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RHYTHMIC STRUCTURE IN MUSIC: A STUDY OF THE PERCEPTION OF  
METRICAL AND PHRASE STRUCTURE, FROM A MECHANISTIC VIEWPOINT

by

George Robert Mackie Fraser

Thesis submitted to the Faculty of Music  
in the University of Durham  
for the Degree of Doctor of Philosophy

1982

In Two Volumes

V O L U M E   T W O

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22. MAY 1984

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LIST OF ABBREVIATIONS AND SYMBOLS

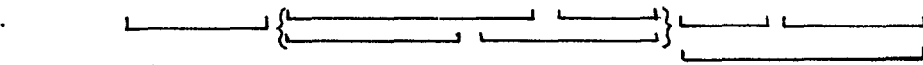
B	Bass Accentuation	$\times \square$	Structural grouping created or positioned by x
DC	Duration Contour	*	End of phrase grouping
DP	Duration Phrase	$\wedge$	Tonic Accent
d-r	Dissonance and Resolution	$\succ$	Dynamic Accent
Estd	Pre-established Metre	$\frown$	Tied note or articulated slur
HR	Harmonic Rhythm	.	Staccato and non legato
I	Interpreted structure	$\curvearrowright$	'gives way to' (of progressive closure)
LN	Longer-note Accompaniment	$\langle \rangle$	Directional Grouping
M	Metre	$\equiv$	Congruent with
MC	Metrical Contour	$\neq$	Incongruent with
p-p	Pitch Unity	$\succ$	Stronger than (and incongruent with)
PS	Pitch separation	$\prec$	Weaker than (and incongruent with)
R	Repetition	$\square$	Subsidiary structural grouping
S	Subdivision (of metrical unit or phraselength)	$\square$	Projected or anticipated structural grouping
$S_1$	Beam altered by Separation Rule 1,2,5	----	Beam reflecting separation and continuation
$S_2$		.....	Beam reflecting separation
$S_5$		$\top$	Structural rest, tied note, subconscious metrical accent
T	Structurally accented Tonic	$\downarrow$	Dual branch
t	Tonic	$\uparrow$	Shared time point - two voices
Tr	Transferred phrase grouping	$\Upsilon$	Shared branch (and subtree)
x:	Structural groupings on this level produced by x, until otherwise indicated		

Ex.1: Schubert, Impromptu in C minor, Op.90/1

*Allegro molto moderato*

a. 

b. 

c. 

Ex.2



Ex.1/1

a.                    b.                    c.

1 1 1 → 1 0 1 1 0 0  
0 1 0 0 1 1 ← 1 1 1

Ex.1/2: Chopin, Nocturne in F#, Op.15/2

1 (s. Zug)

a) T 1-2:

b) T 11-12:

Ex.1/3: Mozart, The Marriage of Figaro, Act I, 'Non so più'

Ex.1/4: Palestrina, Missa Papae Marcelli, Credo

Ex.1/5: Beethoven, Sonata in F minor, Op.2/1, I

*Allegro*

Ex.1/6: Bach, Musical Offering, Theme; Trio Sonata, IV

Ex.1/7: Beethoven, Sonata in D, Op.10/3, I

*Presto*

a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_  
 d. \_\_\_\_\_

a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_  
 d. \_\_\_\_\_

Ex.1/8: Beethoven, Violin Concerto, III

*Allegro*

a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_  
 d. \_\_\_\_\_  
 e. \_\_\_\_\_

Ex.1/9

Ex.1/10

Ex.1/11

Chord diagram for Ex.1/11:

C	C#	D	D#	E	F	F#	G	A	B	B#	C
C	C#	D	D#	E	F	F#	G	A	B	B#	C

Ex.1/12

Chopin, op. 34/3

Fingerings for Ex.1/12:

D:	(4	2	2	4 )				
C:	(3	1	2	2	1	3 )		
B:	(2	1	1	2)	(2	1	1	2)
A:								
C:								
D:								

Ex.1/13



Ex.1/14

$\text{♩} = > 100$

*Piano*  
*stacc.*  
Xylophone  
Side Drum  
etc.

Ex.1/15

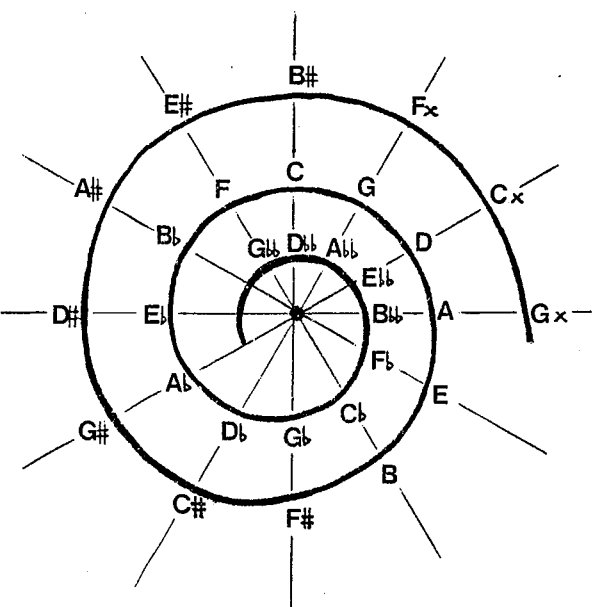
6 3 3 2 2 2 6

Ex.1/16

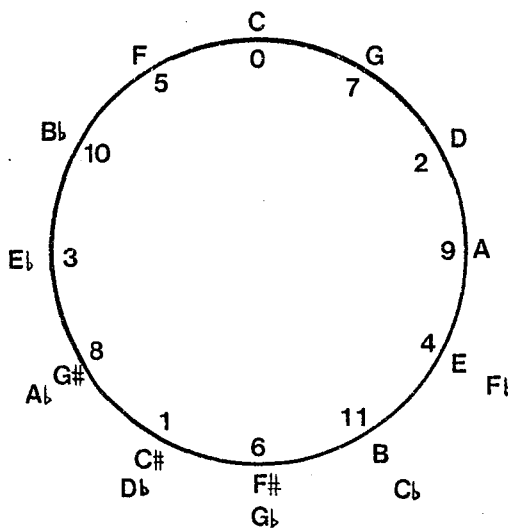
13 5

9  
8

Ex.1/17



Ex.1/18



Ex.2/1: Bach, '48', I, Prelude No.1

Ex.2/2: Bach, '48', I, Prelude No.6

Ex.2/3

Ex.2/4

Ex.2/5: Bach, '48', II, Fugue No.9

1	2		2		8	
1	1	1	1	4	4	
				1	2	2, 2
				4, 4		

Ex.2/6

Bach: 1 2 3 4 5

Ex.2/7

Ex.2/8: Bach, '48', II, Fugue No.10

Ex.2/9: Beethoven, Sonata in F, Op.10/2, I

Ex.2/10

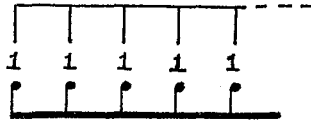
Ex.2/11

Ex.2/12

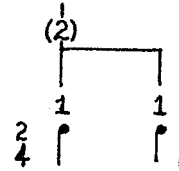
Ex.2/13



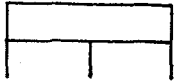
Ex.2/14



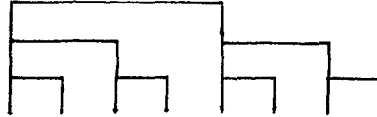
Ex.2/15



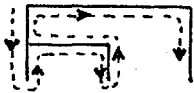
Ex.2/16



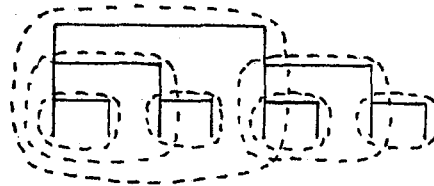
Ex.2/17



Ex.2/18



Ex.2/19

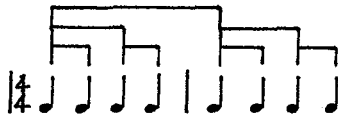


Ex.2/20

a.

b.

Ex.2/21



Ex.2/22: British National Anthem

Ex.2/23: Haydn, Quartet, Op.33/3, IV

*Presto*

Ex.2/24: Chopin, Prelude in C minor, Op.28/20

*Matthay:*  
*Largo*

Ex.2/25

Ex.2/26: Beethoven, Symphony No.9, II

*Molto vivace*

(177) Ritmo di tre battute

Ex.2/27: Bach, 'O Haupt voll blut und Wunden'

Ex.2/28: Schubert, Piano Trio in Bb, Op.99, I

*Allegro moderato*

Musical score for Ex. 2/28, Schubert's Piano Trio in Bb, Op. 99, I. The score is in 3/4 time and features a melody with various ornaments and a piano accompaniment with chords and arpeggios.

Ex.2/29

Two diagrams, labeled 'a.' and 'b.', showing hand positions for a piano exercise. Diagram 'a.' shows a simple rectangular shape, while 'b.' shows a more complex shape with a curved top.

Ex.2/30: Dvořák, Piano Concerto, II

Musical score for Ex. 2/30, Dvořák's Piano Concerto, II. The score is in 3/4 time and features a melody with dynamic markings (*p dolce*, *fp*, *p*, *pp*) and a piano accompaniment with chords and arpeggios.

Ex.2/31

Ex.2/32

Two diagrams, labeled 'Ex.2/31' and 'Ex.2/32', showing hand positions for piano exercises. Diagram 'Ex.2/31' shows a simple rectangular shape, while 'Ex.2/32' shows a more complex shape with a curved top.

Ex.2/33: Beethoven, Minuet in G

Musical score for Ex. 2/33, Beethoven's Minuet in G. The score is in 3/4 time and features a melody with fingerings (3 1 3 1 3 1 3 1 8) and a piano accompaniment with chords and arpeggios.

Ex.2/34

Musical score for Ex. 2/34, featuring a melody with fingerings (3 1 3 1 3 1 3 1 8) and a piano accompaniment with chords and arpeggios.

Ex. 2/35: Tchaikovsky, Symphony No. 4, I

*Andante sostenuto*

R=Repetition

Ex. 2/36: Mendelssohn, Symphony No. 4, I

a.

*All. -ro vivace*

b.

Ex. 2/37

a.

b.

R=Repetition

Ex. 2/38

éYéé éYéé éYéé éY etc.

Ex. 2/39

Ex. 2/40: Mozart, Sonata in A, K. 331, I

*Andante grazioso*

Phrase contour: 12 p. 12 p. 6 p. 6 p. 12 p.

R = Repetition  
 p-p = Pitch unity  
 d-r = Dissonance + resolution

Ex. 2/41

Ex. 2/42

Ex. 2/43

Ex. 2/44

Harmony: A F# b E

Ex. 2/45  
 a: Schumann, Piano Concerto, I

*All'op. o  
 affrettato  
 da 54*

R = Repetition  
 d-r = Dissonance + resolution

*Moderato*  
(♩ = 53)

*p espress.* (90)

R=Repetition

etc.

Ex. 2/46: Beethoven, Symphony No. 1, I

*Allure con brio*  
(♩ = 112)

Ex. 2/47: Bach, '48', I, Fugue No. 2

2 2 1 1 2 2 6    2 2 1 1 2 2 6

(1) (6) (8) (8) (1) (6) (8) (8)

1 1 2 2 2 1 1 2 2 2 1 1 2 2 1 1 4 1 1 1

Ex. 2/48: Mozart, Sonata in D, K. 284, I

Allegro

1 = ♯

*p* *f* *p* *f* *p* *f* *f*

*p* (*p*) *p* *f*

(a) \*

*p* *f* *p* *f*

(*p*) (*p*)

Ex. 2/49

Ex. 2/50

4/2 *anbetont*

4/2 *(1/8 Auftakt)*

4/2 *(1/8 [1/4] Auftakt)*

4/2 *(3/8 Auftakt)*

4/2 *(1/8 [1/2] Auftakt)*

4/2 *(3/8 Auftakt)*

4/2 *(3/8 [1/2] Auftakt)*

4/2 *abbetont*

(unbetont)

Ex. 2/51

anbetont (beginning-accented)

inbetont (middle-accented)

abbetont (end-accented)

Ex. 2/52

a. (p. 104)

b. (p. 65)

Ex. 2/53

4 (p. 170)

Ex. 2/54

a. (p. 65)

b. (p. 80)

c. (p. 23)

Ex. 2/55: Schubert, Symphony No. 5, II

*Andante con moto*

Ex. 2/56: Beethoven, Sonata in A, Op. 2/2, III

Attack String: *Alligretto*

Ex. 2/57

Ex. 2/58

Ex. 2/59

Ex. 2/60

a.

b.

Ex. 2/61

a.

b.

Ex. 2/62



*Presto*

Ex.3/2: Brahms, Symphony No.1, IV

Ex.3/3: Bartók, Music for Strings, Percussion, and Celesta, III





Ex.3/14: Chopin, Sonata in B minor, I

*Allegro maestoso*

Ex.3/15: Berlioz, Overture, 'Le Carnaval Romain'

*Allegro assai* ♩ = 156

Ex.3/16: Handel, Water Music, VII, 'Air'

Ex.3/17: Wagner, Götterdämmerung, Funeral Music

Ex.3/18: Schumann, Piano Concerto, I

(♩ = 84)

*graph*  
3 1 5

Ex.3/19: Berlioz, Romeo and Juliet, III

Adagio  $\text{♩} = 88$

The musical notation is in treble clef with a key signature of two sharps (F# and C#). The tempo is Adagio with a quarter note equal to 88 beats per minute. The piece is in 6/8 time. The notation includes a melodic line with various fingering numbers (1-4) and fret numbers (12, 6, 3, 2, 1, 2, 3, 1, 6, 6). A guitar-specific instruction 'in graph' is present. Below the staff are fretboard diagrams for the first six frets, with 'X' marks indicating fretted notes and numbers indicating fingerings. A vertical list on the left side of the diagrams shows fret numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

Ex.3/20: Schumann, Piano Concerto, I

( $\text{♩} = 84$ )

The musical notation is in treble clef with a key signature of one sharp (F#). The tempo is marked with a quarter note equal to 84 beats per minute. The piece is in 4/4 time. The notation includes a melodic line with various fingering numbers (1-4) and performance annotations such as 'd-r' and asterisks. A bracketed section of the melody is marked with circled numbers 1, 2, 3, 4. A legend on the right side of the page defines 'd-r = Dissonance + resolution'.

Ex.3/21: Berlioz, Romeo and Juliet, III

Adagio  $\text{♩} = 88$

The musical notation is in treble clef with a key signature of two sharps (F# and C#). The tempo is Adagio with a quarter note equal to 88 beats per minute. The piece is in 6/8 time. The notation includes a melodic line with various fingering numbers (1-6) and performance annotations such as asterisks. The piece is in 6/8 time.

Ex.3/22: Bach, '48', II, Fugue No.14

The musical notation is in bass clef with a key signature of one sharp (F#). The piece is in 4/4 time. The notation includes a melodic line with various fingering numbers (1-4) and performance annotations such as '(tr)'. Below the staff are fretboard diagrams for the first six frets, with 'X' marks indicating fretted notes and numbers indicating fingerings. A vertical list on the left side of the diagrams shows fret numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.



Ex.3/28: Mozart, Piano Trio in Bb, K.502, II

1) 2) 3) 4) 5) 6)

Larghetto

2 2 2 5 1 1 1 1 1 1 3 1 2 2 1 1 1 5 1 1 1 1 1 1 2 2 2 2 2 2

3 1 2 2 2 2 3 1 2 2 1 1 1 3 1 2 2 2 2 4 2

Ex.3/29: Mozart, Symphony No.40, K.550, I

1) 2) 3) 4)

Allegro molto

1 1 2 1 1 2 1 1 2 4 1 1 2 1 1 2 1 1 2 4

Ex.3/30

a.

1 1 2 1 1 2 1 1 2 4 1 1 2 1 1 2 1 1 2 4

b.

1 1 2 1 1 2 1 1 2 4 1 1 2 1 1 2 1 1 2 4

R = Repetition

Ex.3/31: Bach, '48', I, Fugue No.15

2 1 1 1 1 2 1 1 1 1 2 2 2 2 4 2 2 2 2 4 2 1 1 1 1 2

1) 2) 3) 4) 5) 6)

Ex.3/32: Mozart, Violin Concerto, K.219, I

Allegro aperto

3 1 3 1 2 3 1 1 1 1 1 3 1 1 1

1) 2) 3) 4) 5) 6)



Ex.3/40: Bernstein, West Side Story, 'America'

a.

1 1 1 1 1 1 2 2 2 1 1 1 1 1 1 2 2 2

b.

1 1 1 1 1 1 2 2 2 1 1 1 1 1 1 2 2 2

Ex.3/41: Bach, '48' I, Fugue No. 3

Ex.3/42: Beethoven, Symphony No. 5, III

Ex.3/43: Mozart, Serenade ('Eine Kleine Nachtmusik'), K. 525, III

Ex.3/44

Ex.3/45: Mozart, Symphony No. 25 in G minor, K. 183, I

*Allegro*

(B) (B) (B) (B)

$P_1 - P_2 - P_2 - P_1$   $P_1 - P_2 - P_2 - P_1$   $P_1 - P_2 - P_2 - P_1$   $P_1 - P_2 - P_2 - P_1$

p-p = Pitch unity

Ex.3/46

1 1-1 1 4

d-r = Dissonance+resolution

Ex.3/47

a. 1 2 1-1 2 1 1

b. 1 1 1 1 1 1

Ex.3/48: 'Auld Lang Syne'

2 2-1 1 2 2 2-1 1 2 2

Ex.3/49: Chopin, Prelude in E minor, Op. 28/4

Xargo 3 1 2-2-2-2-2-2 2-2 2-2-2-2-2-2 2-2 2-2-2-2-2-2 2-2 2-2-2-2-2-2

*p*

etc.

Ex.3/50: Musical Cliché

2 1 1 2 4 (2) 2 4

Ex.3/51: Bach, '48', I, Fugue No.14

Ex.3/52

S. Joplin, The Entertainer

a.

b.

Ex.3/53

Λ = attack  
 | = sounded metrical accent  
 : = unsounded " "

Ex.3/54: Bartók, Mikrokosmos, No.153

a.

b.

Ex.3/55: Bach, Clavier Concerto in D minor, I 30

1 1 2 2 2 2 4 2 2 1 1 2 1 1 2 4 1 1 2 4 1 1 1 1 1 1

4)  
8)  
16)

Ex.3/56

a.  
b. 2 1 1 2 4 1 1 2 4 1 1 2 4 1 1

Ex.3/57: Grieg, Sonata in C minor (Violin and Piano), Op.45, I

*Allegro molto*  
♩ = 116

39

*f* *pp* *molto cresc.*

Ex.3/58: Beethoven, Symphony No.3 ('Eroica') I

a. *Allegro con brio*  
♩ = 66

2 3 1 2 3 1 2 2 2 2 2 2 2 2 2 2 3 1 2

248

*ff* *etc. simile*

b.

Ex. 3/59: Brahms, Symphony No. 1, IV

Ex. 3/60

Ex. 3/61: Bach, '48' I, Fugue No. 6

Ex. 3/62: 'Marseillaise'

Ex.3/63: {Brahms, Rhapsody, Op. 79/1  
 {Grieg, Peer Gynt, 'Åse's Death'

Ex.3/64: Bach, Brandenburg Concerto No.3, I

♩ = 40

♩ = 112

Ex.3/65

Ex.3/66

Ex.3/67

Ex.3/68

Ex.3/69

Ex.3/70: Schubert, Symphony No. 9, III

♩ = ca. 76

Ex.3/71: Wagner, Tannhäuser, 'Pilgrims' Chorus'

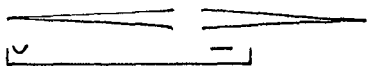
♩ = ca. 60

Ex.3/72: Wagner, Parsifal, Prelude

(♩ = c. 54)

R [1 1 1 1 2] [1 1 1 1 2] R [1 1 1 1 2] [1 1 1 1 2] R = Repetition

Ex.3/73



Ex.3/74: Haydn, Symphony No. 101 ('Clock'), I

a.

Presto 1 1 1 1 1 1 1 1 3 2 1 1 1 1 1 1 1 1 3 2

d-r = Dissonance + resolution

b.

Ex.3/75: Mozart, Symphony No. 40, K. 550, IV

a.

(♩ = 120)

[1 1 1 1 1 1] [1 1 1 1 1 1] [1 1 1 1 1 1] [1 1 1 1 1 1]

2 2 2 2 2 4 2 1 1 1 1 1 1 1 1 1 6

b.

Presto ♩ = 144

[1 1 1 1 1 1] [1 1 1 1 1 1]

2 2 2 2 2 4 2 1 1 1 1 1 1 1 1 1 6

c. *Allegro assai*

(a) (b)

Ex.3/76: Beethoven, Piano Concerto No.3, III

*Allegro*

Ex.3/77

*Presto* ( $\text{♩} = 112$ )

Ex.3/78: Haydn, Symphony No. 101 ('Clock'), I

a. *Presto*

b. *Presto*

a: Dvořák, Symphony No. 8, II

b: Dvořák, Symphony No. 8, III

1 1 1 6 3 3 9

1 1 1 4 1 1 2 2 2

Ex. 3/80: Beethoven, Sonata in C minor, Op. 10/1, III

a. *Prestissimo*

(4) (4)

b. *Prestissimo*

(4) (4) (4) (4) (8) (8)

Ex. 3/81

(4) (8)

(4) (3) (4) (3)

Ex. 3/82

- a. 2: 2 X > 1
- b. 3: 1+2 3
- c. 4: 2x2 1+3
- d. 5: 1+(2x2) 5 or 5 [3+2]
- e. 6: 2+(2x2) 3x2 2x3
- f. 7: 1+(2x3) 1+2+(2x2) 8-1 7 [2x2+3] 7 [3+(2x2)]
- g. 8: 2x(2x2) 2+(2x3)
- h. 9: 3x3 3+(2x3)
- i. 10: 2+(2x(2x2)) 1+(3x3)
- j. 11: 1+2+(2x(2x2)) 2+(3x3)

Ex.3/83: Bach, '48', I, Fugue No.5

a.

1 1 1 1 1 1 1 7 1 7 1 7 1 7 1 8 8

b.

6 1 1 4 3 1 2 5 1 6 1 1

Ex.3/84

a.

b.

Ex.3/85: Mozart, Sonata in F, K.332, I

Allegro

Ex.3/86

etc.

Ex.3/87: Bach, '48', I, Fugue No.2

Ex.3/89 | c

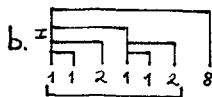
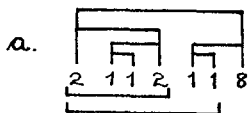
2 1 1 2 2 2 2 2 2 1 1 2 2 2 2 4

Ex.3/88: Bach, Organ Chorale, 'Wachet Auf'

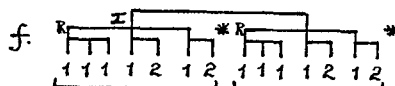
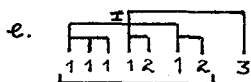
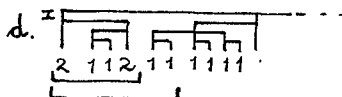
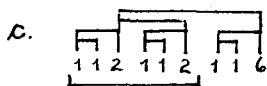




Ex.3/98



I = Interpreted structural grouping



Ex.3/99: Ravel, Piano Trio, I

Moderato ♩ = 132

(4) (1) (2) (3) (4) etc.

(4) (1) (2) (3) (4) etc.

(4) (1) (2) (3) (4) etc.

LN = Longer-note accompaniment

Ex.3/100

2 1 1 2 1 1 2 1 1 2

x x x x x x x

x . x x x . x x x . x x x

1)

(2) M

4)

Ex.3/101

2 1 1 2 1 1 2 1 1 2

Ex.3/102 a.

2 1 1 1-1 1 1 1-1 1 1 1-1

b.

2 1 1 2 1 1 2 1 1 2

Ex.3/103 a.

2 2 4 2 2 4 2 2 2 1 1 2 2 4

b.

2 2 4 2 2 4 2 2 2 1 1 2 2 4

a: Grieg, Peer Gynt, Op.46, Åse's Death

2 2 4 2 2 4 2 2 2 1 1 2 2 4

Ex.3/106: Beethoven, Symphony No. 6, I

Ex.3/104

2 1 1 2 1 1 2

Allegro ma non troppo

2 1 1 2 2 2 1 1 2 2 2

Ex.3/105 a.

2 1 1 2 2 1 1 2 2 etc.

Ex.3/107 a.

2 1 1 2 2 1 1 2 2

b.

2 2 1 1 2 2 2 1 1 2 etc.

b.

2 2 1 1 2 2 2 1 1 2

c.

2 1 1 2 2 2 1 1 2 2 etc.

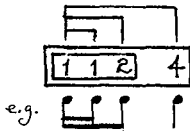
c.

2 1 1 2 2 2 1 1 2 2

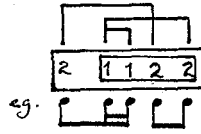
Ex. 3/108



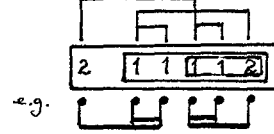
Ex. 3/109



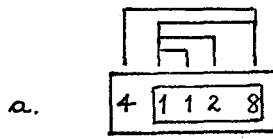
Ex. 3/110



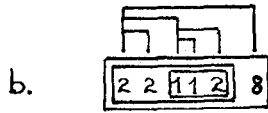
Ex. 3/111



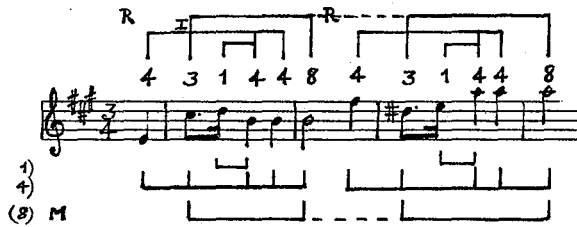
Ex. 3/112



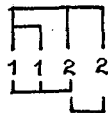
Elgar, Pomp and Circumstance, No. 4



Ex. 3/113: Chopin, Prelude in A, Op. 28/7



Ex. 3/114



Ex.3/115

a: Boyce, Symphony No.4, III

Allegro

2 2 4 1 1 1 1 4 1 1 1 1 2 2 1 1 1 1 4

S1 = Beam subject to deletion by Separation Rule 1.

S2 = Beam marked for separation by Separation Rule 2

S5 = Beam subject to deletion by Separation Rule 5

s = Subdivision

d-r = Dissonance + resolution

HR = Harmonic rhythm

Mult DC = Multiple from duration or duration contour

b: Berlioz, Symphonie Fantastique, IV.

Allegretto non troppo

$\text{♩} = 72$

4 8 4 8 3 1 3 1 3 1 3 1 4 4 4 12

HR:

c: Beethoven, Piano Concerto No.4, I

Allegro moderato

5 1 1 1 1 1 1 1 1 1 1 1 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 3

HR:

d: Wagner, Die Meistersinger, Prelude

Sehr mässig bewegt 4

3 1 5 1 1 1 2 2 2 2 2 3 1 1 1 4 3 1 5

HR:

Ex.3/115e: Sibelius, Karelia, III

*Alla Marcia*

R = Repetition  
 PS = Pitch separation  
 p-p = Pitch unity

Ex.3/116: Prokofiev, Romeo and Juliet, 'Montagues and Capulets'

Ex.3/117: Bartók, Dance Suite, IV

Ex.3/118

a: Schubert, Symphony No. 9, I

*Allegro ma non troppo*

b: Puccini, Manon Lescaut, Act I

c: Haydn, Symphony No. 104, I



Ex.3/123 ctd.

c: Schumann, Papillons, Op. 2, XII

*Con brio*

2 3 1 2 2 2 2 2 2 4 2 3 1 2 2 2 2 2 2 4

I V I V

d: Beethoven, Piano Concerto No. 3, I

*Allegro con brio*

4 4 3 1 2 2 3 1 3 1 8

e: Mozart, Sonata in C, K. 330, III

*Allegretto*

3 1 2 2 2 1 1 4

f: Arne, Rule Britannia

4 4 1 1 1 2 2 4 4 8

Ex. 3/124: Tchaikovsky, Symphony No. 4, I

a.

b.

Ex.3/125: Beethoven, Symphony No.1, I

Musical notation for Ex.3/125. It shows a sequence of notes on a staff with fingerings: 2, 2, 2, 6, 6, 3, 3, 6. There are 'R' markings above the staff and brackets below. The sequence ends with 'etc.'.

c.f. Ex.2/46

Ex.3/126: Holst, The Planets, 'Mars'

Musical notation for Ex.3/126. It includes two fingering diagrams with numbers 2, 2, 2, 6, 6, 3, 3, 6 and markings like [3:], [2:], and [2:]. The word 'simile' is written between them. Below is a piano score in 5/4 time with a bass clef and various chordal accompaniment.

Ex.3/127

Musical notation for Ex.3/127. It shows rhythmic patterns with 'x' marks above notes and fingerings like 4, 2, 1, 1, 4. There are also markings for (4) and (8) and a '5<sub>1</sub>' bracket. The word 'etc.' is at the end.

Musical notation for Ex.3/127 part b. It shows fingerings: 4, 2, 1, 1, 4, 2, 1, 1, 4, etc.

Ex.3/128

Musical notation for Ex.3/128. It shows a sequence of notes with fingerings: 8, 3, 1, 3, 1, 4, 2, 2, 2, 2, 2, 2, 12, 4, 3, 1, 3, 1, 4.





Ex.3/135: Beethoven, Symphony No.7, I

a.

b.

c.

Ex.3/136a: Berlioz, Te Deum, II, 'Tibi Omnes'

a.

b: Mozart, Sinfonia Concertante (Violin and Viola), K.364, I

b.

ps = pitch separation

Ex.3/137: Rachmaninov, Symphony No.3, I

Ex. 3/138

a.

b.

c.

d.

e.

f.

g.

Ex. 3/139: Beethoven, Symphony No. 7, I

in preference to:

Ex. 3/140

a.

b.

c.

d.

e.

Ex.3/141

a: Shostakovich, Symphony No.5, IV

2 4 4 6 1 1 2 2 3 1 2 2 4 4 2 2 2 2 2 2

etc.

b: Sibelius, Karelia, III

8 3 1 3 1 3 1 8 4 4 4 4 4 3 1 3 1 4 4 8 3 1 3 1

c.f. 3/115e

Ex.3/142

a: Dvořák, 'Cello Concerto, II

8 3 1 6 2 2 2 4 4 4 6 2 4

(4) 2: 1 2 : 1 : 1:1

b: Chopin, Sonata in B minor, I

1 1 1 1 8 4 4 6 2 2 2 2 2 8 6 2 10

(4) 1: 2: 1 1 2:

c: Tchaikovsky, Symphony No.5, IV

12 1 1 1 1 4 8 4 4 4

(4) 3: 1: 1: 2: 1: 1: 1:

Ex.3/143: Schubert, Sonatina in D, Op.137, III

HR = Structural grouping created by Harmonic Rhythm

Ex.3/144: Monteverdi, Vespers, IV, 'Laudate pueri'

a.

b.

Ex.3/145: Bach, '48', I, Fugue No.8

T = Structurally accented tonic

Ex.3/146: Beethoven, Sonata in C# minor ('Moonlight'), II

a.

b.

*Allegretto*

Ex.3/147: Wagner, Tannhäuser, 'Pilgrims' Chorus'

Ex.3/148: Mozart, Clarinet Concerto, K.622, II

Ex.3/149: Bartók, Mikrokosmos, No. 149

Ex.3/150: Bartók, Mikrokosmos, No. 150

Ex.3/151: Bartók, Mikrokosmos, No.141

legro,  $\text{♩} = 138-144$

Ex.3/152: Shostakovich, Symphony No.10, III

Levels  
 (a)  
 (b) R<sub>c1</sub>  
 (c) R<sub>a1</sub>  
 (d) R<sub>a1</sub>  
 (e) R<sub>a1</sub>

Allegretto  $\text{♩} = 138$  (2) 1 1 2 2 2 2 2 4 (2) 1 1 2 2 2 2 4 2 4 2 4 1 1

$\text{♩}$  p dolce

Ex.3/153: Dvořák, Symphony No.8, IV

Allegro ma non troppo  $\text{♩} = 116$

Ex.3/154: Mozart, Sonata in D, K.284, I

Allegro

\*(LF) \*DP R \*R \*R

*f* *p* *f* *p* *f* *p* *f* *p*

DP = Duration Phrase

Ex.3/155: Borodin, On the Steppes of Central Asia (1st theme)

(♩=80) R R R \*

6 1 1 4 4 4 4 6 1 1 4 4 4 4 4 8

Pitch repetition

Ex.3/156: Borodin, On the Steppes of Central Asia (2nd theme)

Rc1 [3:] [2] \*Rc2 [3:] \*

Rc1 R1 R2 R3 Rc2 RA1 RA2 RB1 RB2

(3/157 not used)

Ex.3/158: Stravinsky, The Rite of Spring, 'Dances des Adolescentes'

The image displays a musical score for 'Dances des Adolescentes' from Stravinsky's 'The Rite of Spring'. The score is presented in a single system with a treble clef, a key signature of two flats (B-flat and E-flat), and a 2/4 time signature. The music consists of a series of eighth and sixteenth notes, often beamed together in groups. Above the staff, there are six rhythmic diagrams labeled RA1 through RA6, which show the rhythmic patterns of the notes in a simplified, step-like manner. Below the staff, there are four rhythmic diagrams labeled RB1 through RB4, which show the rhythmic patterns of the notes in a more complex, multi-measure format. The score includes several annotations: a box containing the number '27' at the beginning of the first staff; the word 'Altered barlines' at the start of the third staff; the word 'only' with a dashed line pointing to a specific note in the second staff; and the phrase 'Added barline' with an arrow pointing to a barline in the first staff. The labels RA1, RA2, RA3, RA4, RA5, RA6, RB1, RB2, RB3, and RB4 are placed below the corresponding rhythmic diagrams.

Ex.3/159: Stravinsky, The Rite of Spring, 'Glorification de l'Élué'

Vivo ♩ = 144

104 RA1 RA2 RA3 RA4

106 RA5

108 RA6

109 RA7 RA8 RA9

110 RA10 RA11

x =

Ex.3/160: Stravinsky, The Rite of Spring, 'Danse Sacrale'

• = in score

♩ = 126

149

• • 7 • 7 • • • 7 • 7 • 7 • • • 7 • 7 • • • 7 • 7 • 7 • 7 •

• • 7 • 7 • 7 • 7 • • • 7 • 7 • • • 7 • 7 • • • 7 • 7 • • • 7

• 7 • 7 • 7 • 7 • • • 7 • 7 • 7 • 7 • 7 • • • 7 • 7 • 7 • • • • 7

• • 7 • • • 7 • 7 • • • 7 • • • 7 • 7 • • • • • 7 • • • • • 7 etc.

Ex.3/161

a.

b.

c.

Ex.3/162: Schubert, Symphony No.3, III

Vivace

Ex.3/163: Beethoven, Violin Concerto, III

Ex.3/164: Beethoven, Symphony No.8, I

(d = 69)

Ex.3/165: Haydn, Sonata in E minor, Hob.XVI/34, III

*e molto*

Ex.3/166: Beethoven, Sonata in D, Op.10/3, I

Presto

Ex.3/167: Mozart, Piano Trio in Bb, K.502, II

p-p = Pitch unity

Ex.3/168: Mozart, Piano Concerto in C minor, K.491, III

Ex.3/169

a: Brahms, Requiem, II, 'Denn alles Fleisch'

Langsam

I = Interpreted  
S = subdivision  
d-r = Dissonance + resolution

b: Brahms, Symphony No.4, II

Andante moderato

Ex.3/170: Mozart, Adagio and Fugue, K.546(426), Fugue

Ex.3/171: Tchaikovsky, Swan Lake, 'Dance of the Swans'

*Alliegro moderato*

HR = Structural grouping created by Harmonic Rhythm

Ex.3/172

a. } 2 3 4 1 2 3 4 1

b. } 2 3 4 1 2 3 4 1

c. } 2 3 4 1 2 3 4 1

Ex.3/173

Ex.3/174: Bach, '48', I, Prelude No.7

[Largamente]

HR = Structural grouping created by Harmonic Rhythm

Ex.3/175: Beethoven, Overture: Prometheus, Op. 43

Allegro moderato

HR = Structural grouping created by Harmonic Rhythm  
S = Subdivision

Ex.3/176: Bach, '48', I, Fugue No. 5

Λ = Time point shared by separate voices

Ex.3/177: Bach, Sonata in G minor (Solo Violin), Fugue

Ex.3/178: Brahms, Piano Concerto No. 2, II

Attack string  $\text{♩} = 76$

ff

Allegro appassionato

f

Bar nos. 4 9 13 14 15 16 17 18 19 20

Ex. 3/179

4 4 2 2 6 2 2 2 12 (2) 1 1 1 1

(2) 1 1 1 1 2 2 2 12

Ex. 3/180

R

$d = 16$

*ff*

Allegro appassionato

*f*

*marc. sempre*

d-r = Dissonance + resolution

R

*marc.*

Ex.3/181

Musical notation for Ex.3/181. It shows a sequence of notes on a staff with fingerings: R, IR, R, IR, R, IR. A bracket above the notes indicates a phrase contour.

Ex.3/182

a.

Musical notation for Ex.3/182a. It shows notes with fingerings: R, IR, R, IR. A dashed line above the notes indicates a phrase contour.

b.

Musical notation for Ex.3/182b. It shows notes with fingerings: R, IR, R, IR. A solid line above the notes indicates a phrase contour.

c.

Musical notation for Ex.3/182c. It shows notes with fingerings: R, IR, R, IR. A solid line above the notes indicates a phrase contour.

Ex.3/183: Stravinsky, *The Rite of Spring*, 'Cortège du Sage'

Musical notation for Ex.3/183. It shows a bass line with fingerings: SR (R), R, R, R, R, R, R, R, R, R, R, R. Accents are placed over several notes. A bracket above the notes indicates a phrase contour. Below the staff, there are markings: 3: 1: 3: 1: 3: etc.

Ex.3/184: Mozart, *Symphony No. 40*, K.550, I

Phrase contour: 1: 1: 2

Musical notation for Ex.3/184. It shows notes with fingerings: (4), (4), (4). A bracket above the notes indicates a phrase contour. Below the staff, there are markings: 1 1 2 1 1 2 1 1 2.

Ex.3/185: Beethoven, *Symphony No. 1*, III

Phrase contour 1: 1: 2

Musical notation for Ex.3/185. It shows notes with asterisks (\*) above them. A bracket above the notes indicates a phrase contour. Below the staff, there are markings: 1 2 1 2 1 1 1 1 2.

Ex.3/186: Beethoven, *Symphony No. 3 ('Eroica')*, IV

Musical notation for Ex.3/186. It shows notes with asterisks (\*) above them. A bracket above the notes indicates a phrase contour. Below the staff, there are markings: 1 3 1 3 1 3 1 3.

Ex.3/187: Schumann, Sonata in A minor (Violin and Piano), Op.105, II

1 1 2 1 1 2 1 1 2 etc.

HR = Harmonic Rhythm

Ex.3/188: Bach, '48', I, Fugue No.6

7 ♩ = or equivalent

Ex.3/189: Bach, Mass in B minor, III, 'Kyrie Eleison'

Alla breve

Tenor Ky-ri-e e-lei-son, e-lei-son, e-lei-son,

Bass Ky-ri-e e-lei-son, e-lei-son, e-lei-son,

Ex. 3/190

a.

D *d* *d*

C *d* *d* *d* *d*

B 

A 

b.

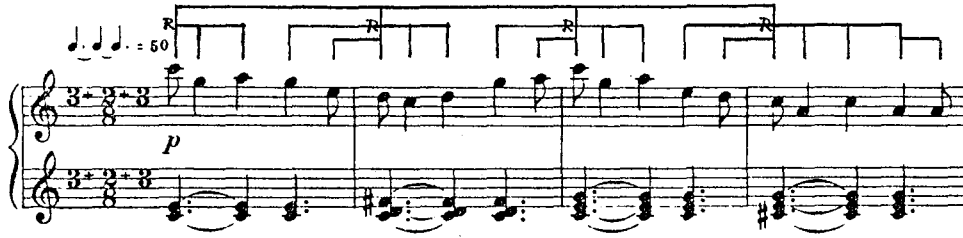
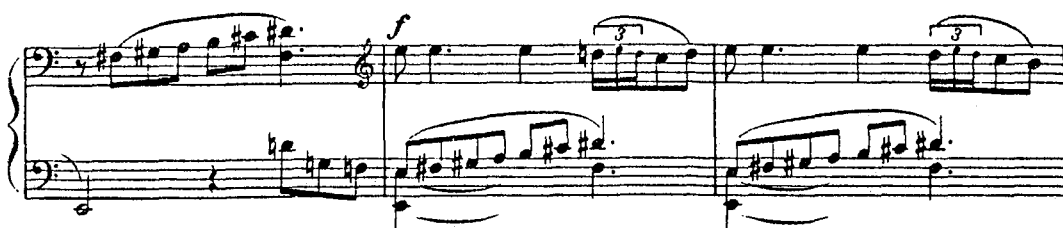
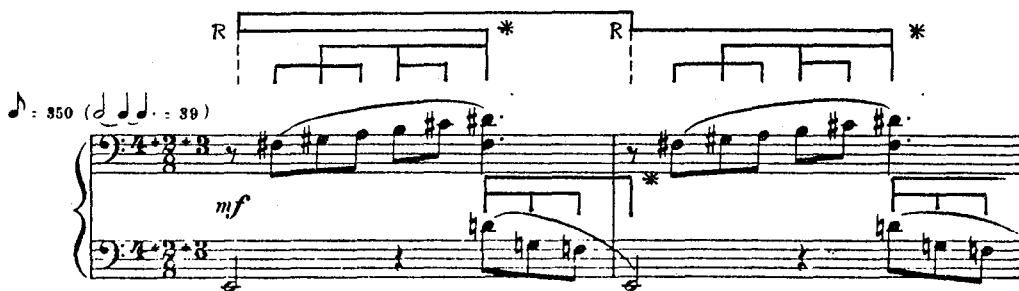
D *d* *d*

C 

B 

A 

Ex.3/191

Ex.3/192: Bartók, Mikrokosmos, No.151Ex.3/193: Bartók, Mikrokosmos, No.153Ex.3/194: Bartók, Mikrokosmos, No.148

Ex.3/195: Schubert, Impromptu in A $\flat$ , Op.90/4

Allegretto

Tr = Transferred phrase grouping  
 HR = Harmonic Rhythm  
 x | | = Structural grouping positioned or created by x.

Ex.3/196: Beethoven, Symphony No.8, II

Allegretto

Ex.3/197: Mozart, Symphony No.41, K.551, II

Andante

Ex.3/198

(a) (b)

Predominant metre:  
 2 2 2      3 3

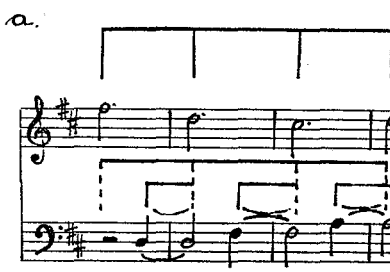
Attack string:  
 2 1 1 2      2 1 1 2

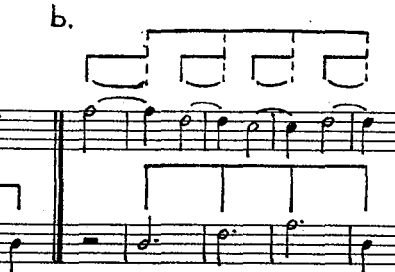
Ex.3/199

a. 

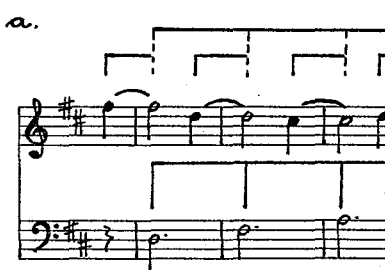
b. 

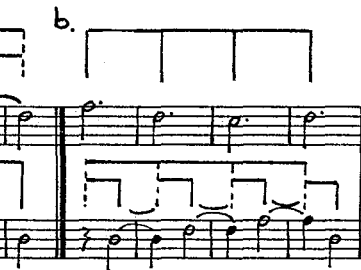
Ex.3/200

a. 

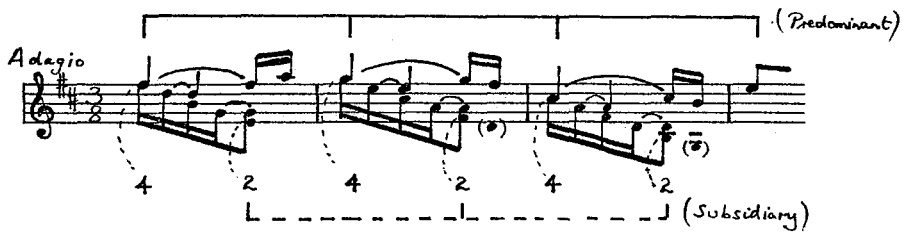
b. 

Ex.3/201

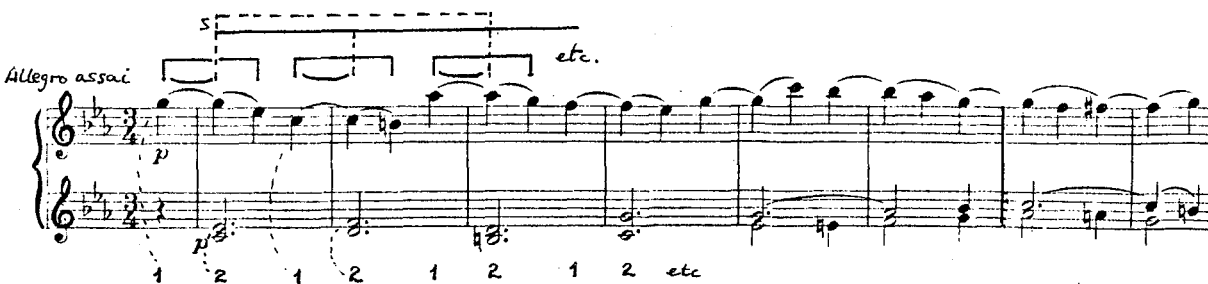
a. 

b. 

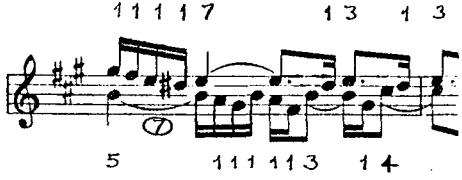
Ex.3/202: Brahms, Intermezzo in B minor, Op.119/1


*Adeagio* 

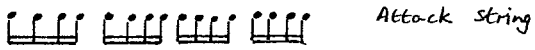
Ex.3/203: Mozart, Sonata in C minor, K.457, III

*Allegro assai* 

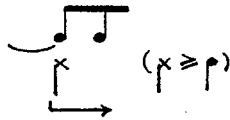
Ex.3/205: Bach, '48', II, Fugue No.19

a. 

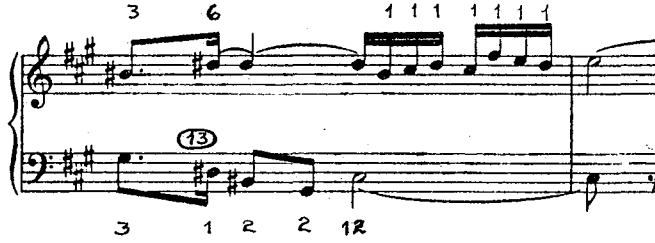
b. 

c. 

Ex.3/206



Ex.3/207: Bach, '48', II, Fugue No.19

a. 

b. 

c. 

Ex.3/208

a. 

b. 



Ex.3/210

a: Beethoven, Sonata in F (Violin and Piano, 'Spring'), Op.24, I

Allegro

HR, S  
DC, LN

MDP

p

pp

\*

b. Stravinsky, The Firebird, Infernal Dance of All Kastchei's Subjects

Allegro feroce

193

ppsub.

Simile.....

simile.....

MDP

\*

Ex.3/211: Dvořák, 'Cello Concerto, Op.104, I

Allegro ♩ = 116

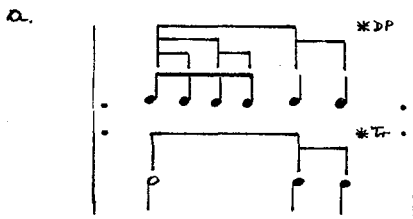
MDP

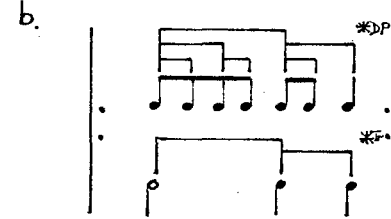
\*

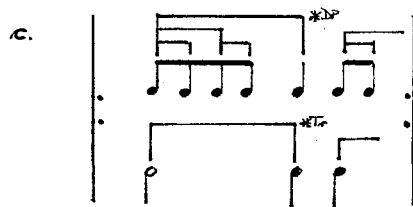
pp

267

Ex.3/212

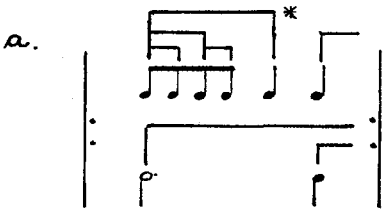
a. 

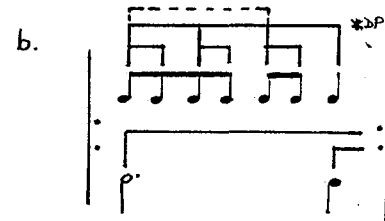
b. 

c. 

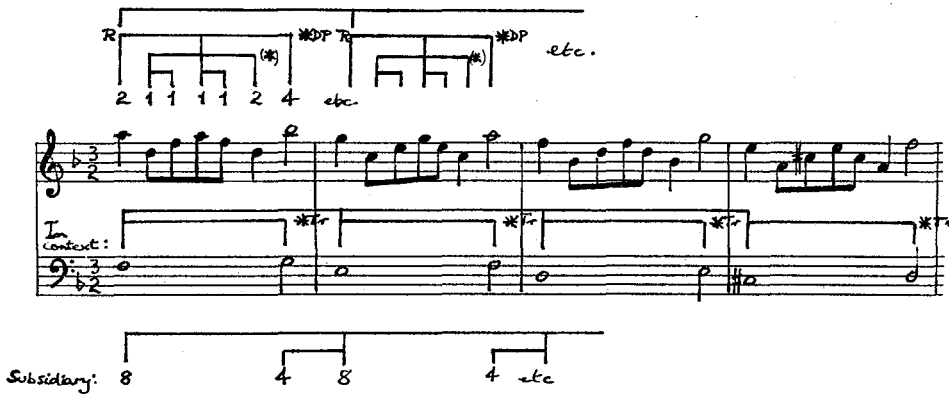
Tr = Transferred phrase grouping  
 \* = 'gives way to' (in progressive closure)


Ex.3/213

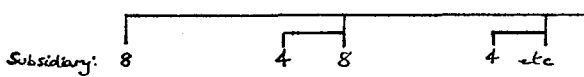
a. 

b. 

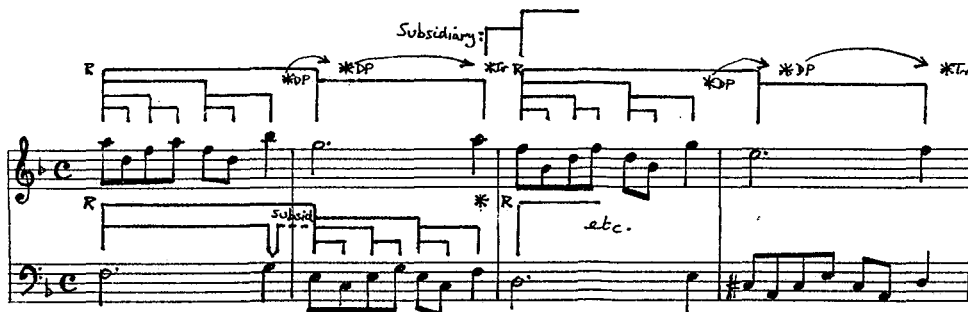
Ex.3/214: Purcell, Abdelazar, Hornpipe (Britten, Young Person's Guide, Op.34, I)

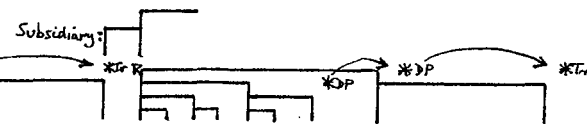


Context: 

Subsidiary: 8 4 8 4 etc 

Ex.3/215



Subsidiary: 

Ex.3/216: Mozart, Quartet in E $\flat$ , K.428, I

Ex.3/217: Francisco de la Torre, Alta (HAM No.102a)

Ex. 3/218: Schoenberg, *Six Little Piano Pieces*, Op. 19, III

Sehr langsame ♩

First system of musical notation. Treble clef, bass clef. Dynamics: *f* (treble), *mp* (bass).

Second system of musical notation. Treble clef, bass clef. Dynamics: *f* (treble), *pp* (bass).

Third system of musical notation. Treble clef, bass clef. Dynamics: *p* (treble).

Fourth system of musical notation. Treble clef, bass clef. Dynamics: *mp* (treble), *ppp* (bass).

Top line relative to overall texture.

Fingerings for the top line. Finger numbers: 4, 3, 1, 1, 1, 4, 2, (2), 1, 1, 1, 1, 1, 8, (2), 2, 1, 1, 1, 1, 1, 4, 2, (1), 3, 2, 6, 8. Dynamic markings: \*, \*dp, \*

Bottom line relative to overall texture

Fingerings for the bottom line. Finger numbers: (1), 1, 3, 1, 4, 2, 2, 1, 1, 2, 2, 2, 1, 2, 1, 3, 1, 2, (3), 1, 2, 2, 8, 1, 2, 4, (2), (6), 2, 8. Dynamic markings: xdp, xdp, xdp, xdp, xdp

Allegro (♩ = 104)

(112) Pitch pattern

Ex.4/2: Bach, '48', I, Prelude No.6

a.

b.

c.

Ex.4/3: Stravinsky, The Rite of Spring, 'Evocation of the Ancestors'

Pre-metrical:

△ = Tonic accent

Ex.4/4: Tchaikovsky, Symphony No.4, I

Estab.

(262)

Estab. = Pre-established metre  
 [---] = Subsidiary structural grouping

Ex.4/5: Prokofiev, *Romeo and Juliet*, Op.64, 'Dance'

^ = Tonic accent  
 \ = Directional grouping

Ex.4/6: Berlioz, *Harold in Italy*, Op.16, IV

----- = Subsidiary structural grouping

Ex.4/7: Bach, '48', I, Fugue No.21

PS = Pitch separation  
 HR = Harmonic Rhythm

Ex.4/8: Bach, Sonata in G minor (Solo Violin), Fugue

Ex.4/9: Bach, Suite No.3 (Solo 'Cello), Bourrée I

a. 

b. 

Ex.4/10: Bach, '48', I, Prelude No.21

a. 

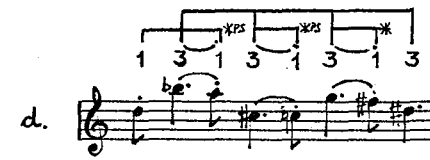
b. 

Ex.4/11: Shostakovich, Symphony No.5, I

a. 

b. 

c. 

d. 

Ex.4/12: Brahms, Symphony No.2, I

*Allegro non troppo*  


Subsidiary: 2 1 1 2 1 1 2 etc

Ex.4/13: Prokofiev, Romeo and Juliet, Op.64, 'Dance of the Maids from the Antilles'

Ex.4/14: Mozart, Sonata in A (Piano and Violin), K.305, I

Alleg.

a.

b. etc.

= Directional grouping

Ex.4/15

a.

b.

= Directional grouping

Ex.4/16: Mozart, Sonata in B $\flat$ , K.333, III

Allegretto grazioso

a.

b.

Ex.4/17: Beethoven, Sonata in C# minor ('Moonlight'), Op.27/2, III

*Poeticamente*

*p*

Ex.4/18: Bach, '48', I, Prelude No.14

— = Directional grouping

PS = Pitch separation

Ex.4/19: Chopin, Ballade No.4 in F minor, Op.52 (ending)

Subsidiary: R \* \* \* \* \* R \* \* \* \* \* R \* \* \* \* \* R \* \* \* \* \*

Ex.4/20: Bach, '48', I, Prelude No.11

LN = Longer-note accompaniment  
HR = Harmonic Rhythm

Ex.4/21: Bach, '48', II, Fugue No.6

Ex.4/22

Ex.4/23: Mozart, Sonata in F, K.332, III

Assai Allegro

Ex.4/24: Brahms, Piano Concerto in D minor, III

Allegro

etc.

Ex.4/25: Schumann, Sonata in A minor (Violin and Piano), Op.105, III

Lebhaft

$\text{♩} = 44$

T = Structurally accented tonic

Ex.4/26

a.

b.

Ex.4/27: Bach, '48', I, Prelude No.15

a.

b.

Ex.4/28: Bach, Brandenburg Concerto No.3, I

p-p = Pitch unity

Ex.4/29: Chopin, Ballade No.1 in G minor, Op.23

Moderato

T = Structurally accented tonic (in bass)  
zci = Duration contour

not:

Ex.4/30: Beethoven, Sonata in F minor, Op.2/1, I

Allegro

Ex.4/31: Beethoven, Sonata in C ('Waldstein'), Op.53, III

Allegretto moderato

R w:

\* R

sempre pp (251)

etc. simile

Ex.4/32: Chopin, Ballade No.1 in G minor, Op.23

Largo

S^A

\* R

not:

t = tonic  
^ = Tonic accent

Ex.4/33: 'Twinkle Twinkle Little Star'

Ex.4/34: Mozart, Sonata in C minor, K.457, I

Ex.4/35: Bach, '48', II, Prelude No. 6

Ex.4/36: Bach, Sonata in G minor (Solo Violin), IV

Ex.4/37: Bach, Mass in B minor, XIX, 'Confiteor'

Ex.4/38

Ex.4/39: Bach, Brandenburg Concerto No.1, I

Ex.4/40

Ex.4/41: Brahms, Piano Concerto in D minor, I

See R/45b for accompaniment

d-r = dissonance + resolution

Ex.4/42: Kodály, Suite: Hány János, V, 'Intermezzo'

Ex.4/43: Brahms, Piano Concerto No.2, III

Ex.4/44: Berlioz, Symphonie Fantastique, Op.14, II

Ex.4/45: Beethoven, Quartet, Op.18/1, I

*Allegro con brio*  
*♩ = 120*

a.

6 11 2 2 12

*Allegro con brio*  
*♩ = 120*

b.

6 11 2 2

simile

Ex.4/46

(1)P-P(-P) (2)P-P(-P) (3)P-P (4)P-P (5)P-P (6)P-P (7)P-P

Ex.4/47

1 2 3 4 5 6 7 8 9 10 11 12

Ex.4/48: Bach, Orchestral Suite No.3 in D, I

a.

b.

Rp = Repeated pitch pattern

Ex.4/49

a. b.

Ex.4/50

Ex.4/51: Schubert, Symphony No.8, I

Ex. 4/51 consists of two parts, a and b, in bass clef with a key signature of one sharp (F#) and a 3/4 time signature. Part a shows a melodic line with a dynamic marking of *p* and a bracketed structure above it with labels (A), (B), (B), and (A). Part b shows a similar melodic line with labels (A), (B), (B), and (A) above it.

Ex.4/52

Ex. 4/52 is a single melodic line in treble clef with a key signature of one sharp (F#) and a 3/4 time signature, consisting of a sequence of eighth notes.

Ex.4/53 a.

Ex. 4/53 a is a melodic line in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. It includes fingerings:  $+5 -3 +2$  and  $-3 +2 +5$ .

b.

Ex.4/54: Mozart, Sonata in F, K.332, I

Ex. 4/54 is a piano piece in F major, 3/4 time, marked *Allegro*. It shows a piano part with a circled number 89, a trill, and dynamic markings *f* and *sf*. Fingerings 3, 1, and 2 are indicated above the notes.

Ex.4/55

Ex. 4/55 consists of three parts, a, b, and c, in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. Part a shows a melodic line with a dynamic marking of *f*. Part b and c show similar melodic lines with dynamic markings of *sf*.

Ex.4/56

Ex. 4/56 is a melodic line in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. It includes fingerings: 2, 3, 1, 1, 1, 3, 1.

Ex.4/57: Beethoven, Symphony No.6, I

Part a. shows a melodic line with fingerings (1-5) and articulation marks 'R' above the notes. Part b. shows a similar melodic line with different articulation.

Ex.4/58: Tchaikovsky, Symphony No.5, IV

Tempo: *Allegro Vivace*  $d=120$ . The notation includes a piano part with fingerings (8-1, 2-2, 2-2, 2-2, 1-1, 2-2, 2-2) and dynamic markings like *(in score)*.

Ex.4/59: Tchaikovsky, Nutcracker, 'Valse des Fleurs'

Part a. includes fingerings like  $R_3, R_4$  and dynamics such as *Con Sforz.* and *5*. Part b. shows a melodic line with dynamics *3:*, *:1*, *3:*, and *:4*.

Ex.4/60: Beethoven, Sonata in C ('Waldstein'), Op.53, I

Tempo: *Allegro con brio*. The notation includes dynamic markings *cresc.*, *p*, and *ppp*, along with articulation marks like *(\*)*.

5  
d=cc  
P P P P P P

Ex.4/62: Schumann, Piano Concerto, Op.54, I

And.  
mos.  
482  
Inscord.  
4 3 1 4 etc.

Ex.4/63

a: Tchaikovsky, Symphony No.3, Op.29, I

5  
DC  
DC=Duration contour

b: Debussy, Prelude, 'La fille aux cheveux de lin'

(♩=66)  
P sans rigueur  
1 1 2 1 1 2 1 1 2 1 1 2 1 1 16  
A = Tonic accent

Ex.4/64: Stravinsky, Symphony of Psalms, II

5  
= Subsidiary structural grouping

Ex.4/65: Bach, Concerto in C minor (Two Claviers and Orchestra), BWV 1060, III

R R R

Ex.4/66: Bach, Violin Concerto in A minor, I

Ex.4/67: Chopin, Nocturne in E $\flat$ , Op. 9/2 (accompaniment)

Ex.4/68: Bach, Brandenburg Concerto No. 3, I

Ex.4/69: Brahms, Piano Concerto No. 1, III

Ex.4/70

Ex.4/71

Ex.4/72: Ravel,Piano Concerto in G,II

Adagio assai.  $\text{♩} = 76$  \*DP

*p* *espressivo*

Ex.4/73: Chopin,Ballade No.1,Op.23

Presto con fuoco

*f* *ff*

208

Marche infer

Ex.4/74

a. b.

Ex.4/75: Chopin, Ballade No.4, Op.52

HR:  
B>:  
LN:

Right hand:

Andante con moto

9 → 7 8 18 18 18

against 4 → 3 3 3 3 3 3

175

2 2 2 2 2 2 2 2 2 2 2 2

cresc.

f

HR = Harmonic Rhythm  
B> = Bass accentuation  
LN = Longer-note accompaniment  
--- = Subsidiary structural grouping

Ex.4/76: Bach, Mass in B minor, VII, 'Domine Deus'

dec. r

Ex.4/77: Holst, The Planets, 'Mars'

(♩ = 120)

Ex.4/78: Mozart, Fantasia, K.475, Andantino

a.

b.

Ex.4/79: Beethoven, Sonata in F minor, Op.2/1, I

*Allegro*

Ex.4/80: Tchaikovsky, Symphony No.6, IV

Ex.4/81

Ex.4/82: Tippett, Fantasia Concertante on a Theme of Corelli, Theme

HR:

Ex.4/83

Musical notation for Ex.4/83. It shows a rhythmic pattern on a staff with a treble clef. The pattern consists of eighth notes grouped in pairs. There are two main groups, each starting with a 'd-r' label. Above the staff, there are horizontal lines and a 'p.c.' marking. The first group is marked with 'd-r' and the second with 'd-r'.

Ex.4/84: Beethoven, Sonata in C minor, Op.10/1, I

Musical notation for Ex.4/84, Beethoven's Sonata in C minor, Op.10/1, I. The tempo is marked 'Allegro'. The notation shows a piano part with a treble and bass clef. The right hand has a rhythmic pattern with 'd-r' labels and 'R' markings. The left hand has a bass line. A 'p' marking is present in the bass line.

Ex.4/85: Mozart, Sonata in F, K.332, I

Musical notation for Ex.4/85, Mozart's Sonata in F, K.332, I. The tempo is marked 'Allegro'. The notation shows a piano part with a treble and bass clef. The right hand has a rhythmic pattern with 'd-r' labels and 'R' markings. The left hand has a bass line. A 'p' marking is present in the bass line.

Ex.4/86: Beethoven, Sonata in A, Op.2/2, IV

Musical notation for Ex.4/86, Beethoven's Sonata in A, Op.2/2, IV. The tempo is marked 'Grazioso'. The notation shows a piano part with a treble and bass clef. The right hand has a rhythmic pattern with 'd-r' labels and 'HR' markings. The left hand has a bass line. A 'p' marking is present in the bass line.

Ex.4/87: Mozart, Sonata in B, K.333, III

Musical notation for Ex.4/87, Mozart's Sonata in B, K.333, III. The tempo is marked 'Allegretto grazioso'. The notation shows a piano part with a treble and bass clef. The right hand has a rhythmic pattern with 'd-r' labels and 'R' markings. The left hand has a bass line. A 'p' marking is present in the bass line. Part (a) shows the notation with a circled '3' in the bass line. Part (b) shows a diagram of overlapping phrase groupings with a circled '3' in the bass line. The diagram includes a treble clef, a 'p' marking, and a 'd-r' label. The diagram shows a sequence of notes: 6 11 2 2 2 2 6 4 4. A bracket below the notes is labeled 'Overlapping phrase groupings'.

Ex.4/88: Beethoven, Sonata in C minor, Op.10/1, II

Ex.4/89: Mozart, Symphony No.41, IV

Ex.4/90: Scriabin, Prelude in Gb, Op.11/13

Ex.4/91: Tchaikovsky, Symphony No.5, IV

Ex.4/92: Bach, Concerto in D minor (Two Violins), I

Ex.4/93: Mozart, Piano Concerto in A, K.448, I

Ex.4/94: Tchaikovsky, Piano Concerto No.1, I

Ex.4/95: Bach, Mass in B minor, III, 'Kyrie Eleison'

Ex.4/96: Beethoven, Symphony No.3, II

Adagio assai

8 3 1 3 1 1 2 2 2 2 2 2 4 3 4 3 1 4

Ex.4/97: Beethoven, Overture, Leonore No.3, Op.72a

Allegro

Bass: etc.

Ex.4/98: Beethoven, Sonata in C minor, Op.10/1, II

Adagio  
molto

Ex.4/99: Wagner, Die Meistersinger, Prelude

Estad:

With articulation:

Ex.4/100: Mozart, Fantasia, K.475, Andantino

Ex.4/101: Beethoven, Sonata in C minor, Op.10/1, II

4/102 not used

Ex.4/103: Brahms, Piano Concerto No.2, IV

Ex.4/104: Brahms,Piano Concerto No.2,I

Ex.4/105: Tchaikovsky,Symphony No.5,III

Ex.4/106: Tchaikovsky,Symphony No.5,III

Ex.4/107: Beethoven, Violin Concerto, I

Allegro ma non troppo

2 2 1 2 1 1 1 1 4

*p* *dolce p*

Timp.

Ex.4/108: R. Strauss, Reverie, Op. 9/4

Andantino

♩ = ca. 48

*sempre pp*

Ex.4/109: Bach, '48', I, Prelude No. 24

Right-hand voices

HR:

Indirect resolution

Ex.4/110: Chopin, Andante Spianato and Grande Polonaise, Op. 22

HR:

\*(R)

1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 2 2 8 4

*f* *p*

Ex.4/111: Chopin, Op.22

Allegro molto  
(♩=80)

Ex.4/112

Resolutions  
in category:

1. Categories (2)-(1) (3)-(1) (4)-(1) (5)-(1) (6)-(1)

2. but also:

3.

4.

5.





Ex.4/118: Brahms, Piano Concerto No.1, I

Ex.4/119: Bach, Partita No.1 (Solo Violin), Gigue

T = Structurally accented tonic  
 HR = Harmonic Rhythm  
 S = Subdivision  
 dc = Duration Contour  
 R = Repetition

Ex.4/120: Mozart, Serenade ('Eine Kleine Nachtmusik'), K.525, III

Ex.4/121: Mozart, Quartet in D minor, K.421, III



Ex.4/122: Berlioz, Harold in Italy, Op.16, III



Ex.4/123: Chopin, Piano Concerto No.1, Op.11, I



Ex.4/124: Prokofiev, Romeo and Juliet, Op.64, 'Folk Dance'



*t = Tonic*

Ex.4/125: Schubert, Impromptu in A $\flat$ , Op.90/4

*Allegretto*

Ex.4/126: Bach, '48', I, Prelude No.24

*Alto:*

Ex.4/127: Mozart, Serenade, K.320, V

MC = Metrical Contour

Ex.4/128: Brahms, Piano Concerto No.1, III

Ex.4/129: Bach, Mass in B minor, XXI, 'Hosanna'

Ho-san-na, Ho-san-na,

Ex.4/130: Brahms, Intermezzo in E, Op.117/1

Andante moderato

*p dolce*

DC:

Ex.4/131: Bach, '48', II, Prelude No.14

Ex.4/132: Mozart, Sonata in D, K.576, I

Allegro

(f) (stacc.)

-N- = Neighbour-note configuration

Ex.4/133: Haydn, Quartet, Op. 50/1, III

*Poco Allegretto*

Ex.4/134: Mozart, Quintet, K. 516, V

*Top line without articulation:*  
*Allegro*

*PS in bass*

Ex.4/135: Beethoven, Sonata in E, Op. 14/1, III

*Allegro comodo*

Ex.4/136: Mozart, Sonata in A, K. 331, I, Variation 1

*Andante grazioso*

Ex.4/137: Bartók, Musie for Strings, Percussion and Celesta, I

Andante tranquillo  
♩ = 112-116

I = Interpreted

Ex.4/138

a.

b.

Ex.4/139

Structural time lengths of Harmonic Rhythm

Ex.4/140: Debussy, Prélude à l'Après-midi d'un Faune (ending)

Très lent

Ex.4/141

a. b.

HR: HR:

Ex.4/142: Beethoven, Sonata in E minor, Op. 90, I

Mit Lebhaftigkeit  
(con animato)

a.

h-h = Harmonic unity (Harmonic Rhythm)

b.

p-p = Pitch unity

c.

HR:

Ex.4/143: 'Gaudeamus Igitur'

DC alone: 3 1 4 4 3 1 8 etc.

R HR: 3 1 4 4 3 1 8 3 1 4 4 2 2 8

\*DP R \*DP R \*DP

HR: C d g C

Ex.4/144: Beethoven, Sonata in D, Op.10/3, IV

Allegro

R HR (2D) 1 1 6 R 1 1 6 1 1 1

p cresc. f

V I— V I—  
[4] [7] [4] [7]

> = Stronger than (and incongruent with)

Ex.4/145: Bach, '48', II, Prelude No.4

HR: (2D)

Without HR: DC, LN: 1 1 1 6 1 2 1 5 1

Ex.4/146: Beethoven, Piano Trio, Op.97, III

Andante

HR: R 2 3 1 1 2 1 1 1 2 3 1 1 2

DC, LN: 2 3

con 8<sup>va</sup> bassa



Ex.4/151: Mussorgsky, Pictures at an Exhibition, 'The Gnome'

Handwritten musical score for 'The Gnome' by Mussorgsky. The score is in 3/4 time with a tempo of quarter note = 126. It features a treble and bass clef. Above the treble clef, there are handwritten annotations: 'R' above the first measure, 'S' above the second measure, and 'R' above the third measure. Below these, there are rhythmic patterns: 'd-r' with '1 5' below it, and 'd-r' with '1 2' below it. The music includes dynamic markings 'sf sf' and 'etc.'. To the right of the score, there is a diagram showing a sequence of notes: '1 5', '1 2', '1 2', '1 5' with arrows indicating movement between them, and the text 'etc.' and 'HR, dr' below.

Ex.4/152: Beethoven, Sonata in D, Op.10/3, I

Handwritten musical score for the first movement of Beethoven's Sonata in D, Op.10/3. The score is in 3/4 time. Above the bass clef, there are handwritten annotations: '(HR)' above the first measure, 'HR:' above the second measure, and 'etc. (S of (4) not shown) simile' to the right. The music includes dynamic markings 'pp', 'sim. cresc.', and 'etc. simile'. Below the score, there is a note 'HR > LN' and a symbol for 'Directional grouping' (a backslash with a vertical line) followed by '= Directional grouping'.

Ex.4/153: Beethoven, Sonata in E, Op.14/1, I

Handwritten musical score for the first movement of Beethoven's Sonata in E, Op.14/1. The score is in 3/4 time with a tempo of 'Allegro (4)'. It features a treble and bass clef. Above the treble clef, there are handwritten annotations: 'Bass' above the first measure, 'HR:' above the second measure, 'LN:' above the third measure, and '\* Top line' to the right. The music includes dynamic markings 'p-p-p' and 'etc.'. Below the score, there is a note 'p-p-p p-p-p etc.'.

Ex.4/154

Handwritten musical score for Ex.4/154. The score is in 3/4 time with a tempo of 'Allegro'. It features a treble and bass clef. Above the treble clef, there are handwritten annotations: 'LN (bass)' above the first measure, 'LN (top)' above the second measure, and '1-3' below the first measure. The music includes dynamic markings 'etc.'. Below the score, there is a note 'etc.'.

Ex.4/155: Saint-Saëns, Quartet, Op.112, II

Ex.4/156: Brahms, Intermezzo in E minor, Op.119/2

Ex.4/157: Handel, Violin Sonata in D, Op.1/13, IV

a: Rossini, Barber of Seville, Overture

Ex.4/158

a.

b.

Ex.4/159: Mozart, Quartet, K.590, IV

Allegro

S: HR:

XDP, Tr

XDP

XDP

Tr = Transferred Phrase Grouping

Ex.4/160: Mozart, Sonata in F, K.332, I

LN, HR:

98

(d - r)

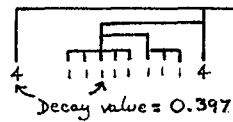
Ex.4/161: Bach, English Suite No.3, Gavotte

Bass: pc: (500)

XDP-tale(tr)

Ex.4/162: Mozart, Sonata in G, K.330, III

DC alone:



Allegretto

HR

BR

PS

XDP-tale(tr)

Ex.4/163: Beethoven, Piano Concerto No.4, I

DC alone:  $4 \begin{matrix} 1 \\ 1 \\ 1 \\ 1 \\ 4 \end{matrix}$   
 Decay value = 0.25

etc. simile

Ex.4/164: Mozart, Symphony No. 40, K.550, III

Decay value = 0.166

Y I Y I

Ex.4/165: Schumann, Sonata in A minor (Violin and Piano), Op.105, II

Decay value = 0.44  
 0.71

(♩ = 108)

Y I

Ex.4/166: Bach, Mass in B minor, XXI, 'Hosanna'

etc. simile

Ex.4/167: Chopin, Mazurka in B $\flat$ , Op.7/1

Ex.4/168

a: Mozart, Sonata in F (Piano and Violin), K.377, II

b: Franck, Symphony in D minor, I

Ex.4/169: Mozart, Sonata in A (Piano and Violin), K.305, I

Ex.4/170: Beethoven, Sonata in F minor, Op.57, I

*Allegro assai*

*ff* (224)

Ex.4/171

D.C. Adore: 1 2 1 2

HR: 1 1-1 1 2

Ex.4/172

HR: P P P P

↑ = Representative chord (HR)  
 N = Neighbour-note

Ex.4/173: Beethoven, Sonata in F minor, Op.2/1, I

*Attack String:* HR: R R

*pp*

(15)

Ex.4/173.1: Bach, Musical Offering (as Ex.1/6)

Theme:

1

Variation:

1

2

Ex.4/174: Chopin, Ballade No.1, Op.23

*Moderato*

Ex.4/175: Corelli, Sonata, Op.5/8, Sarabanda

Ex.4/176: Mozart, Symphony No.34, K.338, I

Ex.4/177

Ex.4/178: Bartók, Concerto for Orchestra, II

Sequences of roots:

B	A#	B	G#	A#	A#	B	G#	F#	G#	C	A#	A#	G#(+)	C#	E+	F#	E(+)	B	E+	A+
0	2	0	9	7	2	0	10	10	11	4	8	7	0	9	2	2	7	2	7	0
5	7	5	2	0	7	5	2	0	1	6	10	9	2	7	10	0	10	5	10	3

Sequences of roots:

A+	A#(+)	A#	A#	E+	F#	F#
8	0	5	0			
3	7	0	7	10	0	0

Ex.4/179: Shostakovich, Symphony No.1, III

Sequences of roots:

D $\flat$	b(1)	E $\flat$	e $\flat$	F	G $\flat$	A $\flat$ (aug)	D $\flat$
2	0			10	11	0	
10	8	0		9	10	11	0
0	1	2		4	5	6	7

Ex.4/180: Barber, Adagio for Strings

Sequences of roots:

F=0:	e $\flat$	F	G $\flat$	A $\flat$	D $\flat$ (1)	G $\flat$	e $\flat$	F	R
	7	9	10	0	3	8	1	10	0

## Ex.4/181: Brahms, Intermezzo in A, Op.118/2

Andante R →

*p* *p dol.*

*pp*

Ex.4/182: R. Rogers, The King and I, 'March of the Siamese Children'

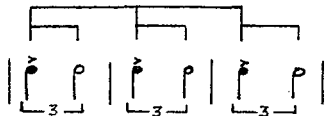
Moderato

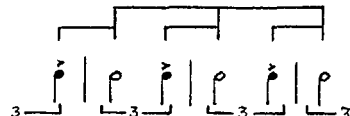
*pp*

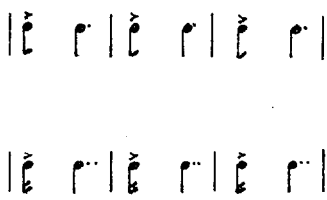


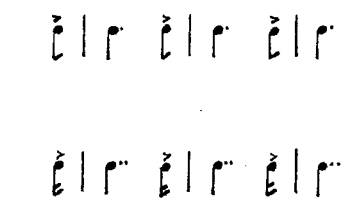


Ex. 5/1

a. 

b. 






Ex. 5/2: Beethoven, Sonata in G, Op. 14/2, I

*Allegro*

*p legato*



Ex. 5/3: Schumann, Album for the Young, Op. 68, 'Soldiers' March'

*f*




Ex. 5/4: Bartók, Allegro Barbaro

$\text{♩} = 76-84$

*ff* *mf* *ff*

*p* *p* *p*

*Estad.*



Ex.5/5: Dvořák, Symphony No.6, III

Ex.5/6: Brahms, Rhapsody in E<sub>b</sub>, Op.119/4

Ex.5/7: Stravinsky, The Rite of Spring, 'Danses des Adolescentes'

2/4 metre pre-estd.  
by pitch pattern repetition

Structural timelengths from dynamic accentuation:

Ex.5/8: Beethoven, Symphony No.6, I

Ex.5/9: Beethoven, Symphony No.3 ('Eroica'), IV

Musical notation for Ex.5/9, showing a melodic line with two 'R' markings above it, indicating rests or specific articulation points.

Ex.5/10

Musical notation for Ex.5/10, including a staff with notes and a corresponding staff of rhythmic stems below it.

Structural time-lengths of articulation and remaining durations

Ex. 5/10.1

$\text{♩} \geq 108$   
to ensure  
upbeat

Diagrammatic notation for Ex.5/10.1 showing stems and beams with '7' markings, representing structural time-lengths.

Ex. 5/10.2

Diagrammatic notation for Ex.5/10.2 showing two musical phrases with 'sf' markings and beams, with the word 'implies' between them.

( $\frown$  = Articulation, not ties)

Ex.5/11

Ex.5/12: Beethoven, Quartet in G# minor, Op.131, IV

Ex.5/13: Haydn, Symphony No.97 ('Salomon'), IV

Ex. 5/15

Ex. 5/14: Mozart, Duo for violin and viola, K.423, III

Ex.5/16: adapted from: Beethoven, Sonata in Eb, Op.58/3, IV

Ex.5/17: Lassus, Chanson, 'Bon Jour Mon Coeur'

XA = Articulated phrasing

Ex. 5/18 *Bon jour mon cœur, bon jour ma dou- ce vi- e, Bon* etc. as above - see ||



Ex.5/21: Brahms, Piano Concerto No.1, III

*Estd:*

*Predominant, becoming subsidiary*

*\*DP*

*Br: ...\*...\**

*...sta.*

*Top line: Subsidiary, becoming predominant*

*Predom. (Estd.)*  
*→ subsid.*

*Subsid. → predom.*

*Predom. (Estd.)*  
*→ subsid.*

*Subsid. → predom.*

Ex.5/22: Janáček, Sinfonietta, IV

*R<sub>B</sub>*

*de R<sub>A</sub>*

*R<sub>A</sub>*

*R<sub>B</sub>*

*Allargato (d. = 52)*

*/ = Directional grouping*  
*Estd = Pre-established metre*  
*^ = Tonic accent*

Ex.5/23: Bach,Orchestral Suite No.2 in B minor, Badinerie

Ex.5/24: Bizet,L'Arlesienne,Suite No.1,I,Overture

Ex.5/25: Mozart,Violin Concerto in G,K.216,II

Ex.5/26: Berlioz,Harold in Italy,I

Ex.5/27: Brahms, Symphony No.2, II

Adagio non troppo

poco f

poco f

pp

poco f

p

Ex.5/28: Dvořák, Slavonic Dances, Op.46, I

Presto

R LN

\* LN

\* XDP

\* XDP LN

\* LN

\* XDP

\* XDP

Ex.5/29: Tchaikovsky, Piano Concerto No.1, I

Allegro non troppo

RB

RA

\* RA

\* R

\* R

\* R

\* R

\* RB

\* Rc (4)

206

(2) (2)

\* Rc

\* Rc

\* Rc

\* Rc

Ex.5/30: Brahms, Symphony No.2, I

HR  
B>  
R: LN:

Allegro non troppo

Musical score for Ex. 5/30, Brahms Symphony No. 2, I, measures 135-140. The score is in 3/4 time and D major. It features three staves: Violin I, Violin II, and Bass. Measure 135 is circled. Above the staves, there are performance markings: HR, B>, and R: LN:.

Continuation of the musical score for Ex. 5/30, Brahms Symphony No. 2, I, measures 141-146. The score continues on the three staves (Violin I, Violin II, Bass) with the same instrumentation and tempo.

Ex.5/31: Shostakovich, Symphony No.1, II

Musical score for Ex. 5/31, Shostakovich Symphony No. 1, II, measures 37-42. The score is in 3/4 time and D major. It features four staves: Violin I, Violin II, Triangolo, and Strings. Measure 37 is circled. Above the staves, there are performance markings: RA, DC: S, \*P, R, \*DP, R, LN:.

a.

Continuation of the musical score for Ex. 5/31, Shostakovich Symphony No. 1, II, measures 43-46. The score continues on the four staves (Violin I, Violin II, Triangolo, Strings) with the same instrumentation and tempo.

b.

Musical score for Ex. 5/31, Shostakovich Symphony No. 1, II, measures 47-50. The score is in 3/4 time and D major. It features two staves: Violin I and Bass. Measure 47 is circled. Above the staves, there is a performance marking: \*DP.

Ex.5/32: Stravinsky, L'Histoire du Soldat, 'Marche du Soldat'

Top line alone: (R) *Esed* \*XP R \*XP \*XP R

R (R) \*XP R S (R) \*XP

Ex. 5/33

a: Debussy, Nocturnes, II, 'Fêtes'

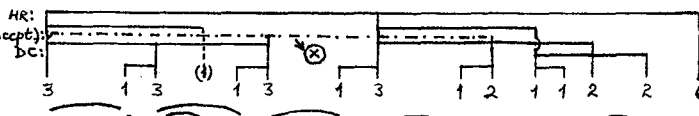


Top line relative to accompaniment :

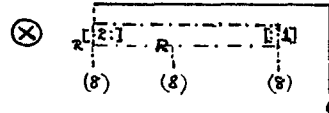
*Animé*

Ex. 5/33 ctd.

b: Ravel, Introduction and Allegro

Top line relative to accompaniment: R (Accept):

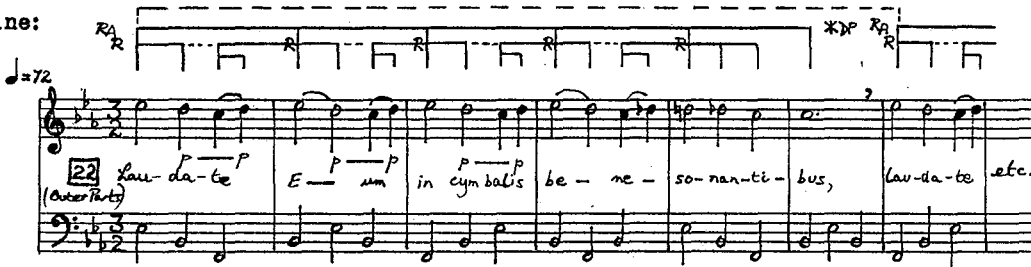
HR:    
 DC:    
 b.    
 Accept = Accompaniment



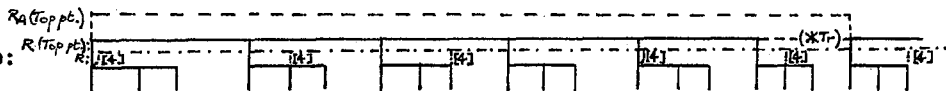
c. 

Ex. 5/34: Stravinsky, Symphony of Psalms, III

Top line:

   
 ♩ = 72   
 [22] Lau-da-te E um in cymbalis be-ne-so-nan-ti-bus, lau-da-te etc.   
 (Outer Parts)

Bottom line relative to top:



Ex. 5/35: Ravel, Quartet in F, II

Assez vif   
 ♩ = 92   


Ex. 5/36: Schoenberg, Six Little Piano Pieces, Op. 19, I

Leicht, zart (♩)

ppp

etwas zögernd - - -

p

pp

flüchtig

ppp

p

espress.

leicht

pp



Ex. 5/38

a.

b.

Ex. 5/39: Schoenberg, Piano Concerto, I

a.

b.

Ex. 5/40: Mozart, Sonata in A, K. 331, III (adapted)

Allegretto

