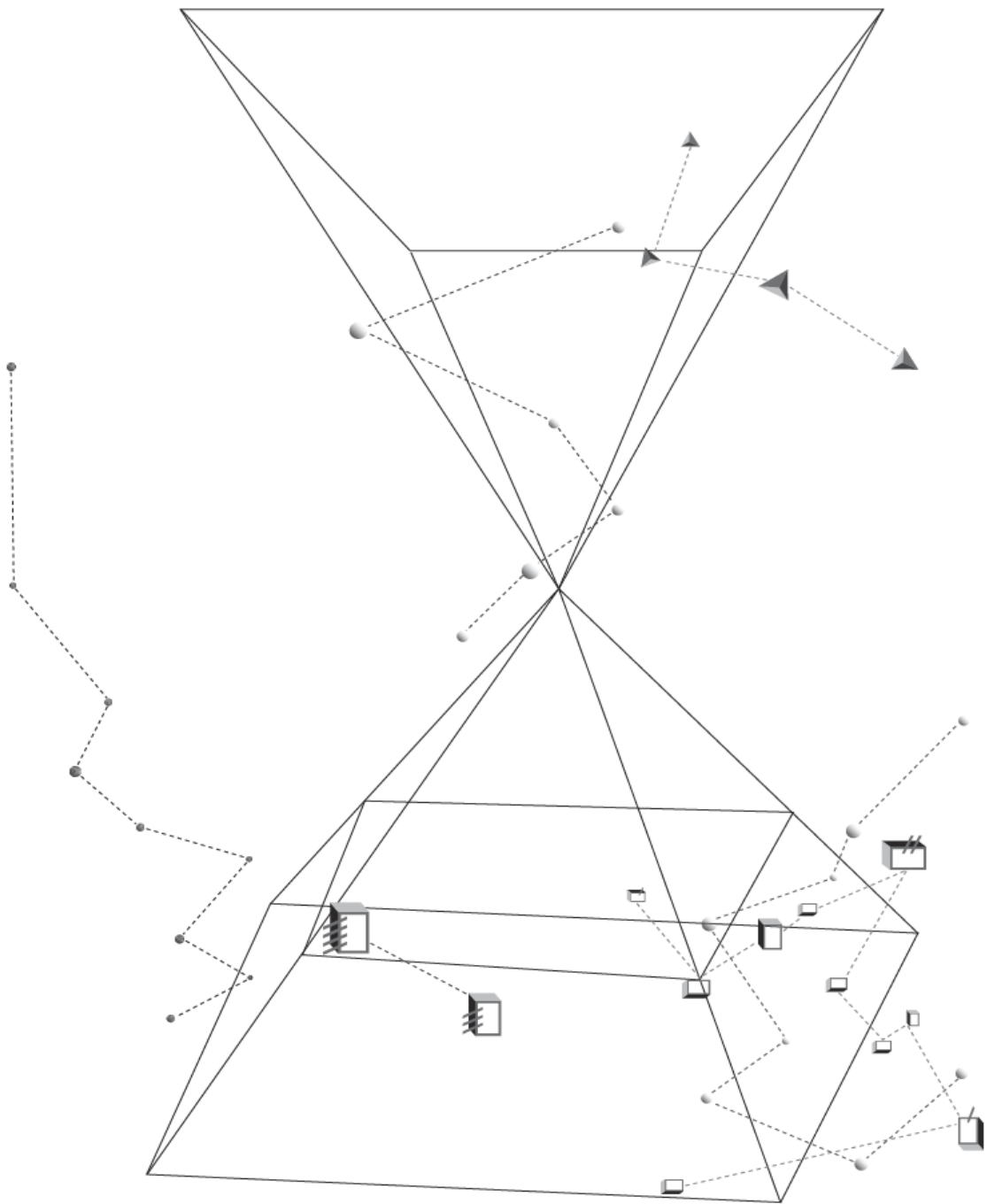


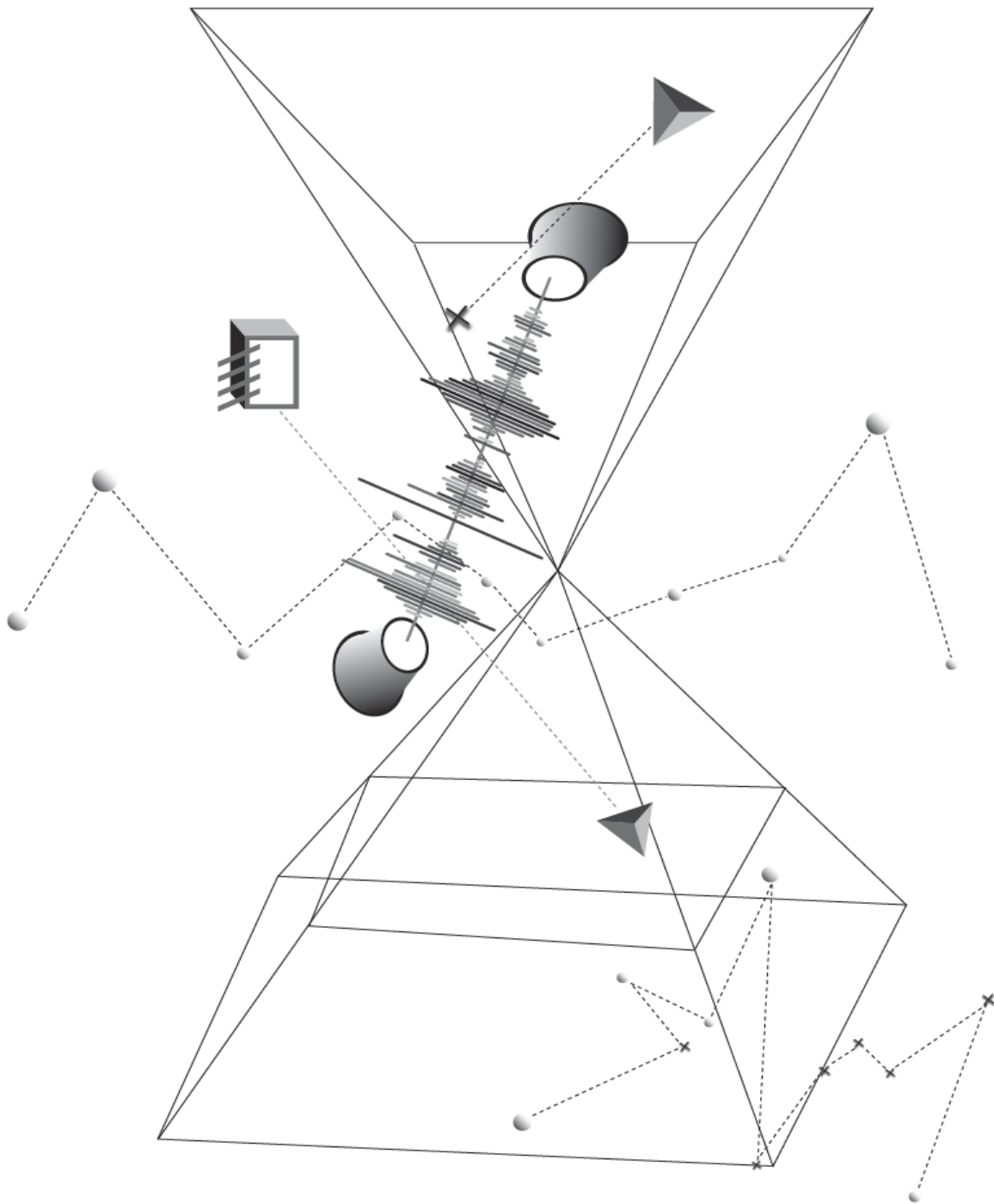


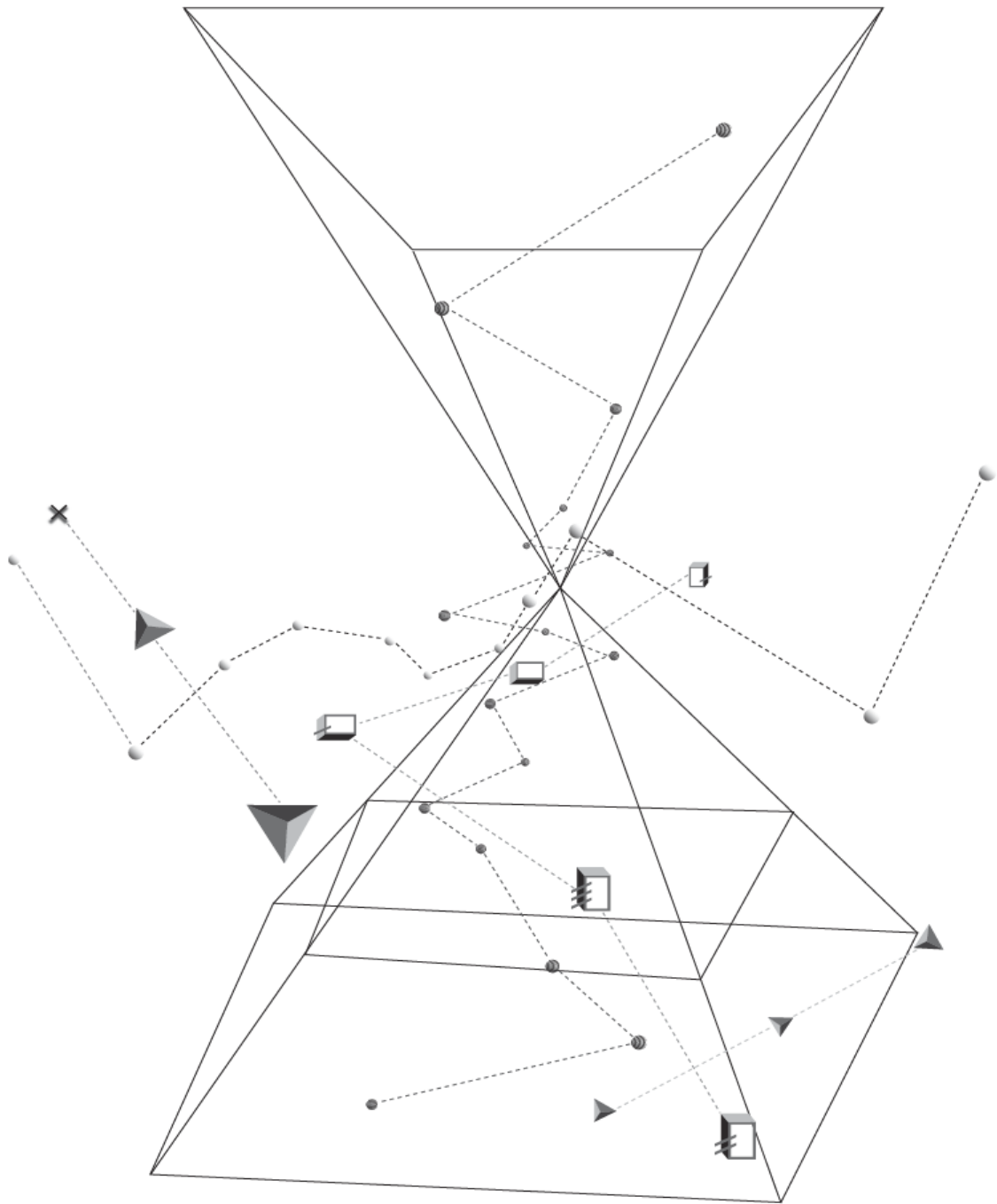


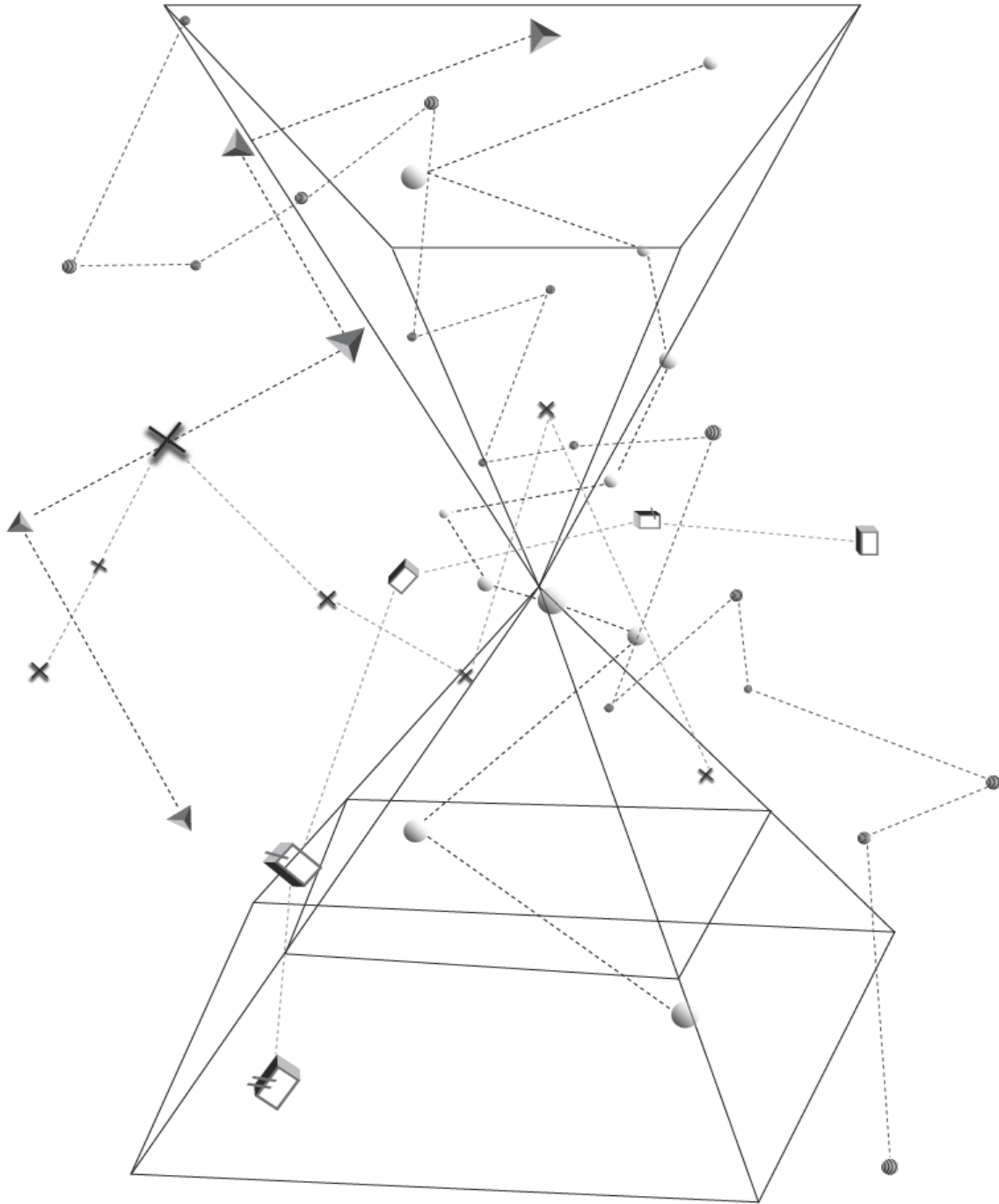


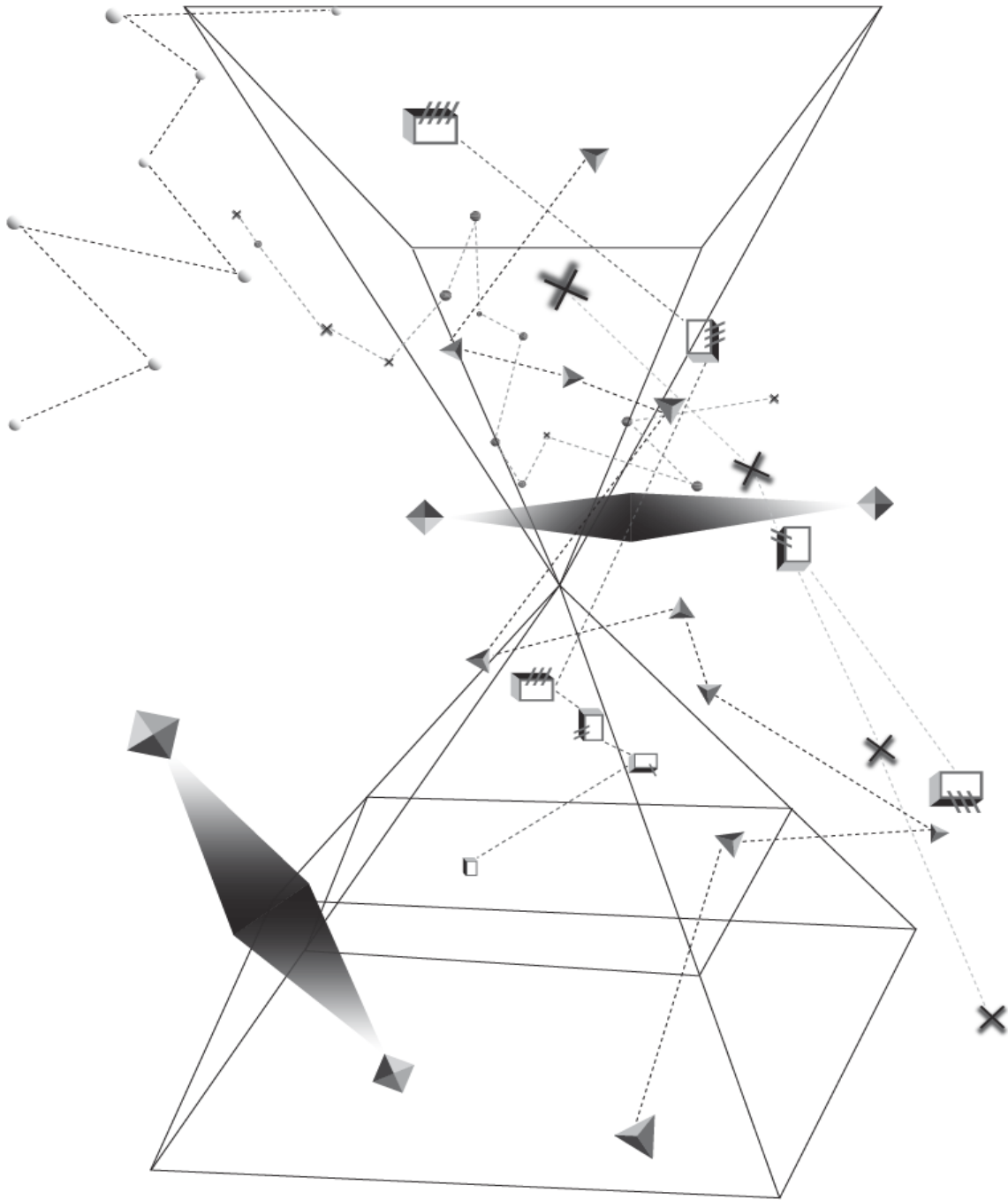


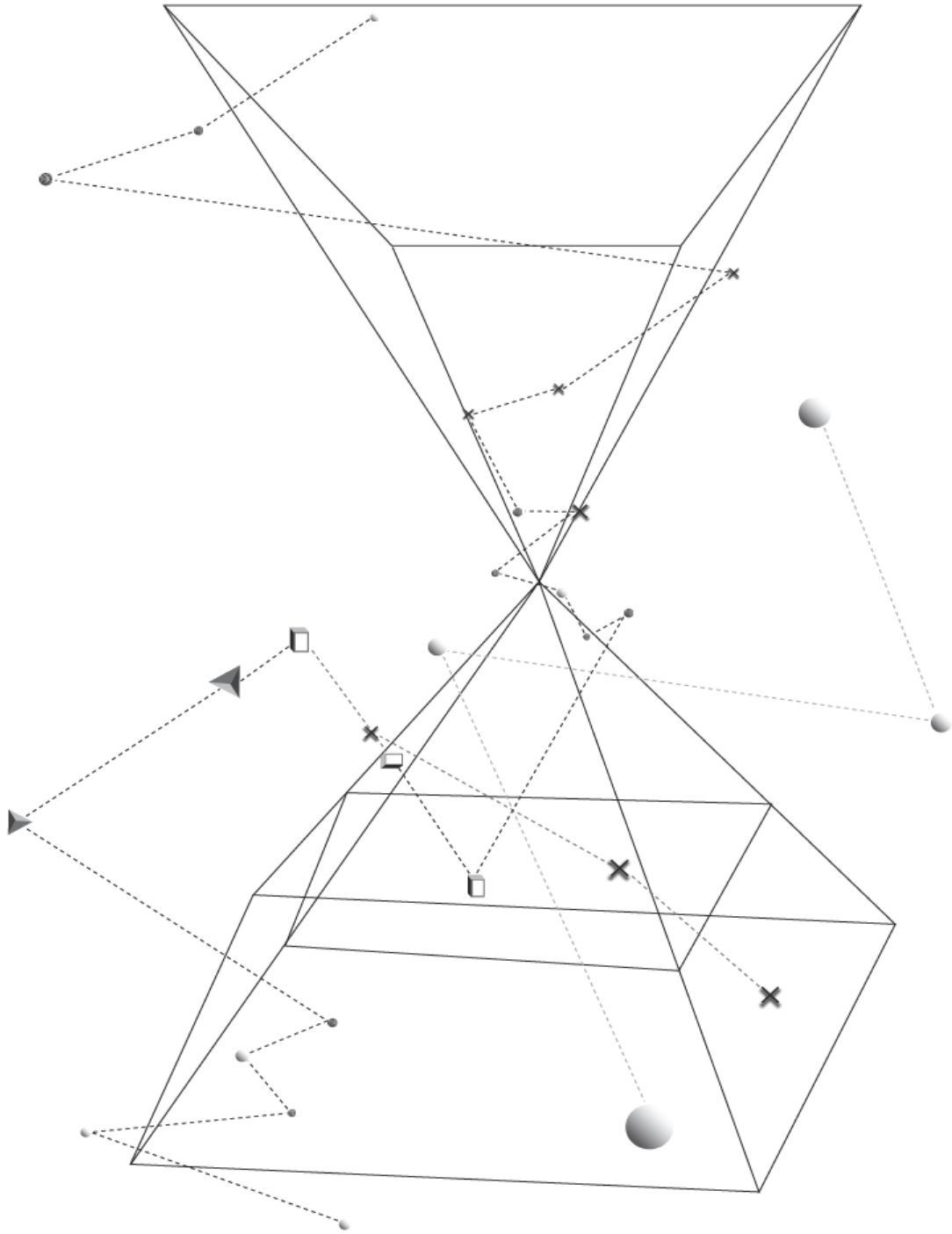


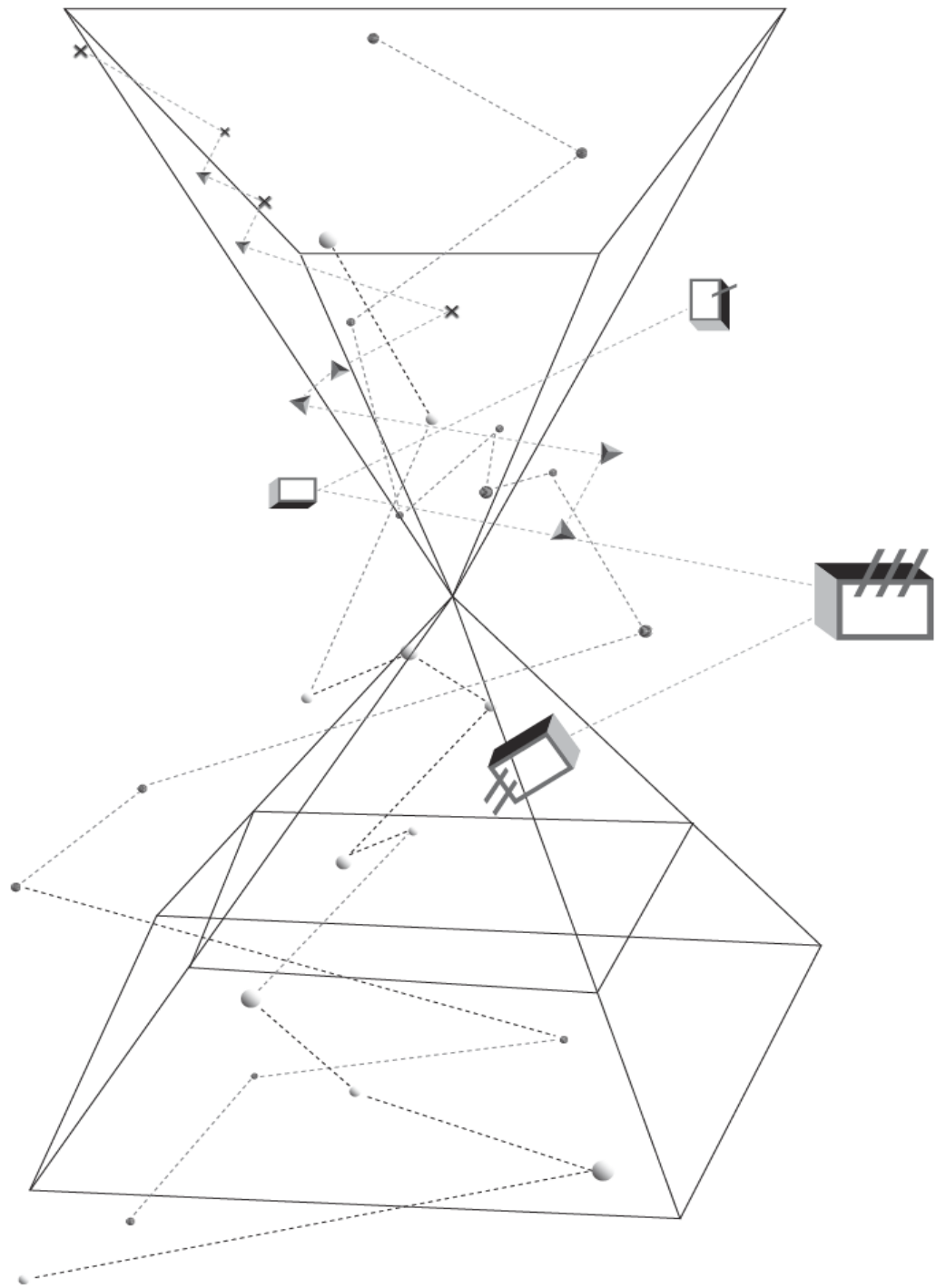


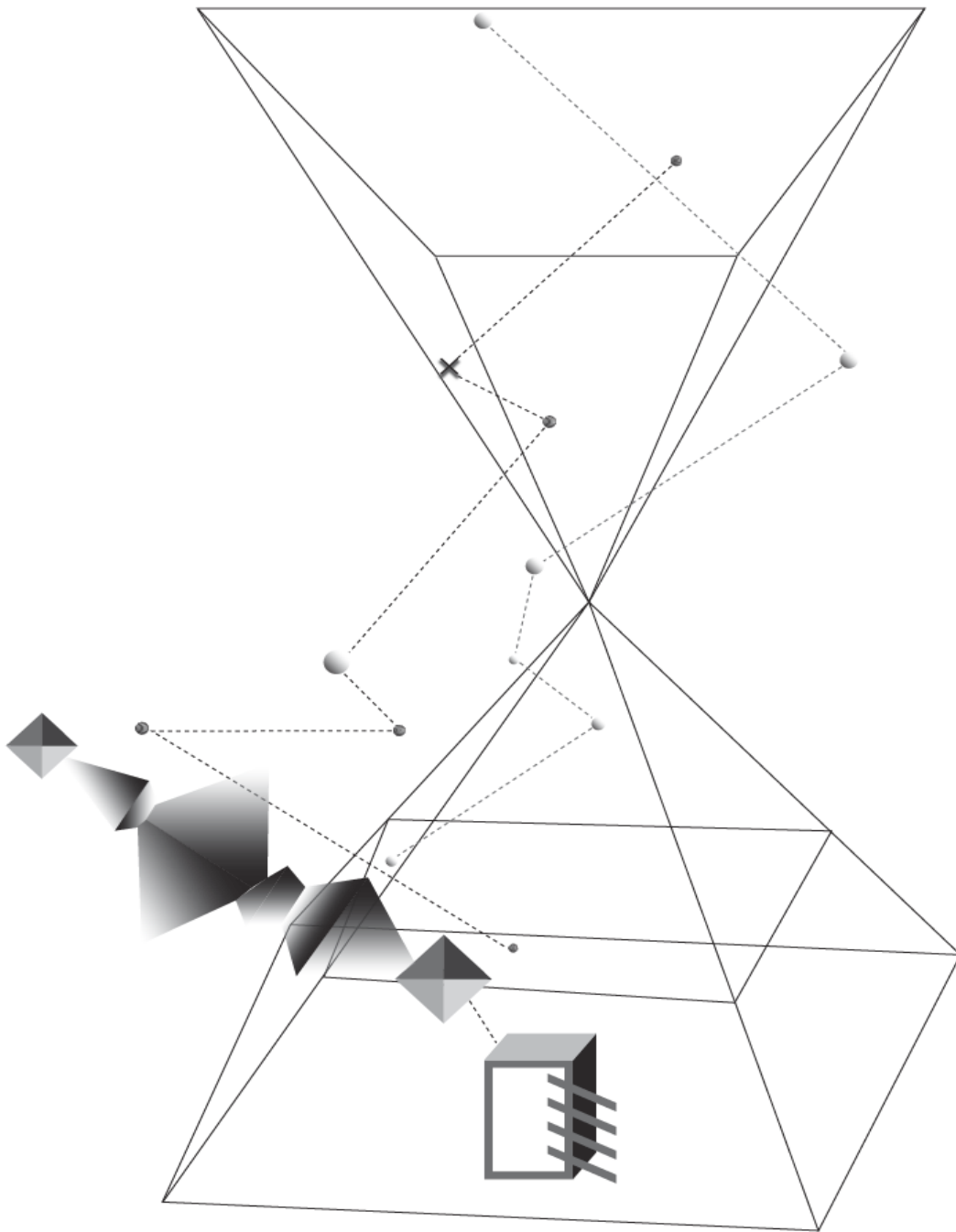


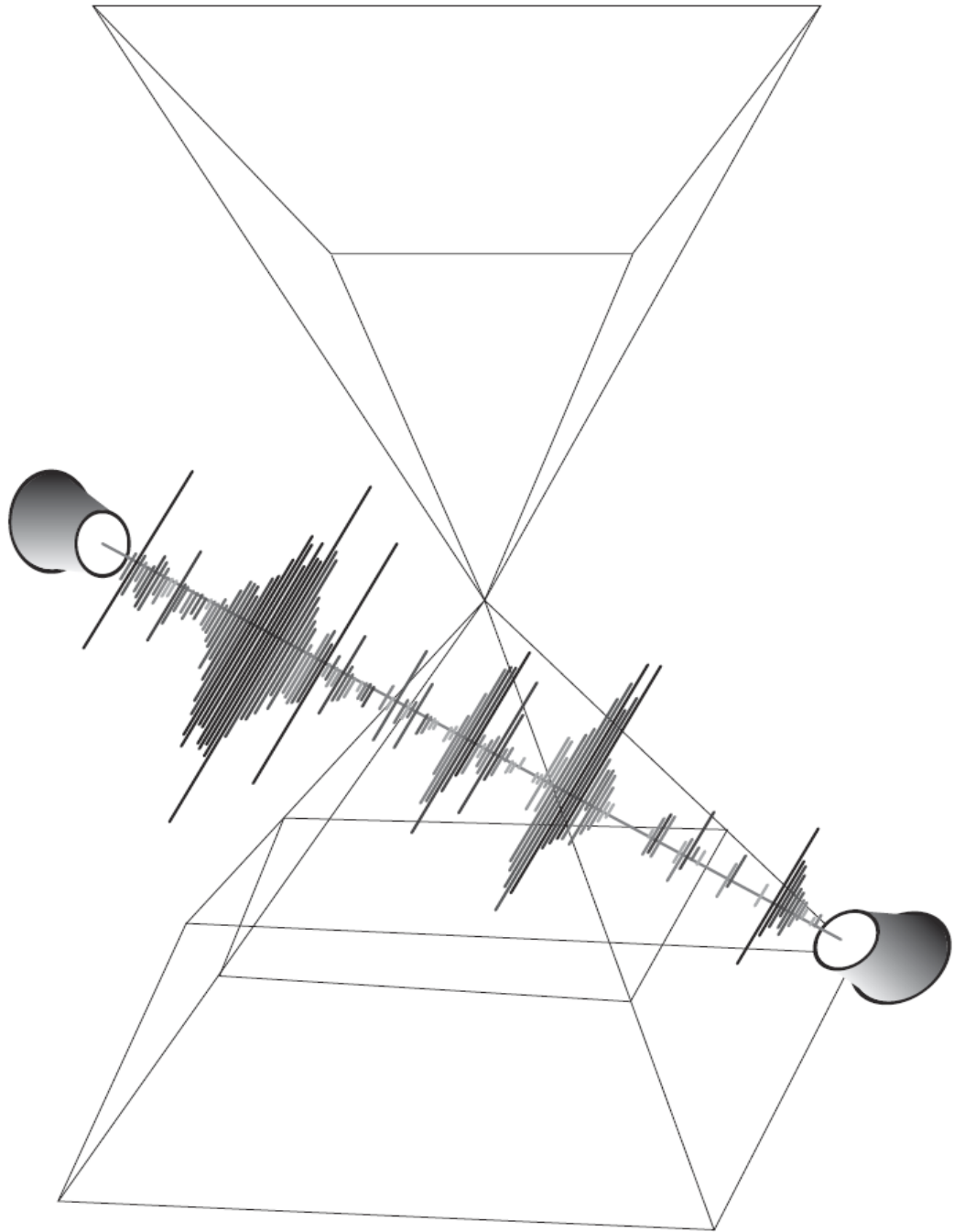


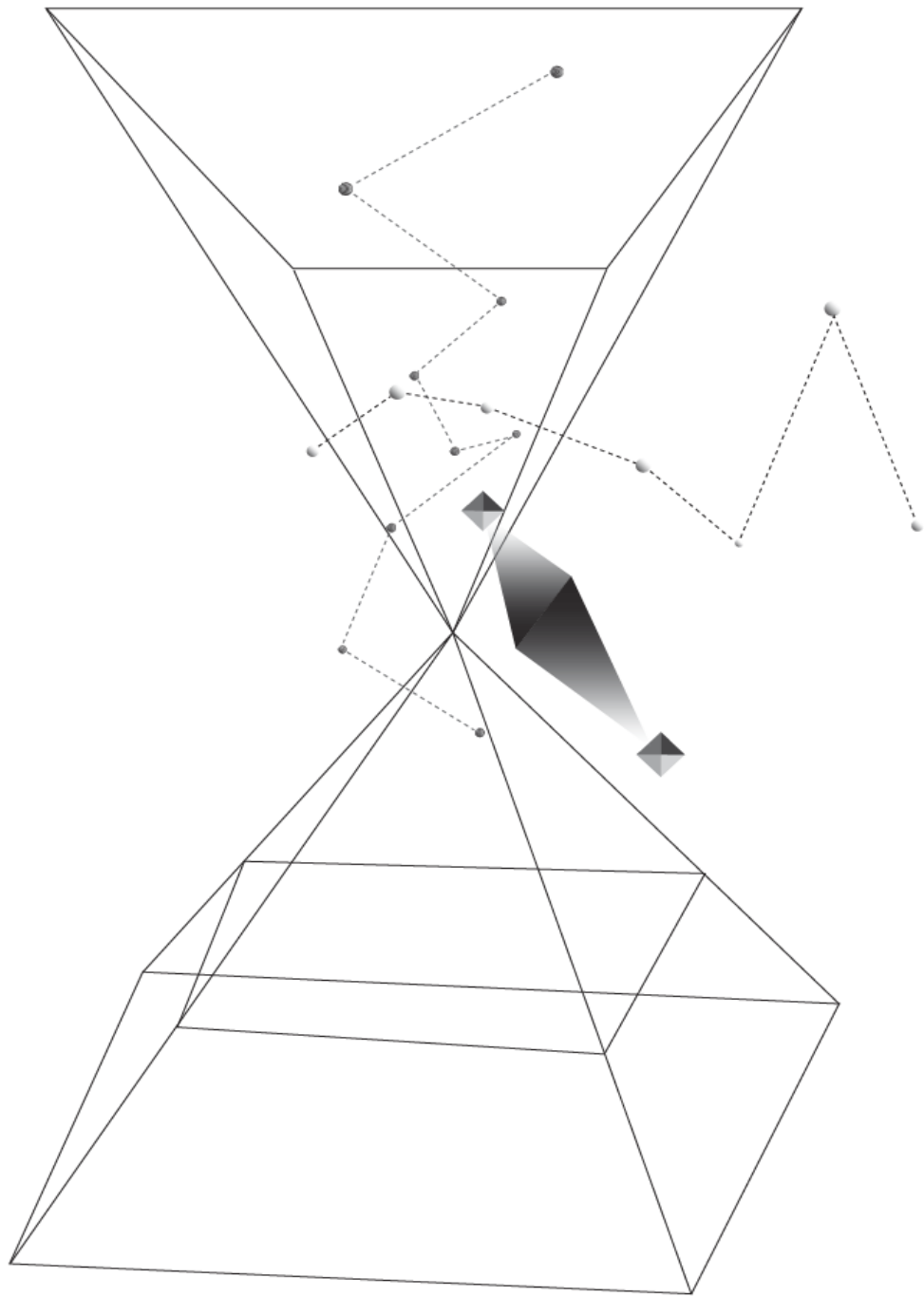


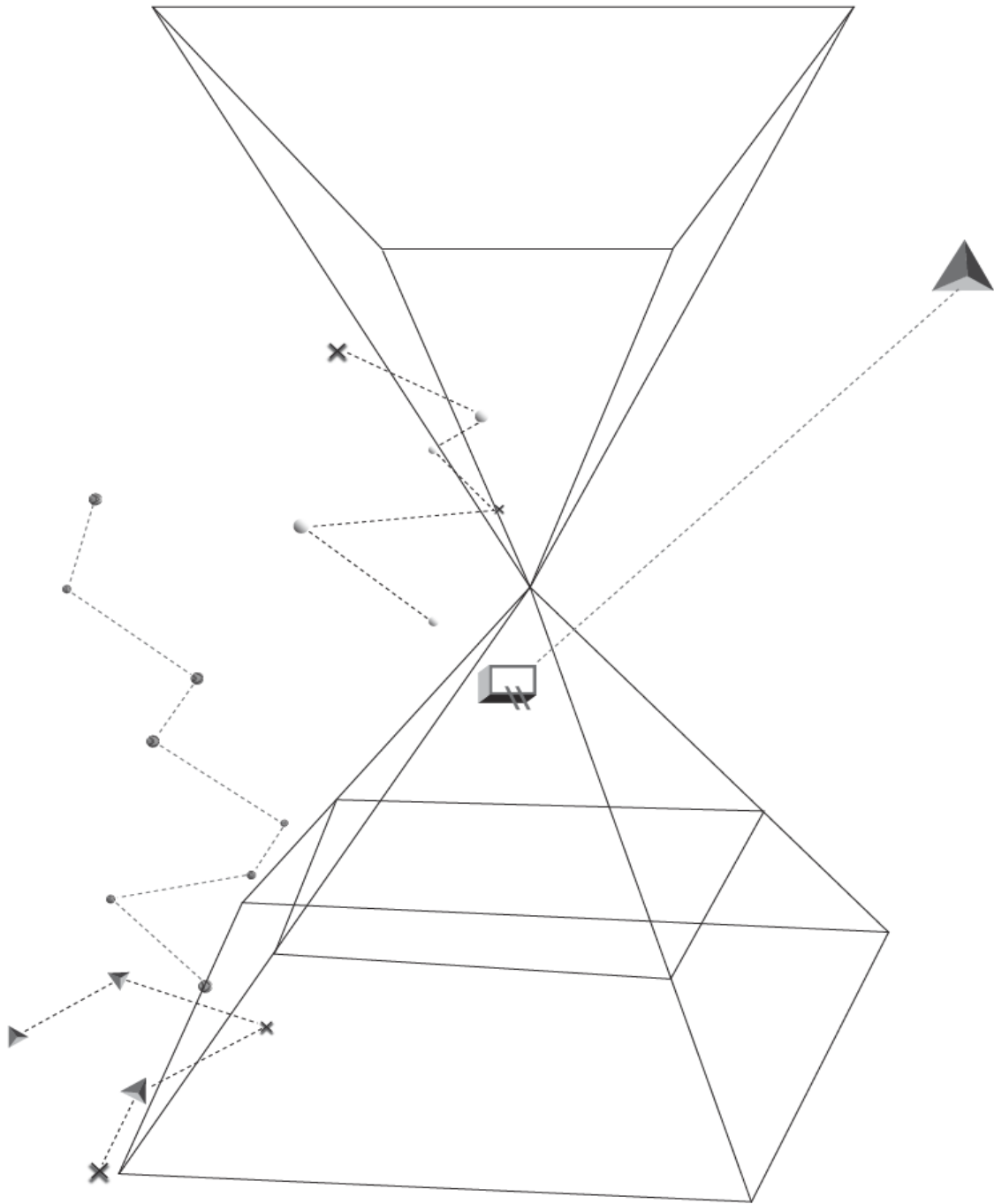


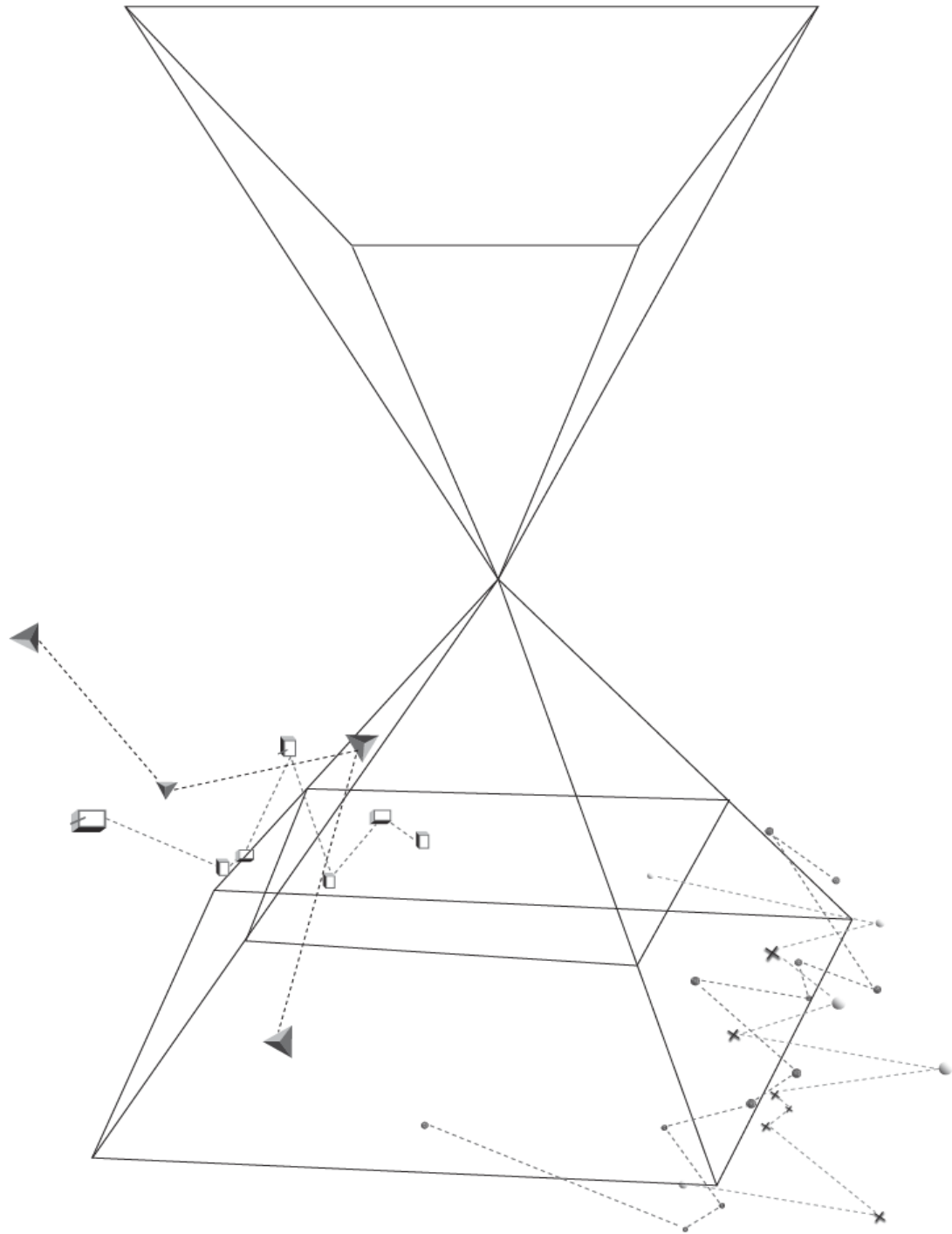


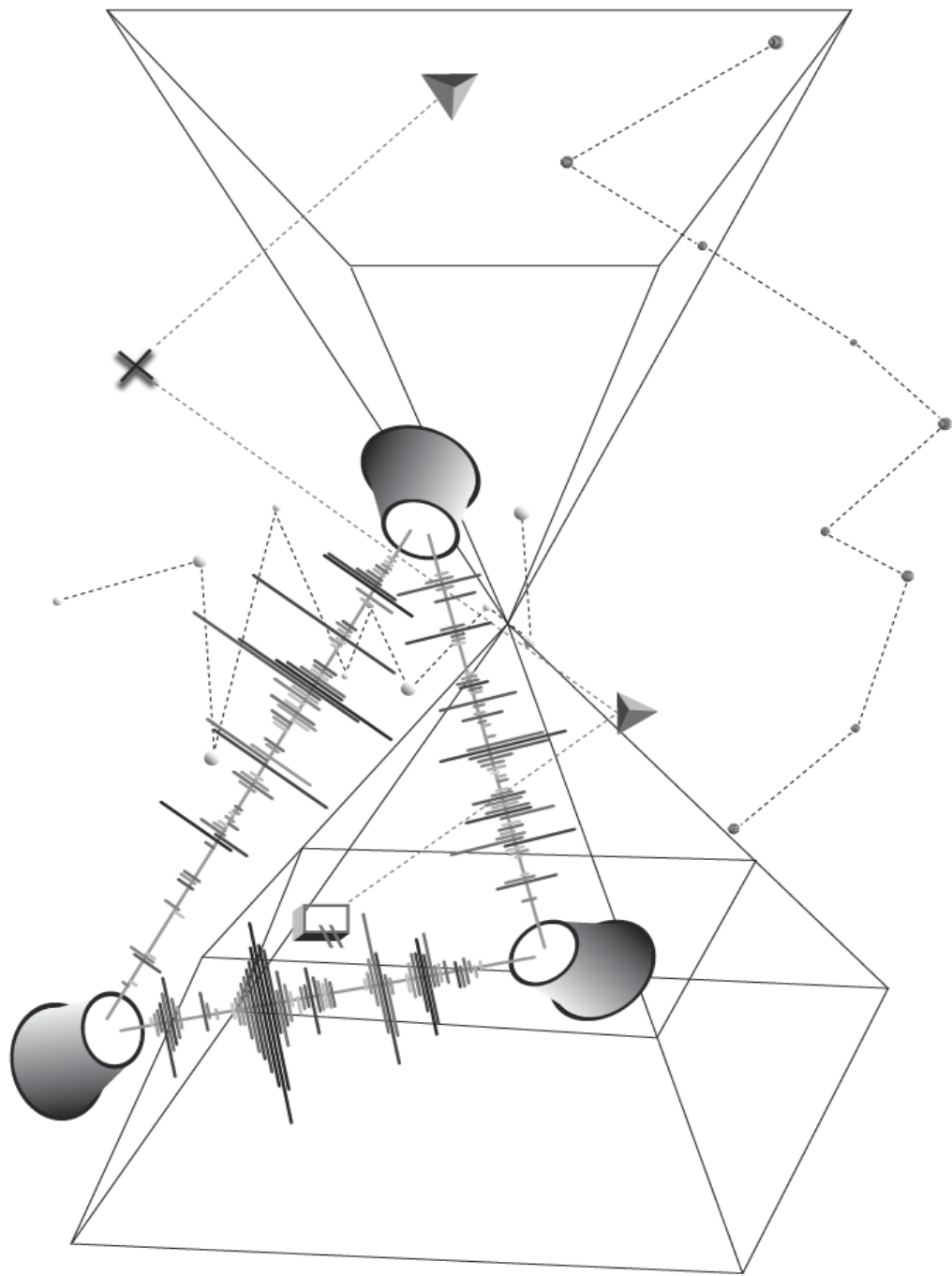


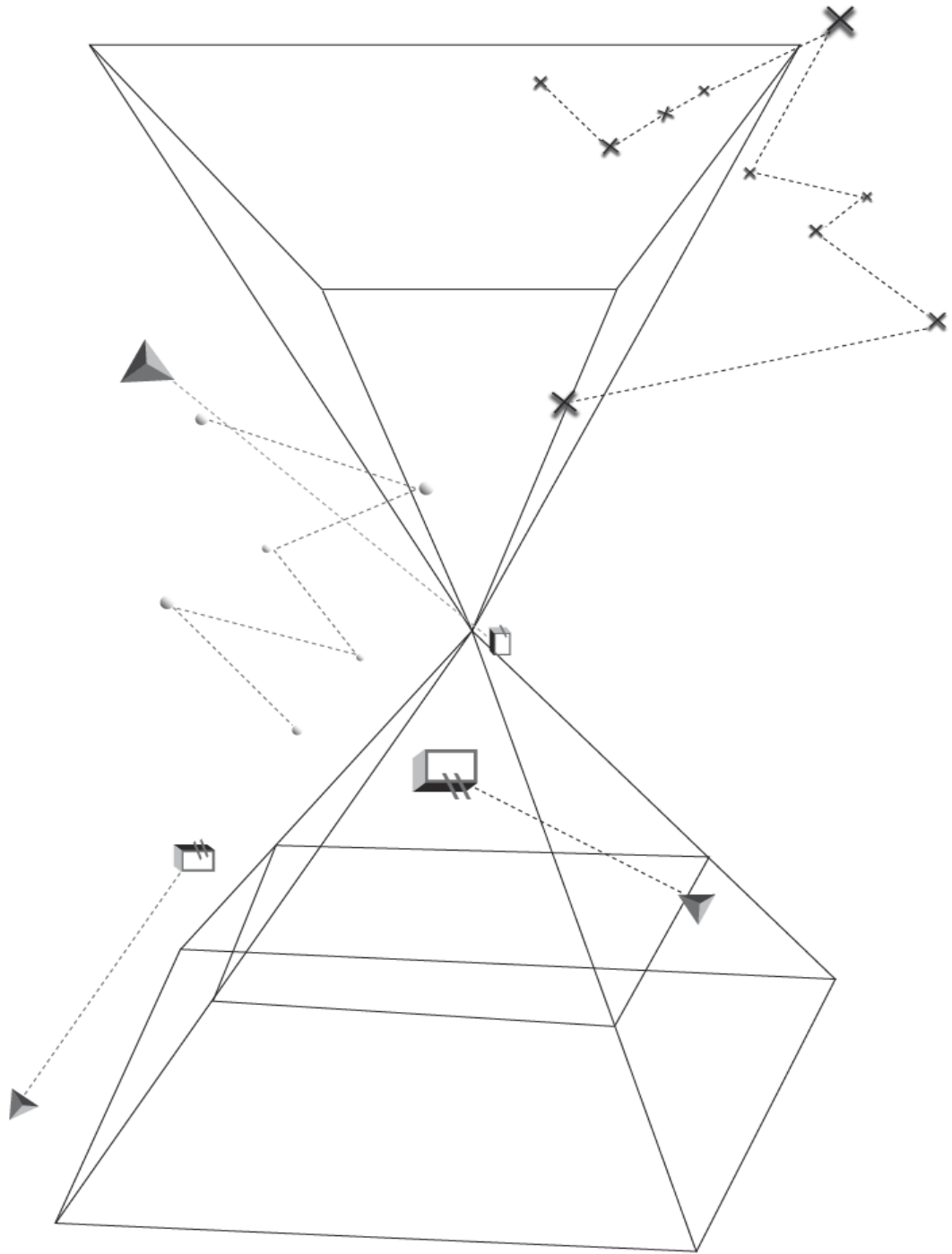


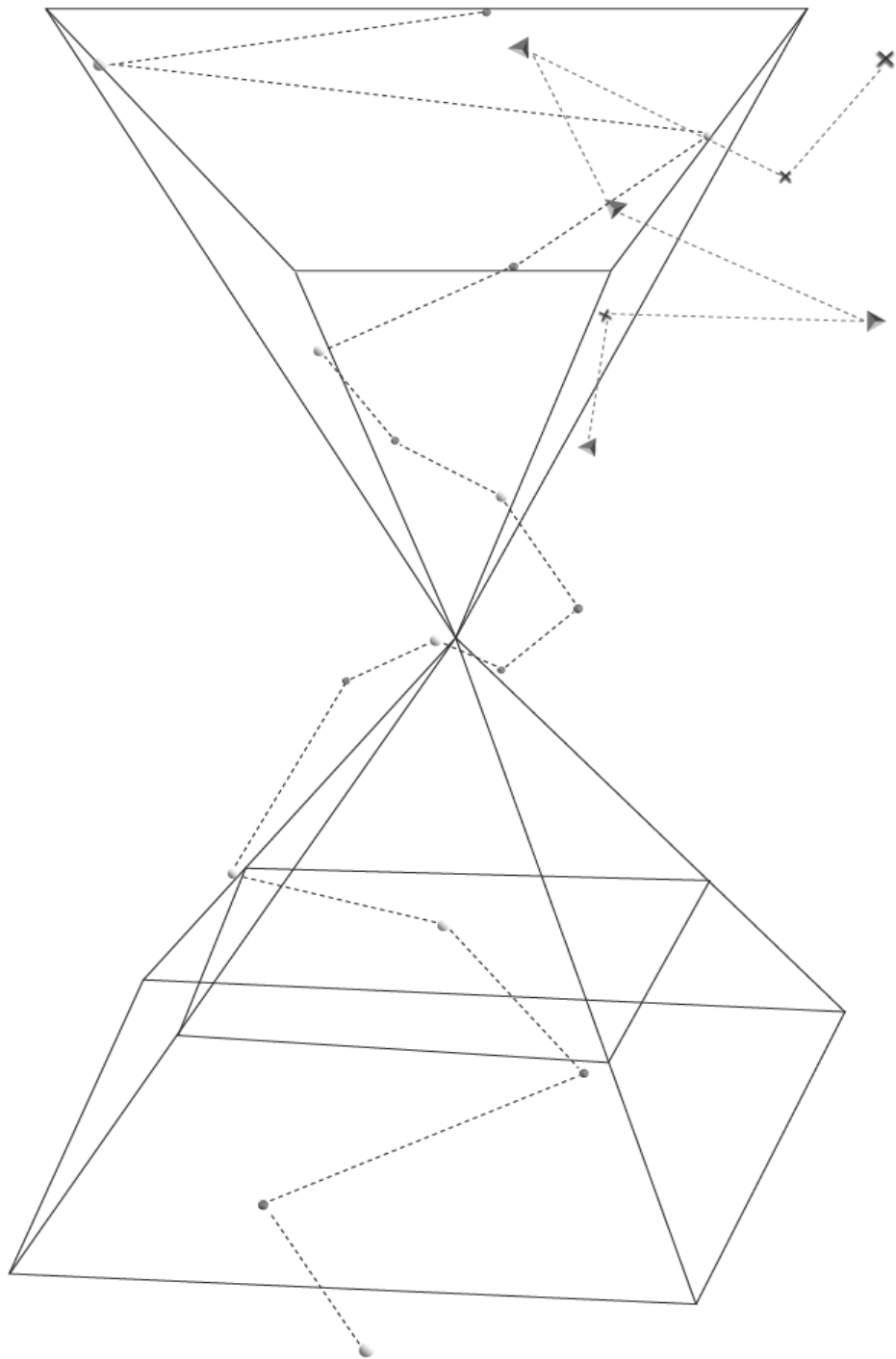


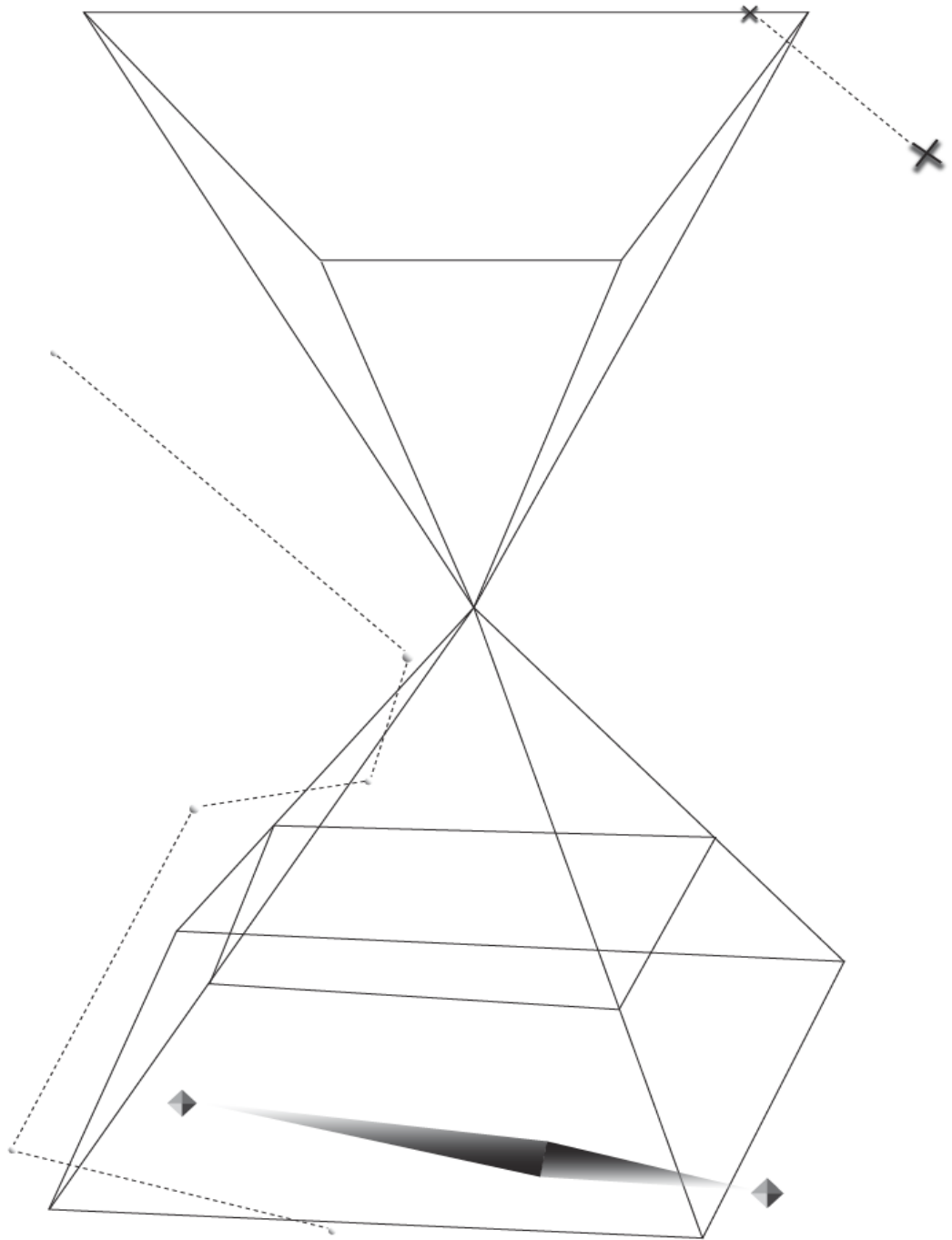












CHAPTER 4- Work for Solo Instrument

Wormhole (2021) - For Amplified Solo Violin

This piece was composed using the theoretical series of space and time bending events necessary for a wormhole to occur as its main tenet. For example, the idea of a Wormhole is based on the speculative structure linking disparate points in space-time in four spatial dimensions, where a two-dimensional being can experience a part of a three-dimensional object.¹⁴ This definition, while simple, is useful to better grasp the idea behind the model of the piece both in the structural diagram, as well as the notational decisions.

For example, the presentation of two “staves”, one for the left hand and another for the right hand, is critical to recognize the notational structure, as it reflects the abovesaid virtual bending of space-time that connects two extremely distant points in the galaxy/universe in a single two-dimensional event. In a similar fashion, all the techniques used within the piece, work in favor of the interacting edges of the event as they need a “bridge” to converge. In this sense, trajectories such as the presented “transitional indefinite pitch” in combination with the proportional bowing distances, convert the hypothetical notion of a Wormhole into a musical one. The use of added dynamic transformations has been applied to add depth, or a first approach to a tridimensional convergence of elements, into the otherwise unidimensional and somewhat “traditional” musical representation. Silence has been included in this score by means of proportionally controlled length-based blank spaces. Despite the organized nature silences possess within the compositional structure, the variable temporality each performer assigns to the piece, which fluctuates between 47-56 RPM,¹⁵ will

¹⁴ Choi, Charles Q., Spooky physics phenomenon may link universe's wormholes.

¹⁵ According to stipulated instructions in the piece’s Performance Notes.

also affect the relative length he/she assigns to silences by means of perceptual space in between relatively contiguous sounding gestures.

The gestural content of this piece was carefully chosen to represent an inexact “mirroring” of itself in as many musical dimensions as possible, starting with pitch, rhythmic configuration, dynamics, proportional durations, etcetera. Such a multi-dimensional construct aims to aesthetically represent the relative similar nature of both ends of the space-time connection. In terms of pitch (p) and pitch class (pc) content, the composition starts with a pc-0, which is aesthetically used to represent the unifying singularity of the multi-dimensional space. The first full gesture of the piece is conformed by a (01245679) octachord, which is the main basis for the entire construction of the composition. As it can be observed in the last page of the score¹⁶, the last two gestures with assigned discrete pitch, also conform an octachord with a (01235689) prime form. While the ending octachord does not have an exact similar form in comparison to the opening one, it contains most of the pitches of the original pc-set, hence reinforcing the mirroring nature of the piece as explained in the aesthetic description. In a similar fashion, the ending pitch is a pc-0, which completes the above-described mirroring concept.

Within the middle-section of the composition a similar structure can be observed. In page five¹⁷, the starting gesture of the third system proposes a contrasting element with a (013568) prime form and a tripartite half note--(half note value) triplet--quarter note-quarter note rhythmic construct. On page seven¹⁸ the first (quarter note value)-triplet on the third

¹⁶ Refer to page 9 (marked with a number 6) in the below presented score to observe the described annotations.

¹⁷ Refer to page 5 (marked with a number 2) in the below presented score.

¹⁸ Refer to page 7 (marked with a number 4) in the below presented score.

system, which has a (037) prime form, is a built after a T11 is applied to the original hexachord, and one element from each of the three parts of the first presented gesture is used as token to develop a similar movement. While the representation of the (037) triplet is not an exact mirror of the priorly exposed hexachord, it presents two similar features that make their relationship transparent. On the one hand, the above-mentioned use of an element from each part of the original gesture by means of a T11 operation, makes clear the pitch-relationship among non-contiguous segments. On the other hand, the metric diminution of the triplet in relationship to the middle segment of the original gesture shows a clear rhythmic association among trajectories. If such relationships were not transparent enough, both triplets present an almost exact parallel bowing motion and technique.

Finally, further explanation on the pc-content seems rather unnecessary given the textural nature of the piece. However, it is important to mention that all gestures are built with a mirroring pc-set transformation, in a similar fashion to the two examples briefly presented above.

WORMHOLE

FOR AMPLIFIED SOLO VIOLIN

(14' APPROX.)

EDUARDO OREA

2021

WORMHOLE

For amplified solo violin

Eduardo Orea 2021

Performance Notes

- For the amplification the violin must use a contact microphone (if not available a stand microphone is acceptable)

- Tempo :♩: between 56 - 67 RPM

→ = Bowing

B [T] → = Indicates the position of the bow in the instrument

B = Bridge T = Tasto

~ = Circular bowing

—•— = Regular bowing

□ = Indicates muted strings (Press the indicated pitch-class and slightly place a finger / palm on the remaining strings)

▲ = Indefinite pitch (transitional movement from bridge to tailpiece)

↔ = Marks the proportional distance in the transitional bow movement

* The position for all bowings is col legno

* Long gestures use a col legno tratto bowing

* Short gestures use a col legno batutto bowing

□ = Play in the tailpiece (no pitch assigned)

◄ ► = Change in transparencies indicates dynamic transformation, the darker shadowing the stronger / louder, and the lighter shadowing the "weaker" / softer

• • • = Short - Articulated pitches. (Changes in size and transparencies indicate dynamic motion)

* Specific dynamics are written below pizzicato gestures

— " ca — = Indicates approximate length of both PC- transitional and tailpiece gestures

— * — = Indicate alignment between bowing technique and articulation. (present only at the beginning of each gesture)








WORMHOLE








Eduardo Orea 2021

For amplified solo violin

Performance Notes 2

Articulations

	Regular Sound: Play the given pitch-classes in the string that is most convenient according to the gestural development of each phrase.
	"Natural Harmonic": Play the given pitch-classes but only by applying slight pressure on the corresponding string so it does not make contact with the fingerboard. (The string choice is dependent on the performer according to the gestural transformational needs of the piece).
	Artificial Harmonic: Play the given pitch-class and apply slight pressure on the pc defined with a diamond notehed to create the written harmonic effect.
	Right Hand Pizzicato: Place your left hand on the given pitch-class and pluck the corresponding string with the right hand.
	Left Hand Pizzicato: Play the given pitch-class by plucking the corresponding string in the pc-position with the left hand only.
	Silent Fingering: Slightly tap the corresponding string(s) with the left hand in the proper positioning for the given pitch-classes.
	Tremolo: Fast bouncing/rebound bowing gesture (A "natural harmonic" or artificial harmonic may be added to this textural transformation).

	"Burst": Apply the "natural harmonic" technique plus an accent in addition to a short rebound bowing technique.
	"Noise": Apply the artificial harmonic technique plus a fast tremolo texture in addition to a slight bowing overpressure.
	"Scratch Tone": Play a regular given pitch-class in addition to a strong bowing overpressure.
	"Metal": Play the "natural harmonic" technique plus an staccato in addition to a molto col legno batutto bowing.
	"Transition": Combination of an indefinite pitch with a bowing motion described in the previous section.
	"Vibration": A fast tremolo-like textural motion using a silent-fingering technique on the left hand.
	"Silence": Slaff blanks indicate silence in between gestures in proportion to the chosen tempo, the bigger the blank space, the longer the absence.

Violin and Trombone/Tuba (B/T) musical score. The Violin part features a dynamic marking of *p* and a triplet of eighth notes. The Trombone/Tuba part includes a dynamic marking of *mf* and a triplet of eighth notes. The score is divided into two systems by a double bar line.

Violin and Trombone/Tuba (B/T) musical score. The Violin part includes a dynamic marking of *f* and a triplet of eighth notes. The Trombone/Tuba part includes a dynamic marking of *f* and a triplet of eighth notes. A bracket labeled "5^a ca" spans across the Trombone/Tuba staff. The score is divided into two systems by a double bar line.

Violin and Trombone/Tuba (B/T) musical score. The Violin part includes a dynamic marking of *mp* and a triplet of eighth notes. The Trombone/Tuba part includes a dynamic marking of *f* and a triplet of eighth notes. Brackets labeled "6", "3", "5", and "7" are present under the Trombone/Tuba staff. The score is divided into two systems by a double bar line.

Violin and Trombone/Tuba (B/T) musical score. The Violin part includes a dynamic marking of *f* and a triplet of eighth notes. The Trombone/Tuba part includes a dynamic marking of *f* and a triplet of eighth notes. A bracket labeled "5^a ca" spans across the Trombone/Tuba staff. The score is divided into two systems by a double bar line.

2

7^{ca}

B
T
Vln.

B
T
Vln.

5^{ca}

B
T
Vln.

B
T
Vln.

3

Violin (Vln.) and Trombone/Tuba (B., Tl.) score. The Violin part features a melodic line with a triplet of eighth notes, a sixteenth-note triplet, and a sixteenth-note triplet. The Trombone/Tuba part has a rhythmic accompaniment with a triplet of eighth notes and a sixteenth-note triplet. Dynamics include *mf* and *fff*. A box highlights a specific measure in the Violin part.

Violin (Vln.) and Trombone/Tuba (B., Tl.) score. The Violin part has a melodic line with a triplet of eighth notes, a sixteenth-note triplet, and a sixteenth-note triplet. The Trombone/Tuba part has a rhythmic accompaniment with a triplet of eighth notes and a sixteenth-note triplet. Dynamics include *mp*, *mf*, and *f*. A box highlights a specific measure in the Violin part.

Trombone/Tuba (B., Tl.) score. The part features a melodic line with a triplet of eighth notes, a sixteenth-note triplet, and a sixteenth-note triplet. Dynamics include *f* and *mf*. A box highlights a specific measure in the Trombone/Tuba part.

Violin (Vln.) and Trombone/Tuba (B., Tl.) score. The Violin part has a melodic line with a triplet of eighth notes, a sixteenth-note triplet, and a sixteenth-note triplet. The Trombone/Tuba part has a rhythmic accompaniment with a triplet of eighth notes and a sixteenth-note triplet. Dynamics include *f* and *fff*. A box highlights a specific measure in the Violin part.

4

Br Tl Vln.

mp *f*

Br Tl Vln.

mp *mf*

3° ca

Br Tl Vln.

mp *mf*

3° ca

Br Tl Vln.

mp *mf*

3° ca 5° ca

System 1: Bassoon (B) and Trombone (T) parts with a rest. Violin (Vln.) part with a dynamic marking of *ff*. Includes a diagram of a violin bow and a dynamic wedge.

System 2: Bassoon (B) and Trombone (T) parts with a dynamic marking of *f*. Violin (Vln.) part with a dynamic marking of *mf*. Includes a diagram of a violin bow and a dynamic wedge.

System 3: Bassoon (B) and Trombone (T) parts with a dynamic marking of *mf*. Violin (Vln.) part with a dynamic marking of *mf*. Includes a diagram of a violin bow and a dynamic wedge.

System 4: Bassoon (B) and Trombone (T) parts with a dynamic marking of *mf*. Violin (Vln.) part with a dynamic marking of *mf*. Includes a diagram of a violin bow and a dynamic wedge.

6

This page contains two systems of musical notation for Violin (Vln.) and Trombone (Tbn.).

System 1: The Vln. part begins with a dynamic marking of *mp*. The Tbn. part has a dynamic marking of *f*. A technical diagram shows a box with four dots representing fingerings. A second diagram shows a box with seven dots, with a '7' written below it, indicating a specific fingering sequence. A dynamic marking of *mp* is shown with a hairpin.

System 2: The Vln. part has a dynamic marking of *fff*. The Tbn. part has a dynamic marking of *mp*. A technical diagram shows a box with five dots. A second diagram shows a box with five dots and a '5' written below it, with an arrow pointing to the right and the text '5' ca' above it, indicating a slide or breath mark.

CHAPTER 5- Work for Instrument/Ensemble using Electronics

Space-Time Burst (2021) - For Amplified Solo Trombone and Live Electronics

This piece uses the small but violent clashes between matter and anti-matter as a mainframe of structural development. On one hand, the series of small gestures and textural constructions aesthetically signify an abstract representation of the material fluctuations in the space-time. On the other hand, the live electronics embody multiple alterations through pseudo-randomized coding, which resembles the unpredictable behavior of quantum particles constituting the immense but still unrevealed presence of anti-matter through sound waves. The mentioned pseudo-randomization was built using a Max MSP patch where eight different delay channels were plugged to eight different effects (i.e., granular, harmonizer, etc.). Each one of the mentioned channels was then connected to a toggle that identified a specific frequency range that triggered the different effects when the performer reached certain rates.¹⁹ Finally, all controlling delays were plugged to a .coll page command that set specific time reactions for each channel.

In this composition, the use of added musical dynamic changes on top of the gestural motion has been applied to add layers of complexity, in terms of a pseudo-tridimensional representation, into an otherwise unidimensional picture. In addition, the gestural content of this piece (i.e., modified multiphonics) was selected to represent the dual occupation of space in a similar time as it occurs with the above discussed quantum particles. This last

¹⁹ Refer to page four of the below presented score to observe the presentation mode of the described MAX-patch.

dimensional consideration aims to aesthetically represent the simultaneity of events in a given moment and their proportional repercussions.

In terms of pitch (p) and pitch-class (pc) content, the piece is based on a (0246) tetrachord which gradually mutates throughout the piece. The pc-6 and pc-2 with an *appoggiatura* function within that first gestures, are also used to build full ideas within the piece's development. A clear example of this role transformation can be observed in the second gesture with fixed pitch within the same system as the original tetrachord. In such presentation, pc-6 is presented as one of the main members of the group, while the supporting *appoggiaturas* (pc-2 and pc-7) include one member of the previously presented *appoggiaturas* (pc-2) and a new member (pc-7) which will follow the same role-mutation as one of its previous peers. Soft exchanges such as the presented above are crucial to understand the fixed pitch structure of the composition. Despite the relevance of the above-described minor transformations, major operations also play an important role within the composition's framework. In the last page²⁰, the first gesture of the fifth system reintroduces an almost exact "copy" of the original statement, using a (0246) prime form as a product of a T4I operation. If the operation does not suffice a clear relationship among groupings, the metric and contour similarity denote a clear rhythmic association among trajectories.

Finally, further explanation on the pc-content seems rather unnecessary given the textural nature of the piece. However, it is important to mention that all gestures are built with a role-mutation and pc-set transformation, in a similar fashion to the two examples briefly presented above.

²⁰ Refer to page 6 (marked in the score with a number 2) within the below presented score to identify annotations.

SPACE-TIME BURST

For Solo Trombone and Live Electronics
(Between 5' and 8' approx.)

Eduardo Orea

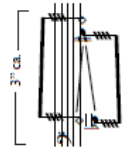
2021

PERFORMANCE NOTES

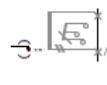
GENERAL

- * The trombone must be amplified and connected to the live electronics.
- * If possible, two speakers must be placed at both sides of the performing space to increase the effect of the live interface.
- * Specific instructions regarding the live electronics setup are described below.

TEMPO



Value of each pitch and/or gesture is relative to the space they occupy within the determined length (spatial proportion).




Gestures with assigned rhythmic values must be played at ♩ = 50 - 65

SILENCE

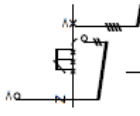
Blank spaces indicate silence. The length of the silence depends on the proportional size of the segment in relationship to its contiguous sonic fragments.

PITCH

Sections with indicated fixed pitch must be played as written.



For sections without indicated fixed pitch, the performer must choose a register and intervallic content for the gesture according to its positioning in relationship to the line.



Single line indicates approximate center/middle register/range of the trombone.

Chromatic succession is not to be played.


Alternate (balance) between accidentals in any order (♭ ♯ ♯).

DYNAMICS

- * Change in transparencies indicate dynamic motion. Lighter/thinner color in lines, beams, noteheads, etcetera, indicate softer dynamics, and darker/thicker gestures indicate stronger dynamics.
- * Transitions in between transparencies denote gradual crescendos and decrescendos according to the performer's interpretation of the dynamic range.

TEXTURAL CHART

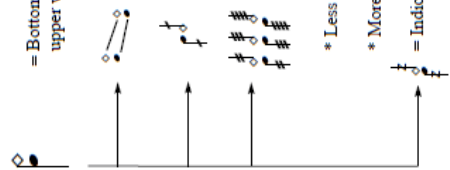
"REGULAR PITCH"

Sord.

 Regular pitch altered by the use of a mute (verbal indication).

"Laissez vibrer" indicates prolongation of the gesture (applies to all textures).

"MULTIPHONIC"

= Bottom voice must be played and upper voice must be sung.




* Less lines indicate slower FT.
 * More lines indicate faster FT.
 = Indicates added "buzz".

* If any singing voice is either too high or too low for the performer's vocal range, a comfortable octave in relationship to the given pitch will achieve the intended texture.

"TAP"

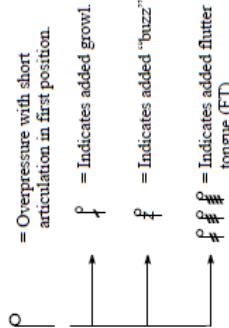
= Tap tongue against mouthpiece to create a percussive effect.



* Less lines indicate slower FT.
 * More lines indicate faster FT.

"GRANULAR"

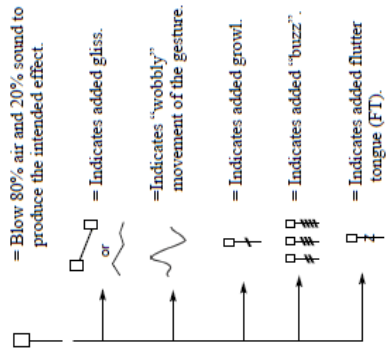
= Overpressure with short articulation in first position.



* Less lines indicate slower FT.
 * More lines indicate faster FT.

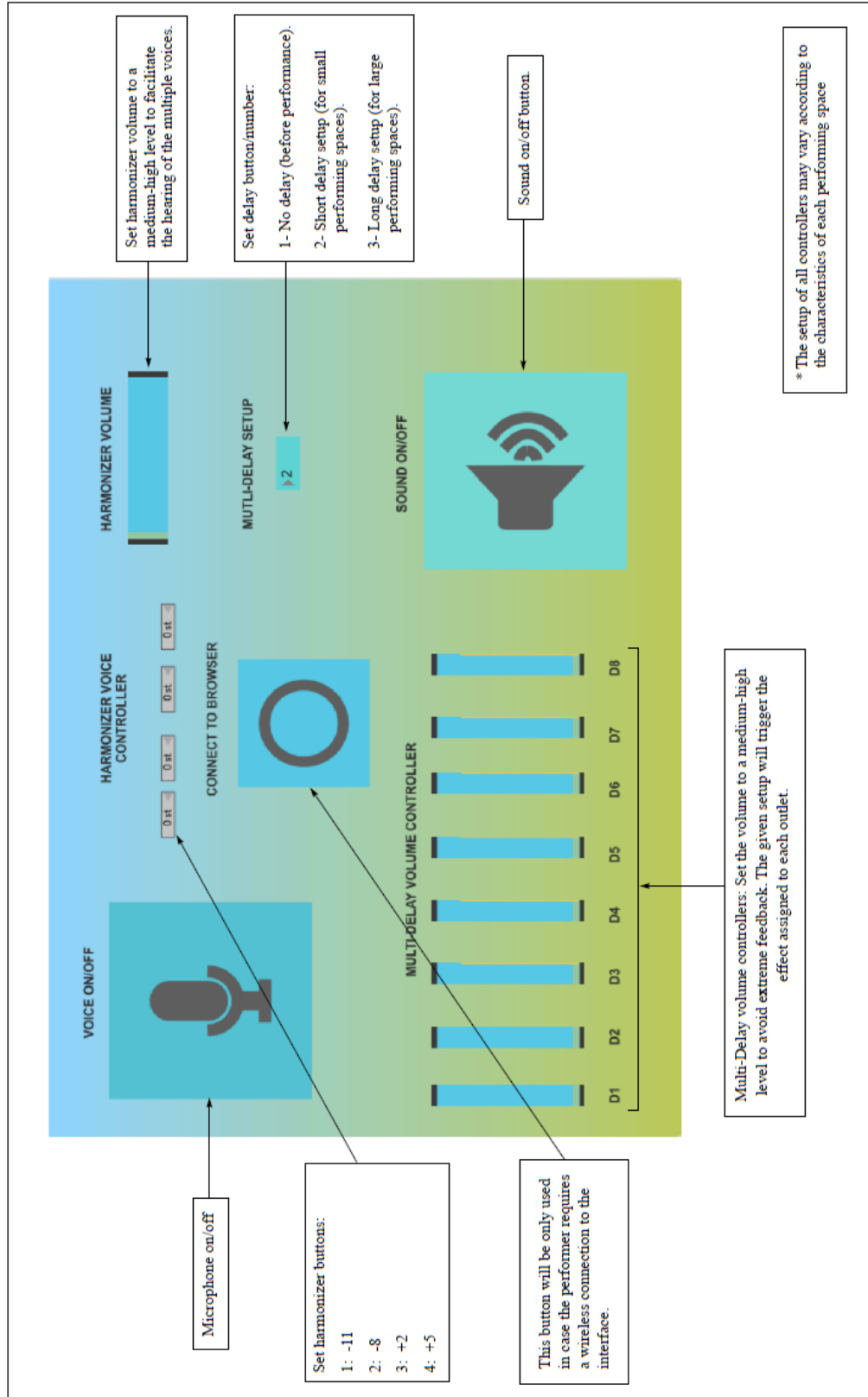
"WIND"

= Blow 80% air and 20% sound to produce the intended effect.



* Less lines indicate slower FT.
 * More lines indicate faster FT.

LIVE ELECTRONICS SETUP



Space-Time Burst

Eduardo Orea
2021

For Solo Trombone and live electronics

7'' ca.

9'' ca.

11'' ca.

13'' ca.

15'' ca.

17'' ca.

19'' ca.

5'' ca.

7'' ca.

*Sord.

Musical score system 1, featuring a treble clef and a key signature of one sharp (F#). The system contains three staves. The first staff has a bracket labeled "5^{ta} ca." and a dynamic marking of (f) . The second staff has a bracket labeled "11^{ta} ca." and a dynamic marking of (f) . The third staff has a bracket labeled "7^{ta} ca." and a dynamic marking of (f) .

Musical score system 2, featuring a treble clef and a key signature of one sharp (F#). The system contains two staves. The first staff has a bracket labeled "3^{ta} ca." and a dynamic marking of (f) . The second staff has a dynamic marking of (f) .

*Senza Sord.

Musical score system 3, featuring a treble clef and a key signature of one sharp (F#). The system contains two staves. The first staff has a bracket labeled "6^{ta} ca." and a dynamic marking of (f) . The second staff has a bracket labeled "5^{ta} ca." and a dynamic marking of (f) .

Musical score system 4, featuring a treble clef and a key signature of one sharp (F#). The system contains two staves. The first staff has a bracket labeled "3^{ta} ca." and a dynamic marking of (f) . The second staff has a bracket labeled "5^{ta} ca." and a dynamic marking of (f) .

Musical score system 5, featuring a treble clef and a key signature of one sharp (F#). The system contains two staves. The first staff has a bracket labeled "9^{ta} ca." and a dynamic marking of (f) . The second staff has a bracket labeled "11^{ta} ca." and a dynamic marking of (f) .

*Sord.

Musical score system 6, featuring a treble clef and a key signature of one sharp (F#). The system contains two staves. The first staff has a bracket labeled "5^{ta} ca." and a dynamic marking of (f) . The second staff has a dynamic marking of (f) .

Musical score system 7, featuring a treble clef and a key signature of one sharp (F#). The system contains two staves. The first staff has a dynamic marking of (f) . The second staff has a dynamic marking of (f) .

CHAPTER 6- Interdisciplinary Work

Nebula (Cloud 2, 2020) - For Four Amplified Bowed String Instruments in Any Configuration + Optional video projection.

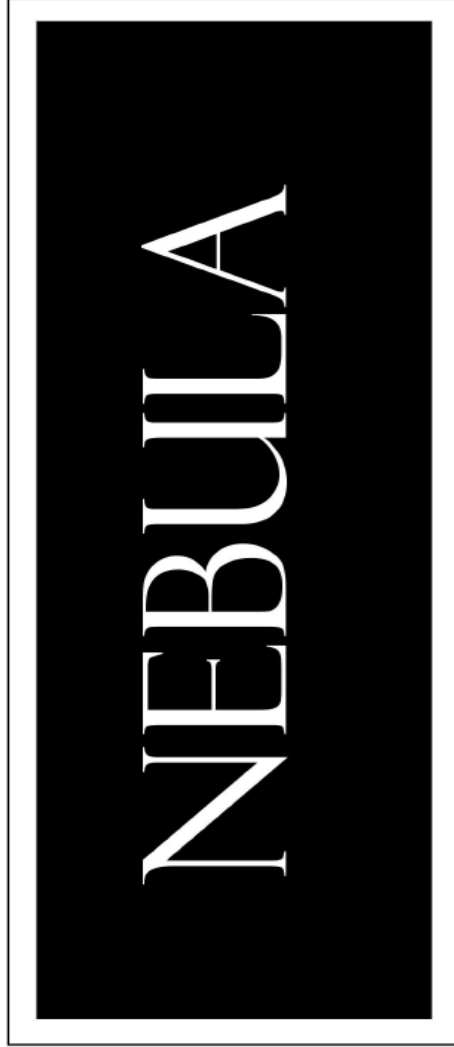
This piece has been composed using as its main foundation, the violent and deathly explosion of the Crab Nebula.²¹ First, the placement of each gesture is crucial to the piece's development because it reflects the relative spatial associations between the main vectors taken as structural arguments for the composition.

Second, sound emitted in a nebula's explosion is a rather difficult element to represent in musical values due to imperceptible properties of the void in space. That being said, the extremely low dynamic range proposed for the structural diagram of this composition resembles the abovementioned relative emptiness. The amplification method aims to represent the temporal motion of light from a specific viewpoint by adding a slight reverberation. For instance, the application of specific extended techniques such as "muted strings + natural harmonic" is an abstraction of the high frequencies emitted by the previously discussed explosion with a large spectral content in a low-frequency environment.

The interdisciplinary part of the project emerged as product of the collaboration with the Sponte string quartet for the Mexican premier of Nebula (Cloud, 2). The composition was proposed to be included within the *Festival Internacional Camerata 21* (FICA-21) as part of the quartet's contemporary performance requirement. After review and subsequent approval, and due to the online format of the festival (only applicable for 2020 and 2021), it was decided to develop a visual projection of the piece's most important segments. The idea

²¹ Nola Taylor Tillman, The Crab Nebula (M1): Facts, discovery & images.

included two different videos of the Crab nebula in relative motion and positioning in space being projected behind the ensemble. To achieve such goal, a *caja negra* (black box) performing space was rented and prepared for the recording.



For four amplified bowed string instruments
(5' approx.)

EDUARDO OREA

—
Cloud-2 (2020)

NEBULA

Performance Notes - Part I

◆GENERAL

- All instruments must be amplified (preferably contact mics).
- The duration of each system is about 35 seconds. Each gesture has its own approximate duration noted in brackets.

◆PITCH

- Pitch succession must be non-diatonic (e.g., Maj/min scale).
- Chromatic succession is not allowed.
- Alternate between accidentals in any order (b-~~♯~~-#).

◆SILENCE

- Blank spaces indicate silence whose length depends on the proportional size of the segment. Consider, this is in relationship to its contiguous sonic fragments in terms of structural and/or individual duration.

◆ALIGNMENT

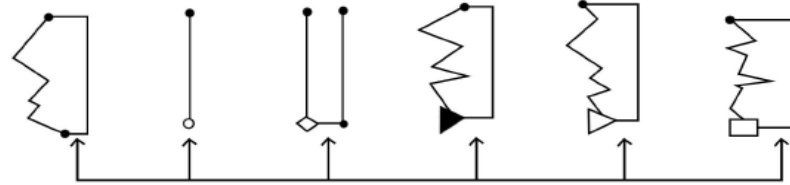
- Square brackets delimit instrument register. The middle line of the square bracket indicates the approximate center of the register.
- Red dashed-line cues indicate that two or more textures have exact alignment, their onset is the same.
- Blue dotted-line cues indicate that two or more textures have inexact alignment, they are offset. They can also show that offset textures are played sequentially.



NEBULA

Performance Notes - Part II

ARTICULATIONS - A



Gliss: Indicates an added glissando to the designated texture according to the initial notehead marking.

Natural Harmonic: Play the chosen pitch but only by applying slight pressure on the corresponding string so it does not make contact with the fingerboard. (The string choice is dependent on the performer according to the gestural transformational needs of the piece).

Artificial Harmonic: Play the chosen pitch and apply slight pressure on the pitch defined with a diamond notehead to create the written harmonic effect. The distance between both noteheads will determine the interval of the artificial harmonic.

Bowing for held textures is:
molto col legno tratto.

Scratch tone + Gliss (Scratch Tone: Play a regular chosen pitch in addition to a strong bowing overpressure in combination with a glissando.)

Scratch tone + Gliss + Natural Harmonic (Noise: Play a slight overpressure in combination with the natural harmonic technique and an added glissando to generate a "noisy" effect.)

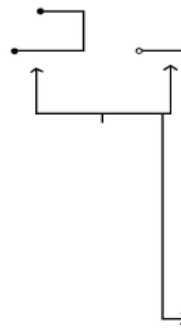
Muted strings + Gliss (Muted: Press the chosen pitch and slightly place a finger/palm on the remaining strings to "mute" them. Add a glissando to the mentioned texture.)

NEBULA

Performance Notes - Part II

ARTICULATIONS – B

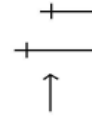
Bowing for short texture is:
molto col legno battuto.



Change to *pizzicato* is indicated
with verbal instruction.

“Regular sound”: Firmly place your finger to produce a firm, steady sound.

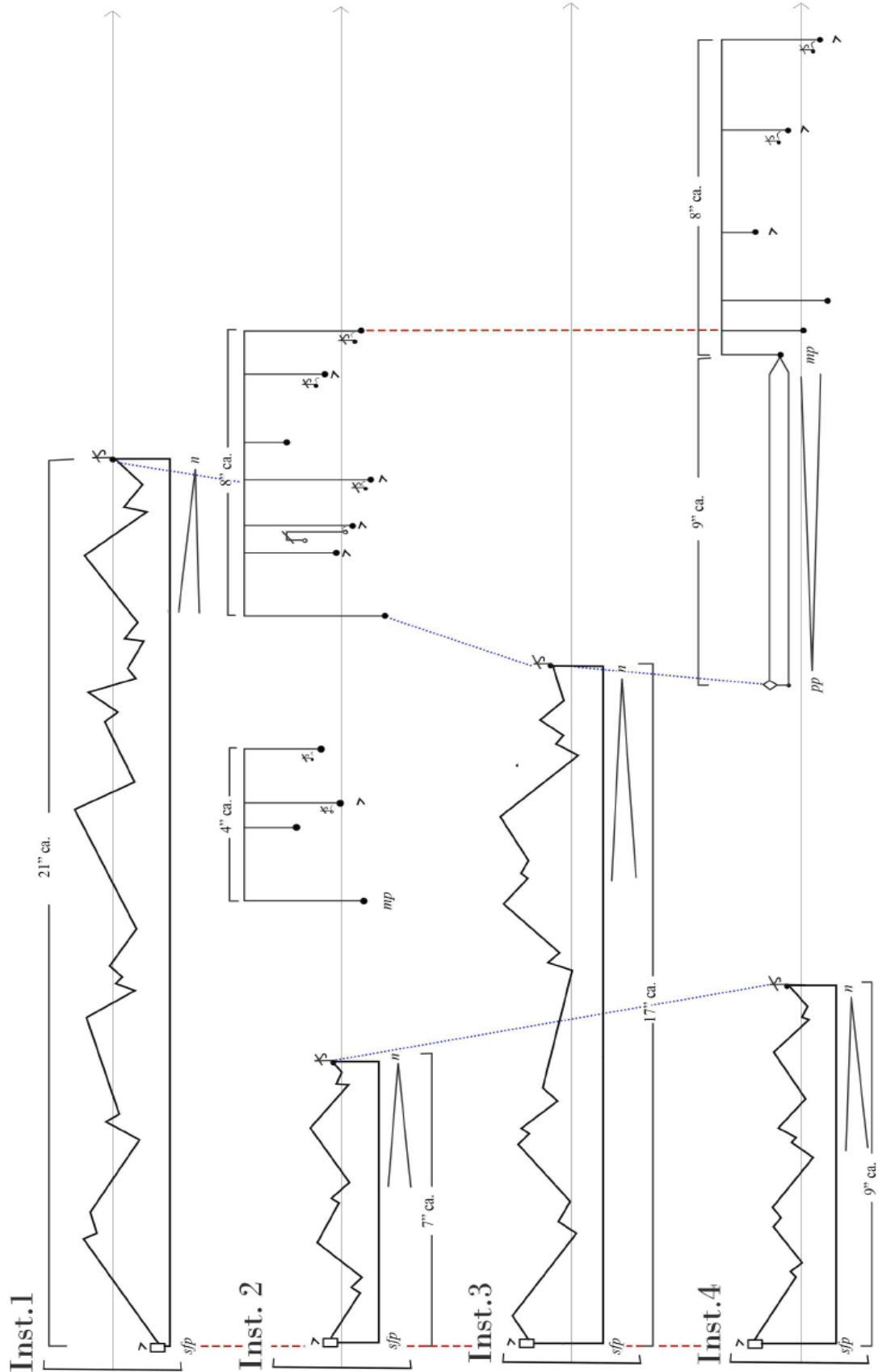
Natural Harmonic: Play the chosen pitch but only by applying slight pressure on the corresponding string so it does not make contact with the fingerboard. (The string choice is dependent on the performer according to the gestural transformational needs of the piece).

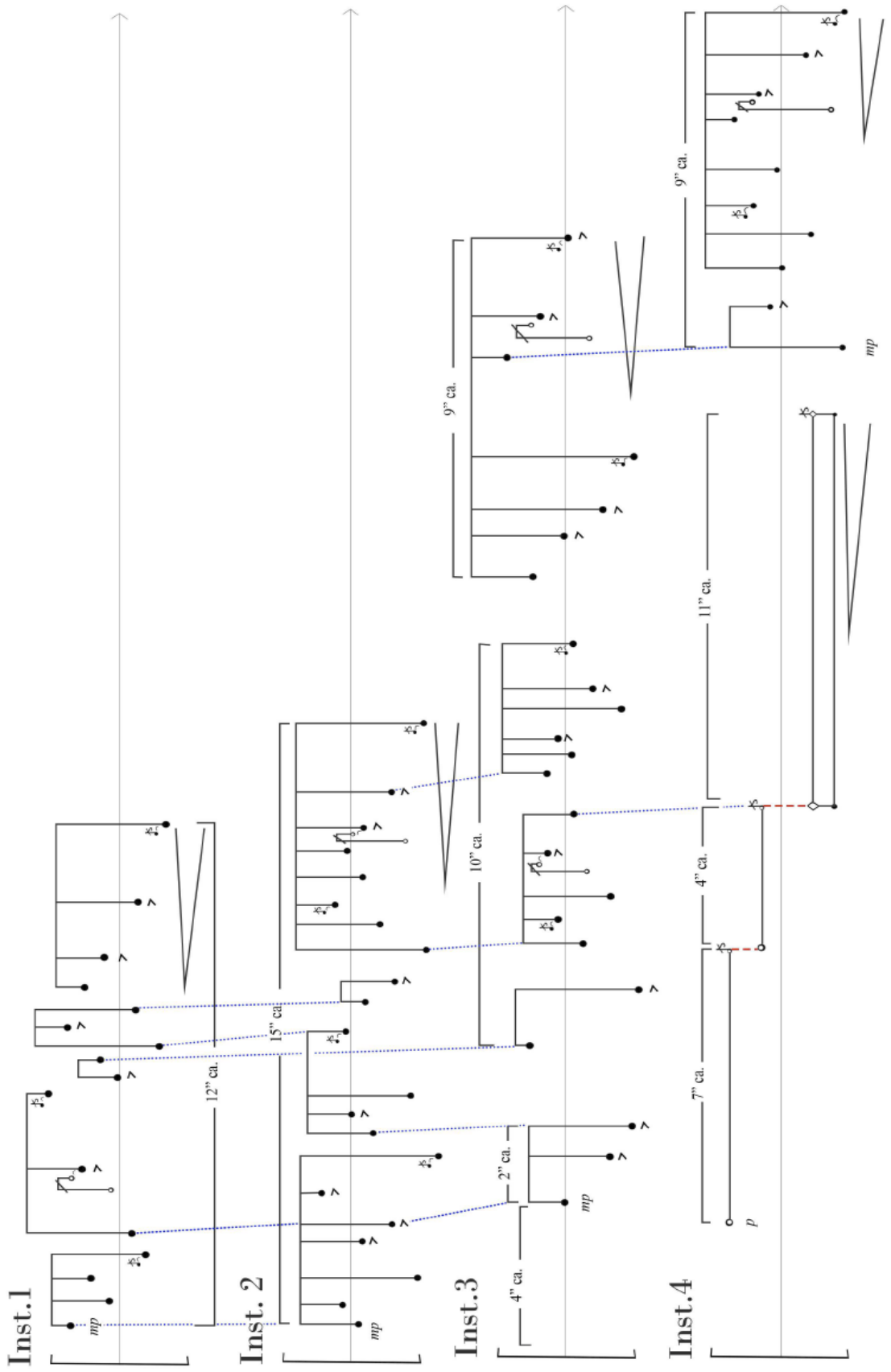


Left Hand Pizz: Play the given pitch by plucking the corresponding string in the pitch position with the left hand only.

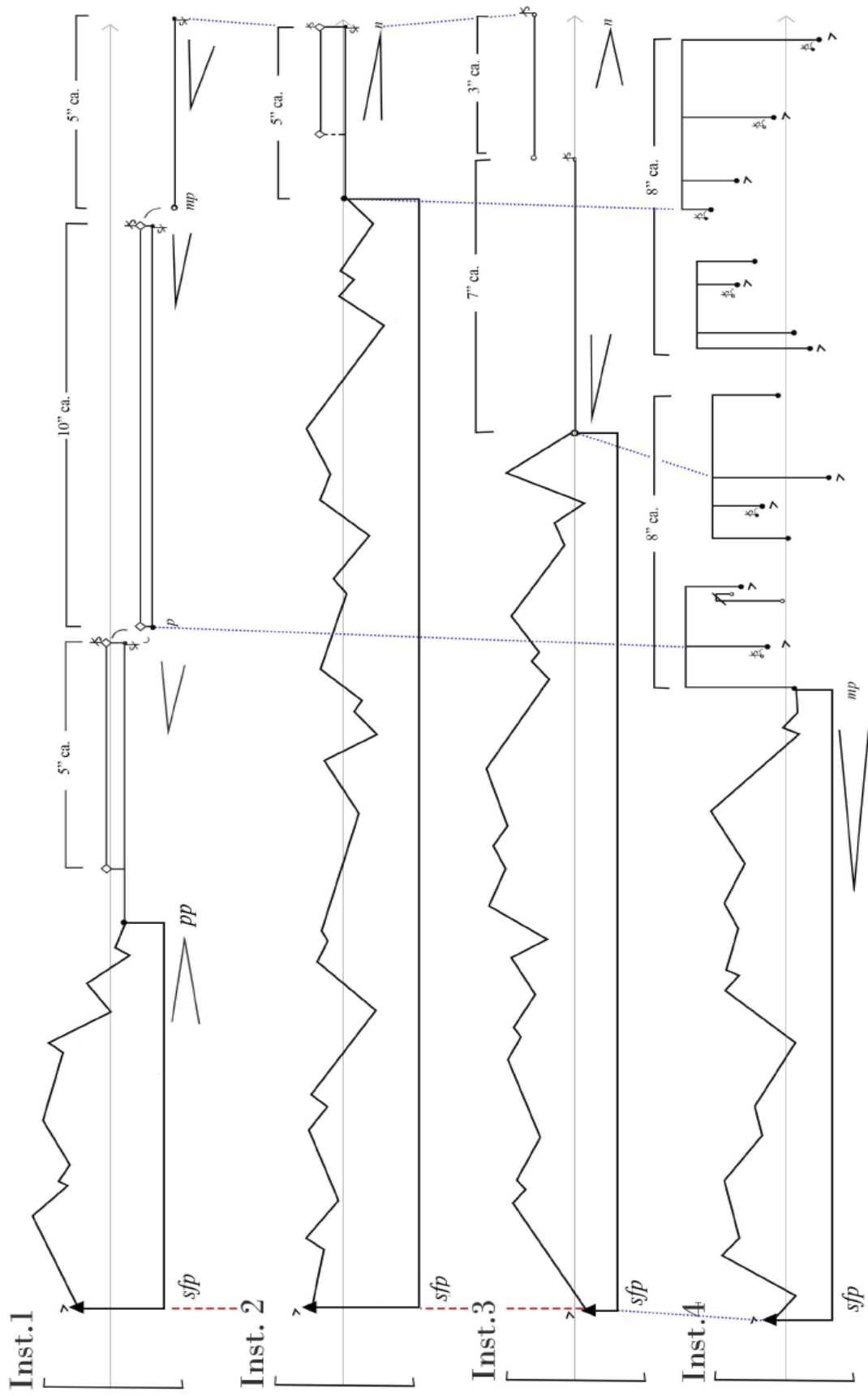


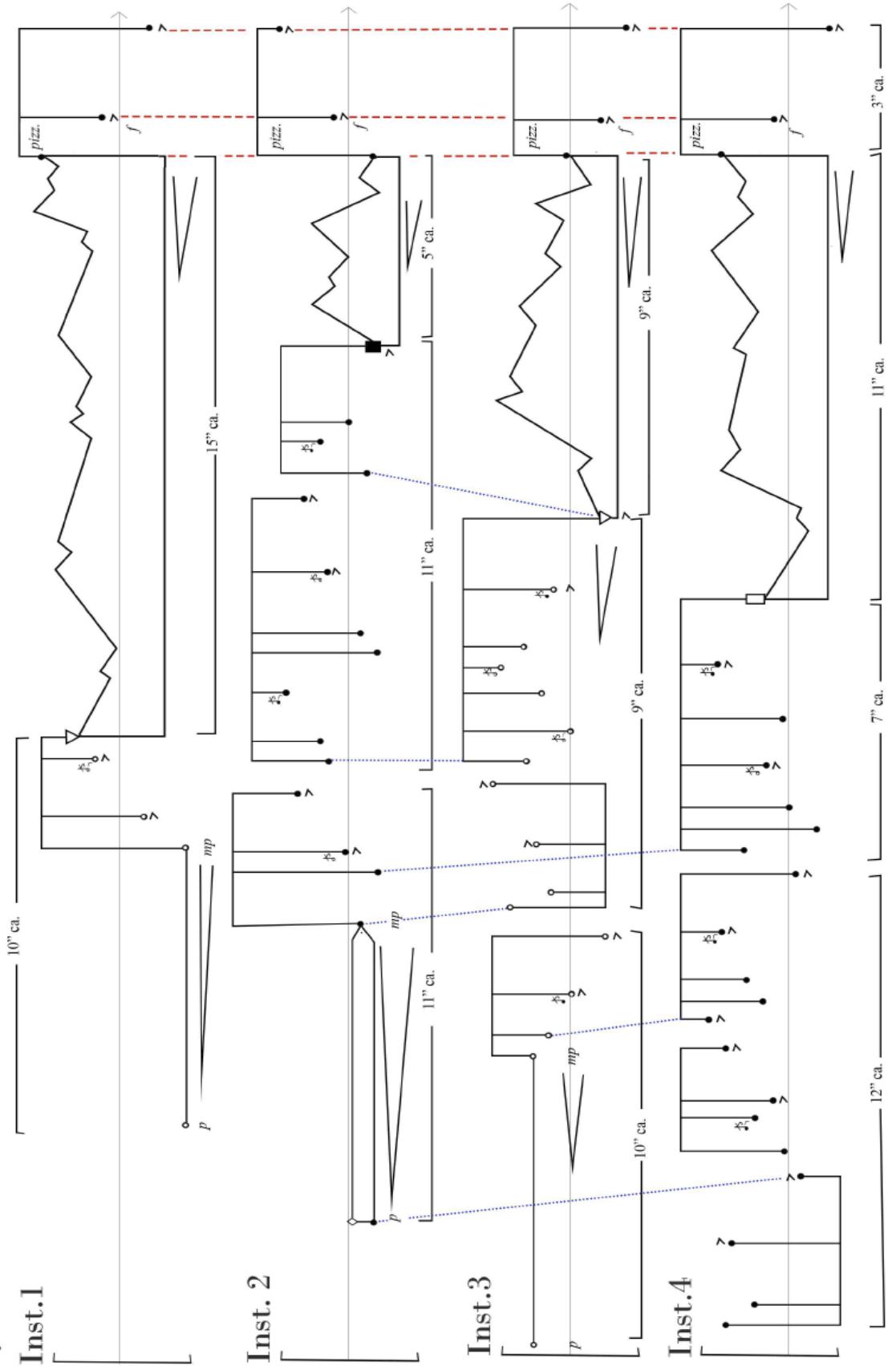
NEBULA





3





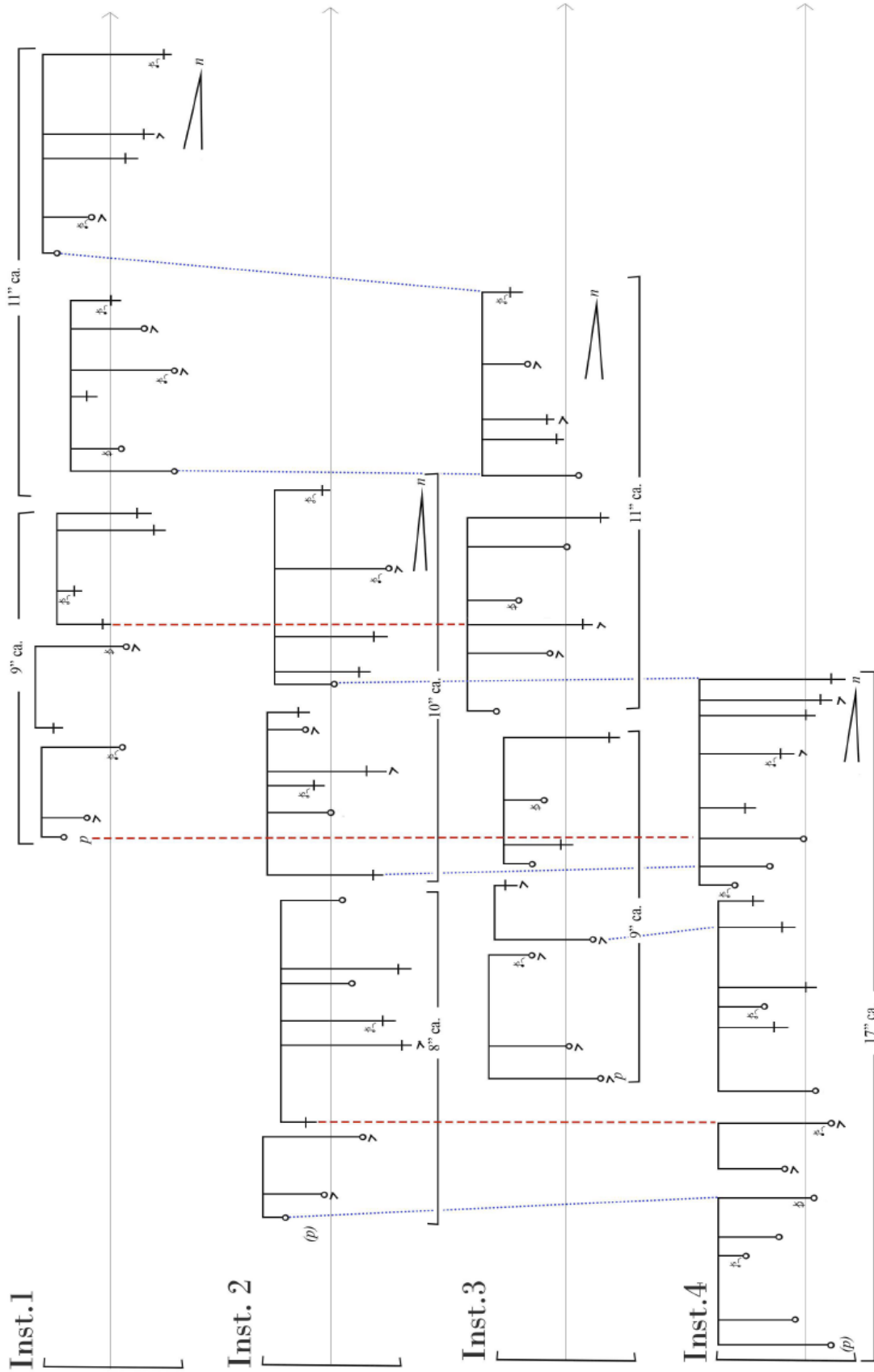
Inst. 1

The score consists of four staves, each representing an instrument. The notation includes various dynamics such as *pp*, *ppp*, *ff*, and *fff*, as well as articulations like *arco* and *pizz.*. The score is divided into four measures, with durations of approximately 10", 3", 5", and 2" indicated below the staves. A large bracket on the right side of the page spans all four staves and is labeled "9" ca.". A smaller bracket on the right side of the page spans the first two staves and is labeled "2" ca.". A third bracket on the right side of the page spans the last two staves and is labeled "5" ca.". A fourth bracket on the right side of the page spans the first two staves and is labeled "3" ca.". The notation includes various symbols such as *>*, *X*, and *Λ*.

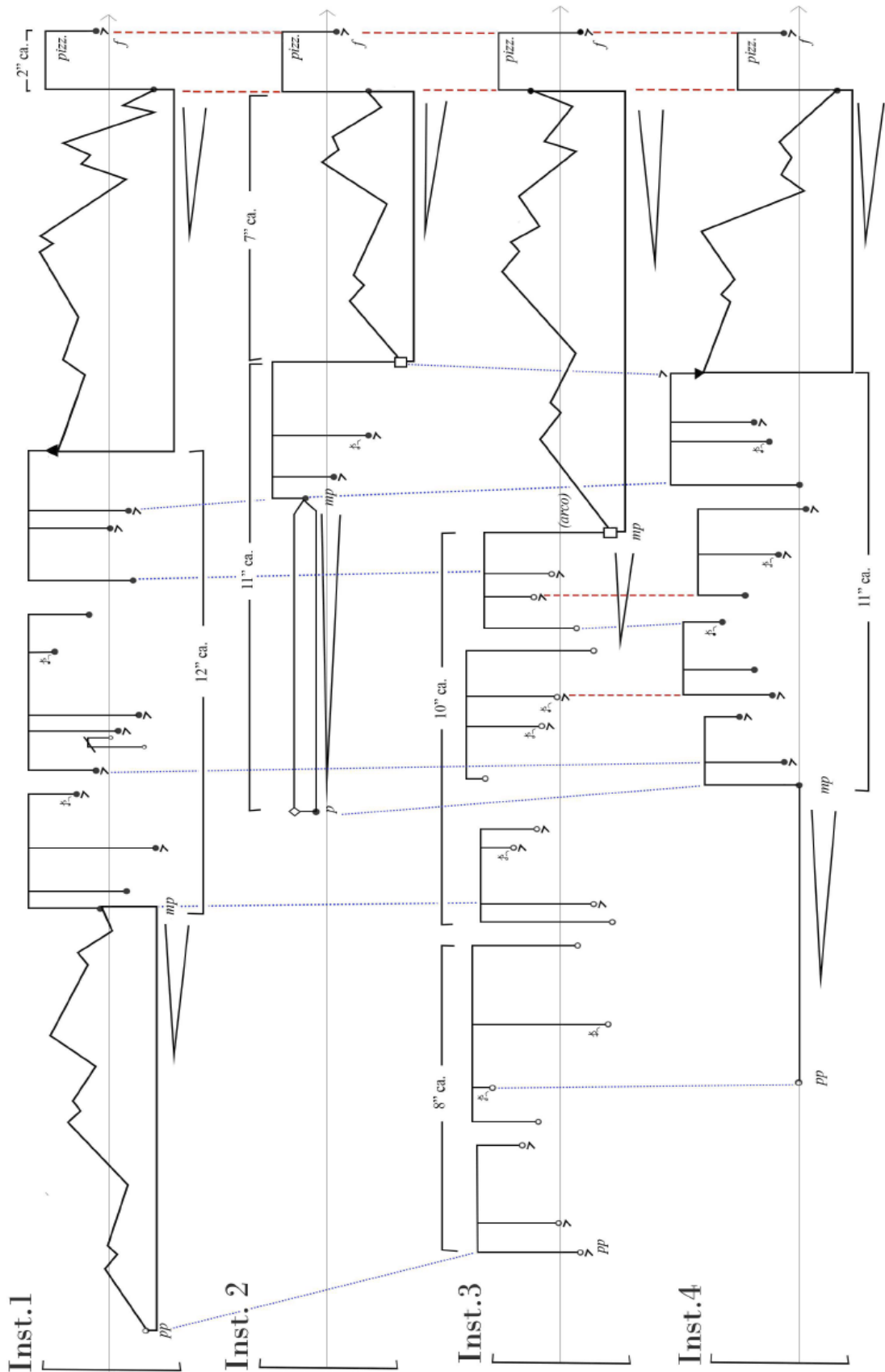
Inst. 2

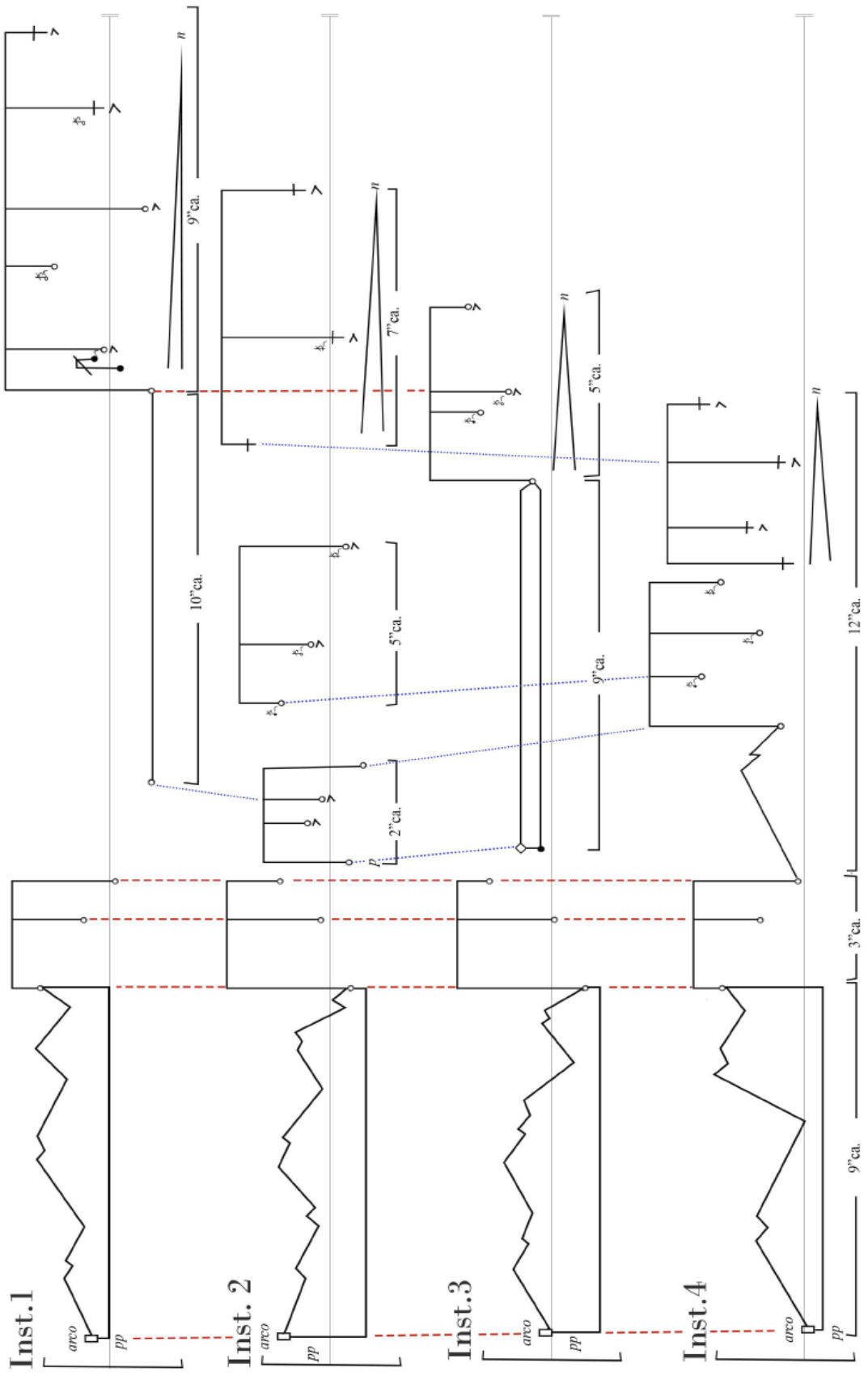
Inst. 3

Inst. 4



7





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