

# Prelude and Musical Space

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# Preface

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- Europe's musical history – Moving beyond the dominance of 18<sup>th</sup> and 19<sup>th</sup> century musical thought.
- Transcending cross-cultural boundaries and recognizing other musical traditions and influences.
- Developments in the field of acoustics and human communication.
- The growth of technology and expansion of musical capabilities.

“As a consequence the barriers setup in every culture by instruments, technical tradition, historical memory, and cultural predisposition **have fallen.**” (p. x)

# Fragmentation

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- “Musical processes of other periods and cultures—as well as some primary features of all music, such as time and tone-color relationships—are almost **entirely ignored**” (p. xi)
- “...the old frameworks of musical understanding are **inadequate**...the bulk of previous European music was **excluded**, and **no recognition** was given to the existence, much less the legitimacy, of other musical cultures” (p. xi)

# Analyzing Music



Musical Space – A motion, display, or design unfolding in time and acoustical space (p. 16)



Musical Language – The relationships of specific pitches and intervals (p. 11)



Time – The creation of areas of time, blocks of music covering clearly delineated time spans (p. 9)



Tone Color – The specific placement of a musical work within the total audible range creates, among other elements, the *color* of its sound (p. 4). “Color derives, initially, from the selection of instrument and register” (p. 9).

# Framework

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- “Development of modes of understanding responsive to the worldwide musical imagination” (p. xiii)
- “A framework with a place for all these developments, still often inaccessible to students and other interested in music, is required” (p. xiv)
- This book will “reveal to the inordinate range and variety of sonic and musical phenomena, and their meaning . . . The text is intended to initiate fruitful modes of thinking and perception, not to present final truths“ (p. xv)
- “Separation between composing, performing, analyzing, and listening has no place here” (p. xvi)
- “The *wholeness* of the musical piece must emerge from its study” (p. 18)

# Chopin: Prelude No. 20 in C Minor

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The image displays two systems of musical notation for Chopin's Prelude No. 20 in C Minor. The first system is marked 'Largo.' and 'ff' (fortissimo), featuring a piano part with a steady bass line and a treble part with complex chords and arpeggios. The second system is marked 'pp' (pianissimo) and 'riten.' (ritardando), showing a more delicate texture with intricate fingerings and a final cadence marked with a double bar line and a sharp sign.

- What are these sounds?
- What is this music?
- How is event linked to event?
- In the experience of hearing it, what creates sense and impact—if, indeed, meaning and expressive power are evoked by it?
- Which events (if any) stand out, and why?

# Tone Color

**Largo.**

20. *ff*

*p*

This system of music covers measures 20 to 24. It features a grand staff with treble and bass clefs. The tempo is marked 'Largo.' and the dynamic is 'ff' (fortissimo) at the beginning, which transitions to 'p' (piano) towards the end. The music consists of complex chords and melodic lines with various fingerings indicated by numbers 1-5. A grey box highlights the final chord of measure 24, which is a C major triad.

C<sup>1</sup> to Eb<sup>5</sup>

*pp*

*riten.*

This system of music covers measures 25 to 30. It continues the grand staff notation. The dynamic is marked 'pp' (pianissimo) and the tempo is marked 'riten.' (ritardando). The music features intricate chordal textures and melodic passages with detailed fingerings. A grey box highlights the final chord of measure 30, which is an Eb major triad. The system concludes with a double bar line and a repeat sign.

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# Musical Language



**Example P.3.** Linear descents, derived from measures 1–4, in measures 5–8

a.

mm. 5                      6                      7

G<sup>5</sup>  
C<sup>5</sup>  
G<sup>4</sup>  
C<sup>4</sup>  
G<sup>3</sup>  
C<sup>3</sup>

with 8.  
{ parallel tenths

- Repeating rhythm
- Descending linear movement
- Upper Boundary – Eb<sup>5</sup> through G<sup>4</sup>
- Lower Boundary – C<sup>4</sup> through Eb<sup>3</sup>

# Time

Largo.

20.

*ff*

*p*

*riten.*

*pp*

Musical score for piano, measures 20-30. The score is in common time (C) and features a key signature of two flats (B-flat and E-flat). The tempo is marked 'Largo.' and the dynamics range from fortissimo (*ff*) to pianissimo (*pp*), with a 'riten.' (ritardando) marking in measure 29. The score includes fingering numbers (1-5) and articulation marks (accents) above the notes. The right hand plays a melodic line with slurs and accents, while the left hand provides a harmonic accompaniment with chords and moving lines. The piece concludes with a double bar line and a repeat sign.

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# Chapter 1: Musical Space

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“One way of regarding a musical work is as *a motion, display, or design unfolding in time and acoustical space*” (p. 16).

# Josquin des Prez: “Benedictus”

Consider the shape created in musical space by this piece as a whole.

- Is there an overall motion from its beginning to its end?

Consider the shape of the two voices.

- What are the similarities or differences between them?
- Where there is motion, describe its direction.
- Specifically, which tones connect to the principal motion?
- Does all of the music move in the same direction at the same time?
- Are there large-scale motions as well as small-scale (shorter, quicker) ones?
- Does the music ever remain fixed in space? (Graphing the music may help you understand and hear its shape more clearly.)

A<sup>2</sup> to C<sup>5</sup>

Example 1.2. Josquin des Prez: *Missa “L’Homme Armé,”*  
“Benedictus”

Bass 1  
2 3 4 5  
Be - ne - dic -

Bass 2  
Be - ne - dic - tus, be - ne - dic -

6 7 8 9 10 11  
tus, be - ne - dic - tus,

12 13 14 15 16 17  
ne - dic - tus, be - ne - dic - tus.

Alto 1  
18 19 20 21 22 23  
Qui ve - nit, qui ve - nit, qui ve - nit.

Alto 2  
Qui ve - nit, qui ve - nit, qui ve - nit.

Soprano 1  
24 25 26 27 28 29 30  
nit, qui ve - nit.

Soprano 2  
nit, qui ve - nit.

Soprano 1  
31 32 33 34 35 36  
In no - mi - ne Do - mi - ni.

Soprano 2  
In no - mi - ne Do - mi - ni.

37 38 39 40 41 42  
ni, Do - mi - ni, in no - mi - ni.

43 44 45 46 47 48 49  
ni, Do - mi - ni.

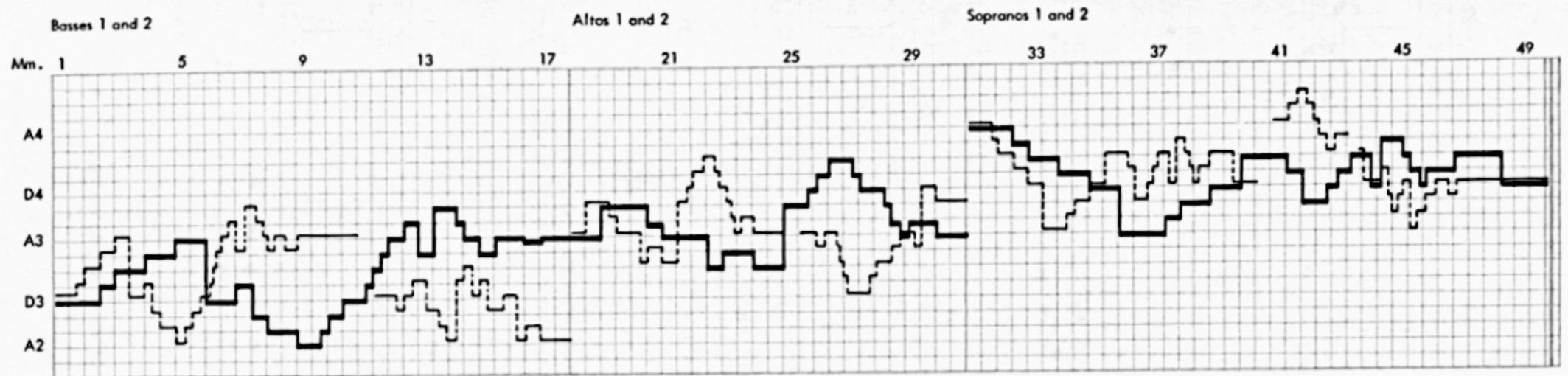
Benedictus qui venit in nomine Domini. Blessed be he who comes in the name of the Lord.  
( sounds an octave lower than )

# Linearity

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- Beginning-to-end motion
- Movement from point to *adjacent* point creates linear motion
- Elaboration and prolongation of the line
- Coordination v independence of voices

**Example 1.3. Line drawing of Josquin des Prez: "Benedictus"**



(The notes of each voice are connected.)

— = voice 1  
— = voice 2

One horizontal square = a half note (  $\downarrow$  )

One vertical square = a letter name (A, B, C, D, and so on)

## J. S. Bach: French Suite No. 4 in E $\flat$ "Allemande"

Consider the shape created in musical space by measure 1-10 as a whole.

- Is there an overall direction of motion?
- How many separate lines flow simultaneously in this section?

Consider the shape of each of them.

- Are there ways in which they work together to create motion and direction?

C<sup>2</sup> to C<sup>6</sup>

The image displays a musical score for the "Allemande" from J. S. Bach's French Suite No. 4 in E-flat. The score is written for piano and consists of 20 measures. It is organized into five systems, each with a treble and bass staff. The key signature has three flats (B-flat, E-flat, A-flat), and the time signature is common time (C). The notation includes various rhythmic values such as eighth and sixteenth notes, as well as rests. Measure numbers 1 through 20 are clearly marked above the treble staves. The piece begins with a single eighth note in the treble staff, followed by a series of eighth-note patterns in the right hand and a steady bass line in the left hand.

# Multilinearity

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- “A single voice consistently unfolding multiple lines.” (p. 33)
- Density - The total number of lines present within all voices.
- Examine the large-scale direction of motion of each line.



# W. A. Mozart: “Laudate Dominum” Introduction

- How many lines are there?
- Which element creates the principal shape of this phrase?
- What is the principal linear motion?
- How does the phrase compare with the previous examples?

Example 1.17. W. A. Mozart: *Vesperae Solennes de Confessore*, K. 339, “Laudate Dominum,” Introduction, measures 1–11

Andante ma un poco sostenuto

Violin I  
Violin II\*  
Bassoon\*\*  
Bass\*\*\*

1 2 3

4 5 6 7

8 9 10 *calando* 11 *a tempo*

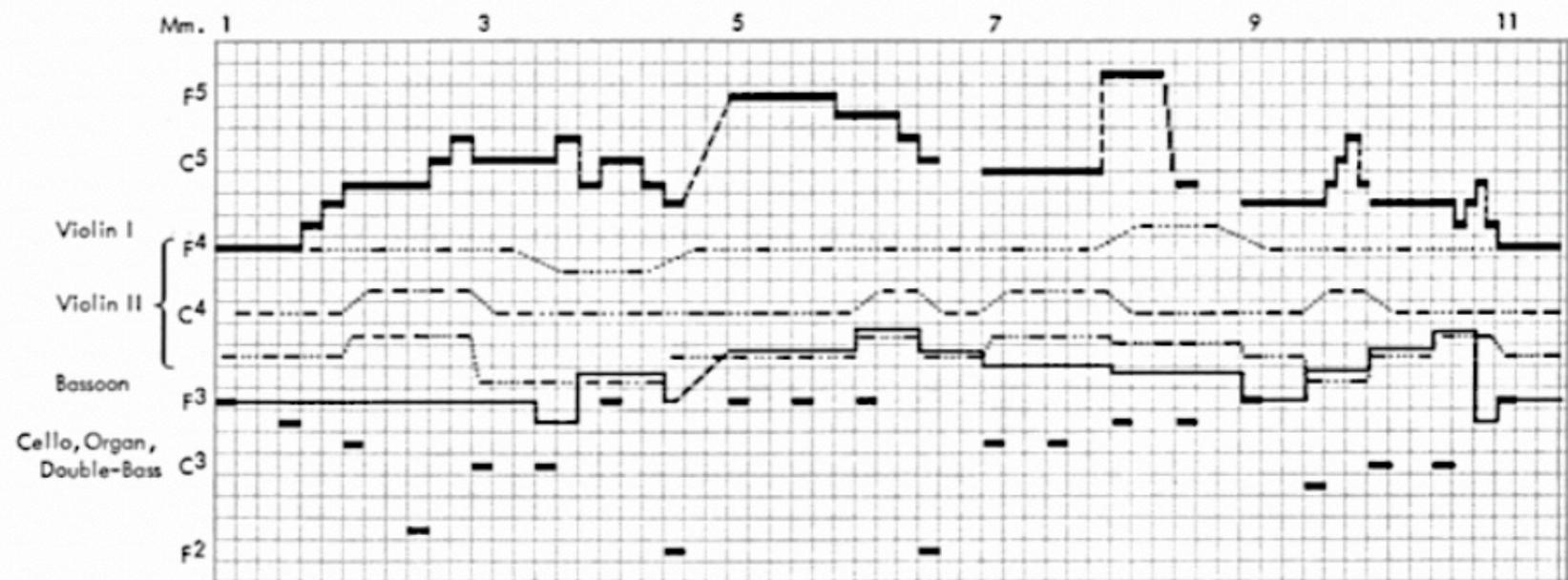
- \*Violin II: “legato”
- \*\*Bassoon *ad libitum* (optional): during *p* passages the bassoon’s dynamic is “*assai piano*” (“rather soft”)
- \*\*\*The bass voice: carried by Cello and Organ with Double Bass an octave lower; all indicated “staccato”

# The Inner and Outer Voices

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- “The only voice to achieve an active, highly shaped motion is the soprano, assigned here to Violin I.” (p. 35)
- “For a principal shape to stand out, movement in the other voices should be as limited as possible, proceeding always to the closest available tone.” (p. 39)
- “[“Laudate Dominum”] presents a single melodic line as a shape in space. All of the other voices of this piece are designed to foster the emergence of this shape.” (p. 40)

**Example 1.18.** Line drawing of Mozart: "Laudate Dominum", Introduction. The notes of each of the voices are connected.

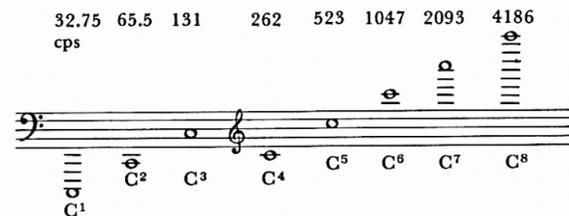


One horizontal graph square = an eighth-note (♪)

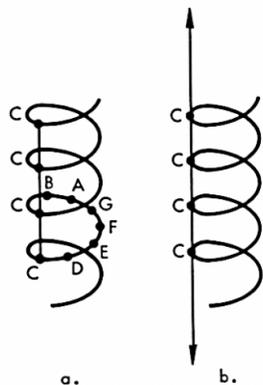
- = Violin I
- - - - = Violin II
- = Bassoon
- - - - = Cello, Organ and Double-Bass

# Octave Equivalence: The Musical Space Helix

Example 1.27. The frequencies of the note C from C<sup>1</sup> to C<sup>8</sup>



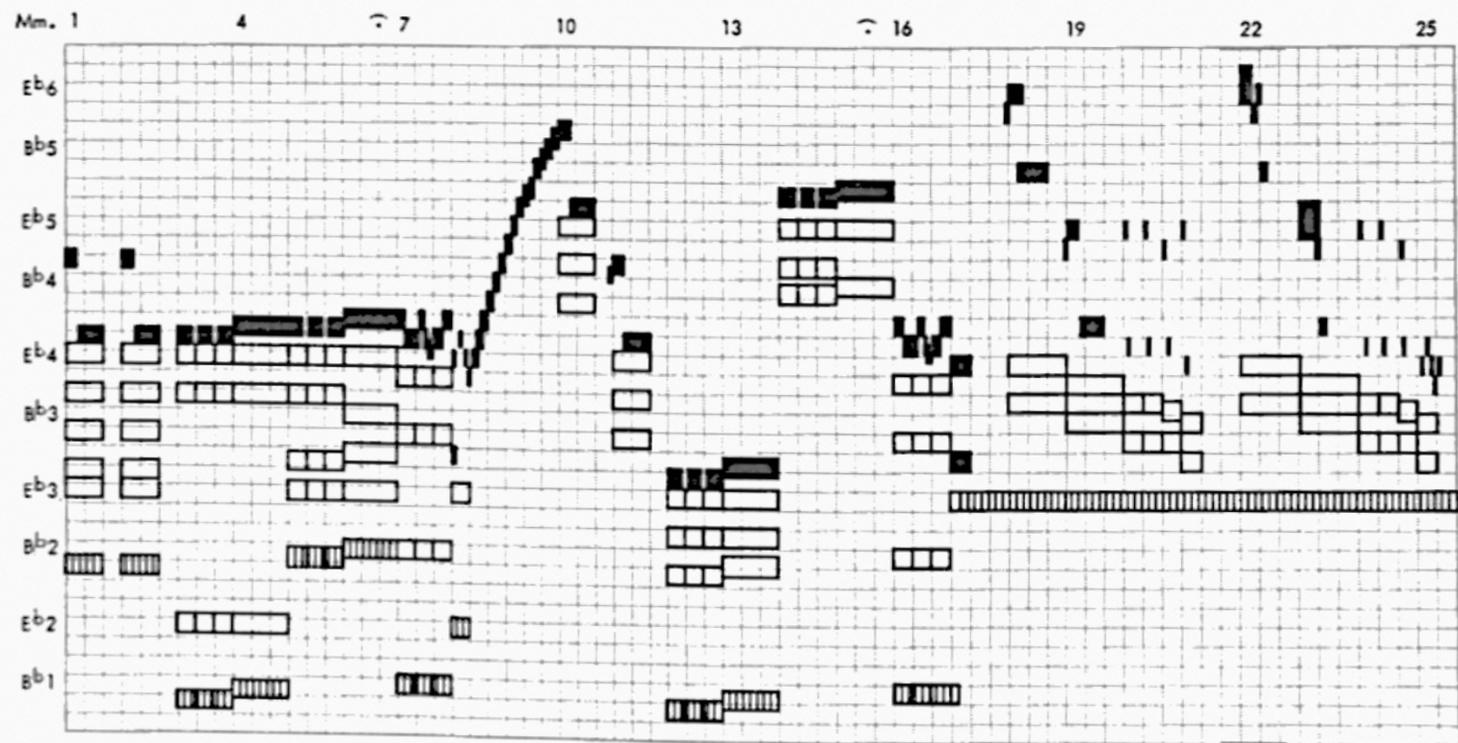
The frequency of C<sup>2</sup> is twice that of C<sup>1</sup>. The same is true of each higher octave. (Slight discrepancies result from rounding off fractions.)



- “Tones are named as if a note and the note an octave distant are in some way identical” (p. 43).
- Musical space can be conceived as analogous not to a straight line, but rather a *helix* or *cylindrical spiral*.
- A curved line that continually turns back through the same relationships
- Two different relationships exist:
  - Between proximate points on the linear curve—that is, between stepwise adjacencies (ex: a)
  - Between the same position on neighboring levels of the helix—that is, between octave (ex: b)



Example 1.26. Graph of Beethoven: Piano Sonata in E $\flat$ , Op. 31, No. 3 first movement, measures 1-25



The registers begin with E $\flat$  reflecting its role as tonal goal.  
 One horizontal square = a quarter note (♩)  
 ■ = soprano voice  
 □ = inner voices  
 ▨ = bass voice

# Line, Register, and Color

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- Multiple register shifts allows for the investment of diverse colors, tension, and interest
- “...regstral motion is not merely a spatial force but also (to a very powerful degree) a color determinant” (p. 47).
- Eliminating register shifts can remove the problems of linear understanding

C. M. von Diabolus:  
Recomposition of  
Beethoven's Op. 31, No.  
3, measures 1-25

- How do register shifts affect the musical design?
- What elements of the musical design are involved in the register shifts?

Example 1.29. C. M. von Diabolus: recomposition of  
Beethoven's Op. 31, No. 3, measures 1-25

The musical score is presented in four systems, each with a grand staff (treble and bass clefs). The key signature is two flats (B-flat and E-flat), and the time signature is 3/4. The tempo is marked 'Allegro' at the beginning. Measure numbers 1 through 25 are indicated above the staff. The score includes dynamic markings such as *p* (piano), *rit.* (ritardando), and *cresc.* (crescendo). Performance instructions include 'a tempo' at measure 16 and 'tr' (trill) at measures 22 and 23. The notation features various rhythmic patterns, including eighth and sixteenth notes, and rests. The bass line consists of a steady eighth-note accompaniment, while the treble line features more complex rhythmic figures and register shifts.

**No 18** Allegro (♩ = 116)

*ritar - dan - do* *a tempo*

*p* *cresc.*

*ritar dan do* *cresc.* *pp* *mf* *sf*

*a tempo*

*tr* *p*

**Example 1.29.** C. M. von Diaboli: recomposition of Beethoven's Op. 31, No. 3, measures 1-25

Allegro

1 2 3 4 5 6

10 11 12 13 14 15

*p* *rit.* *cresc.*

7 16 *a tempo* 17 18 19

*p*

18 19 20 21

22 23 24 25

*tr*

# Registers and Fields

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- Movement through the vast expanse of available space by wide-reaching registral motion alone—scarcely dependent upon linear underpinnings, which Schoenberg pioneered in the twentieth century
- Field of pitch: a melodic statement that covers a specific registral area
  - *Frequency areas of any width*

Schoenberg:  
*Six Little Piano Pieces*,  
Op. 19, No. 6

- How does the total space compare with that of Beethoven's Op. 31, No. 3?
- Is there melodic motion of one or more lines through space?
- Leaps are important in the piece: Do they represent register shifts of a linear motion?
- How does Schoenberg's spatial motion compare with Beethoven's?

Example 1.34. Schoenberg: *Six Little Piano Pieces*, Op. 19, No. 6

Sehr langsam (♩)

1 2 3 4 5 6

7 8 9

*pp* *pppp* *p* *ppp*

*pp* *pppp* *ppp*

*pp* *pppp* *ppp*

*pppp*

*sehr zart*  
*very delicate*

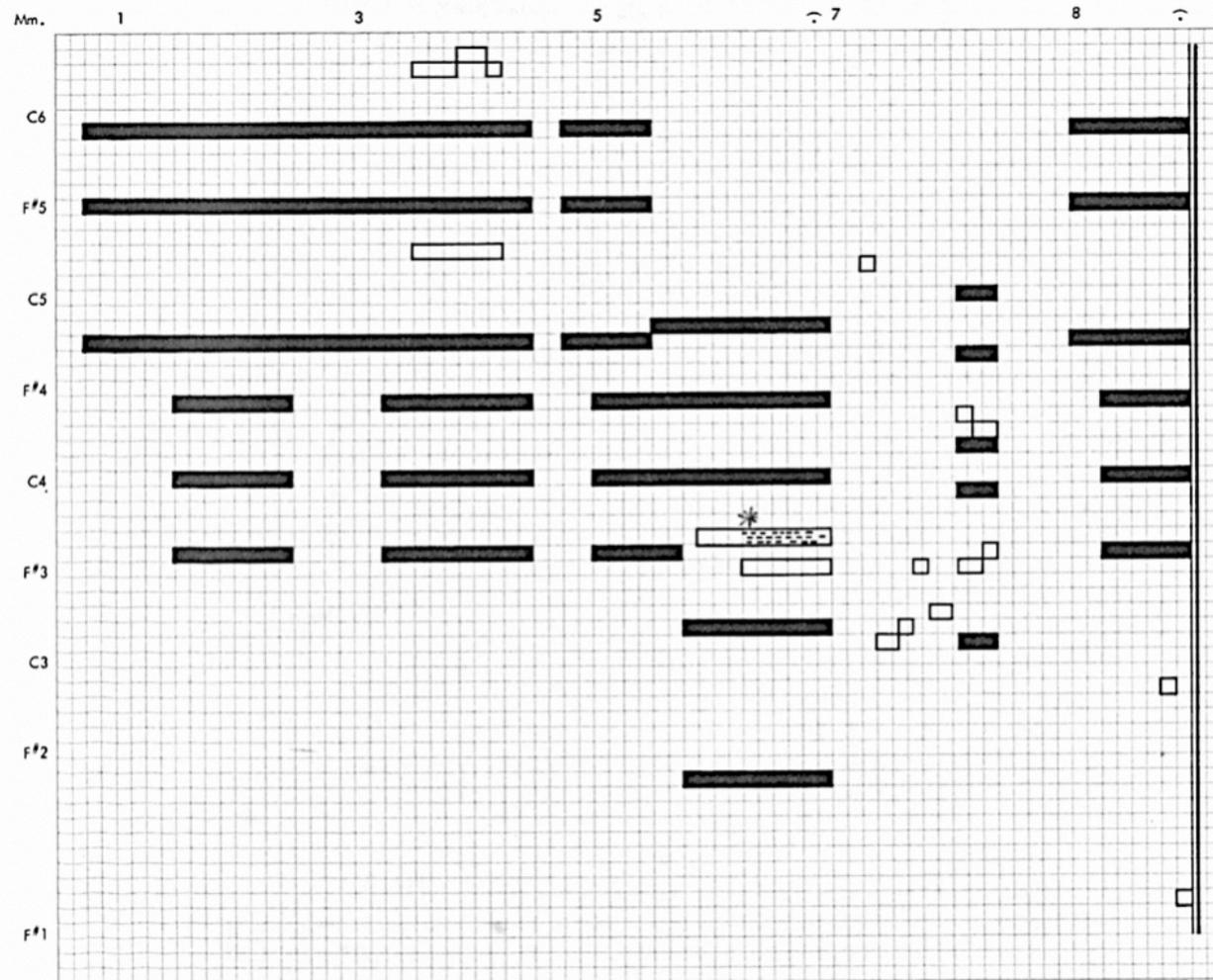
*genau im Takt*  
*strictly in time*

*wie ein Hauch*  
*like a whisper*

# Registers and Fields

- Two elements distinguished clearly:
  - Long notes struck simultaneously and held to form sustained densities.
  - Briefer melodic statements of one or two voices.

Example 1.35. Graph of Schoenberg: Op. 19, No. 6



# Fields

- Field of pitch: a melodic statement that covers a specific registral area
- The term field = *frequency areas of any width*
- “As a piece evolves the *field of space not only descends but also systematically expands*” (p. 54).

Example 1.36. Melodic fields of Op. 19, No. 6

The image displays a musical score for Op. 19, No. 6, illustrating four melodic fields. Above the score, four diagrams represent these fields: Field I (registers 5-6), Field II (register 3), Field III (registers 3-4-5), and Field IV (registers 1-2). Dashed lines connect these diagrams to their corresponding melodic segments in the score. The score is written in two systems. The first system contains Field I (pppp, p) and Field II (pp). The second system contains Field III (p, pp) and Field IV (pppp). The melodic lines show a clear downward trend in register from Field I to Field IV, with Field III being a wider field than Field II.

# Stasis and Motion

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- Using one gesture of motion to move over the entire field
- Creating sound textures from pairing long-sustained tones
- Scattering short isolated tones
  
- The gestures widen both in their total span and in their component intervals.
- Variants of the first gesture by means of extension, inversion, acceleration, and interval expansion

## Elliot Carter: Second String Quartet, “Introduction”

- How does the total space compare with previous examples?
- Is either linear or field motion a formative principle of the spatial design?
- What are the spatial boundaries and which instruments create them?
- How does the density change?

Example 1.39. Elliott Carter: Second String Quartet, “Introduction”

The image displays three systems of musical notation for the 'Introduction' of Elliott Carter's Second String Quartet, starting at measure 105. The instruments are Violin I, Violin II, Viola, and Cello.

- System 1 (Measures 105-107):** Violin I has a melodic line with dynamics *mp*, *p*, and *pp*. A *marc.* (marcato) marking is present. The Cello part starts with a *p* dynamic and includes the instruction *non troppo vibrare*. Dynamics *f* and *pp* are also indicated.
- System 2 (Measures 108-110):** Features pizzicato (*pizz.*) and arco playing. Dynamics include *f*, *molto espr.*, *mf*, *p*, *f*, and *p<sub>sub.</sub>*. A *espr. sost.* (sostenuto) marking is present.
- System 3 (Measures 111-113):** Continues the complex texture with dynamics *piu f*, *mf*, *ppp*, *f*, *marc. ruvido*, *fp*, *pp*, *f*, *espr.*, *p*, *mf*, *p-pp*, *f<sub>sub.</sub>*, *pp*, and *p*.

## Elliot Carter: Second String Quartet, “Introduction”

- Using one gesture of motion to move over the entire field
- Creating sound textures from pairing long-sustained tones
- Scattering short isolated tones

Example 1.39. Elliott Carter: Second String Quartet, “Introduction”

Violin I and Cello staves, measures 1-3. The Violin I staff begins with a rest, followed by a melodic line starting at measure 2 with dynamics *mp*, *p*, and *pp*. The Cello staff plays a rhythmic pattern with dynamics *p*, *f*, and *p*. Performance instructions include *non troppo vibrare* and *marc.*

Violin II and Viola staves, measures 4-6. The Violin II staff has dynamics *f*, *mf*, and *f*. The Viola staff has dynamics *f*, *mf*, and *f*. Performance instructions include *pizz. normale*, *arco*, *espr. sost.*, and *p*.

Violin I, Violin II, and Cello staves, measures 7-9. The Violin I staff has dynamics *f*, *ppp*, and *pp*. The Violin II staff has dynamics *piu f*, *mf*, and *pp*. The Cello staff has dynamics *f sub.*, *pp*, and *p*. Performance instructions include *marc. ruvido*, *espr.*, *gliss.*, and *p*.

# Conclusions

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- We can alter musical space by...
  - Not just looking at music linearly
    - Multilinearity
    - Density
    - Helix or cylindrical spiral
  - Altering registers and fields
    - Changes in tone color

# Conclusions

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- “The study we have just undertaken is relevant not only to the art of music, but also to the entire cultural life of which it forms a part” (p. 71)
- “These statements are not offered as rhetoric, but as a further step in understanding musical conceptions” (p. 71)
- Musical vocabulary consists largely of metaphors (i.e. high, low, line, field, motion, shape, space)
- Present-day language and communication concepts are much less linear than before (i.e. electronic media and printed media)