

MTO 15.1 Examples: Bor, Sonata-Formal Functions

(Note: audio, video, and other interactive examples are only available online)

<http://www.mtosmt.org/issues/mto.09.15.1/mto.09.15.1.bor.php>

Animation 1a.

Animation 1a

Layer 1
Layer 2
Layer 3

The image displays a musical score for 'Animation 1a' with three layers. Layer 1 is the top staff, Layer 2 is the middle staff, and Layer 3 is the bottom staff. The score is written in a complex, multi-measure format with various musical notations including notes, rests, and dynamic markings. The layers are color-coded: Layer 1 is red, Layer 2 is green, and Layer 3 is blue.

Animation 1b.

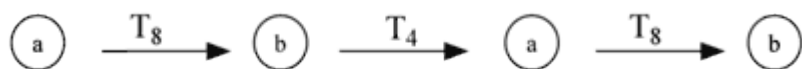
Animation 1b

Layer 1
Layer 2
Layer 3

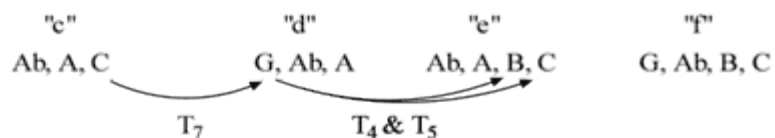
The image shows a diagram for 'Animation 1b' with three layers of musical notation. Layer 1 is the top staff, Layer 2 is the middle staff, and Layer 3 is the bottom staff. The notation consists of letters (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z) arranged in a grid-like pattern. Arrows indicate the flow of the notation between layers and across the grid.

Example 1. Exposition, 1st theme group, measures 1–17 (3 layers)

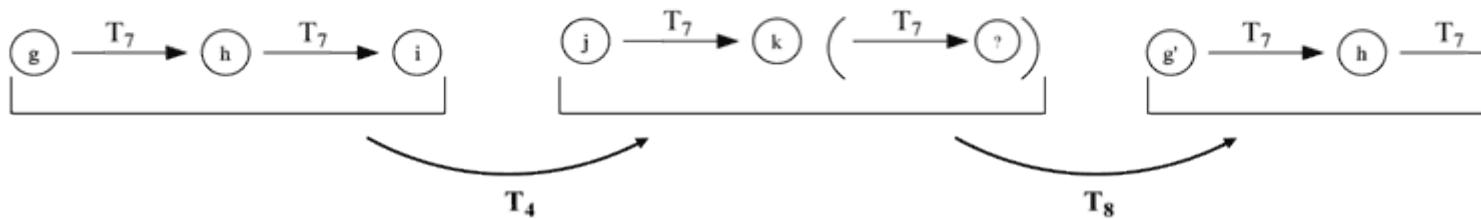
Layer 1. $a = \{G\#, A, Bb\}$; $b = \{E, F, F\#\}$



Layer 2. $c = \{Ab, A, C\}$; $d = \{G, Ab, A\}$; $e = \{Ab, A, B, C\}$; $f = \{G, Ab, B, C\}$



Layer 3. $g = \langle F, B, C\#, D \rangle$; $h = \langle C, F\#, G\#, A \rangle$; $i = \langle G, C\#, D\#, E \rangle$ (implied);
 $j = \langle A, Eb, F, F\# \rangle$; $k = \langle E, A\#, C, C\# \rangle$ (implied)



Animation 2a.

Animation 2a

Layer 1
Layer 2

The image displays a musical score for Animation 2a, consisting of two layers. Layer 1 is represented by a green line and Layer 2 by an orange line. The score is written on multiple staves, showing various musical notations including notes, rests, and dynamic markings. The notation is complex, with many notes and rests, and some markings that are difficult to read. The score is divided into several systems, with measures numbered on the left side of each system.

Animation 2b.

Animation 2b

Layer 2

T_4

T_5

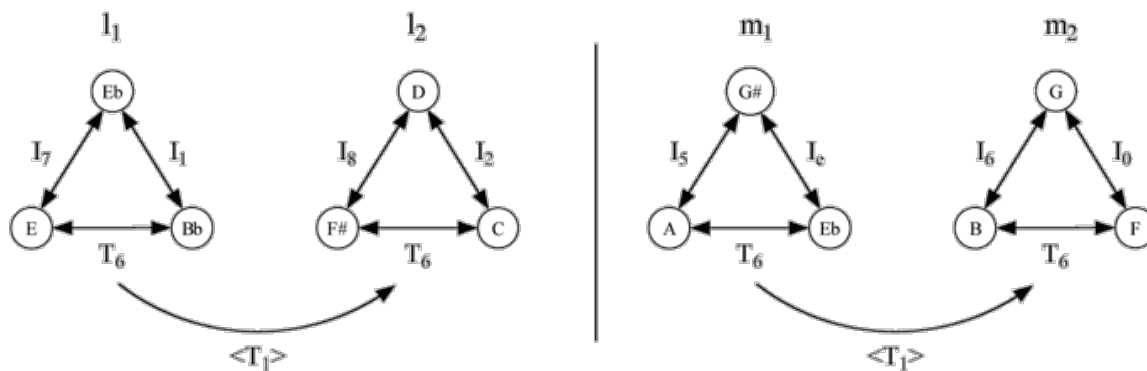
A	C#	F	A	C#
D	F#	Bb	D	F#
G	B	Eb	G	B
C	E	Ab	C	E
F	A	D#	F	A
Bb	D	G#	Bb	D

The image shows a diagram for Animation 2b, Layer 2. It features a 6x5 grid of musical notes. The notes are arranged in a pattern that suggests a specific musical structure. The notes are: Row 1: A, C#, F, A, C#; Row 2: D, F#, Bb, D, F#; Row 3: G, B, Eb, G, B; Row 4: C, E, Ab, C, E; Row 5: F, A, D#, F, A; Row 6: Bb, D, G#, Bb, D. A horizontal arrow labeled T_4 points to the right above the grid. A vertical arrow labeled T_5 points downwards to the left of the grid.

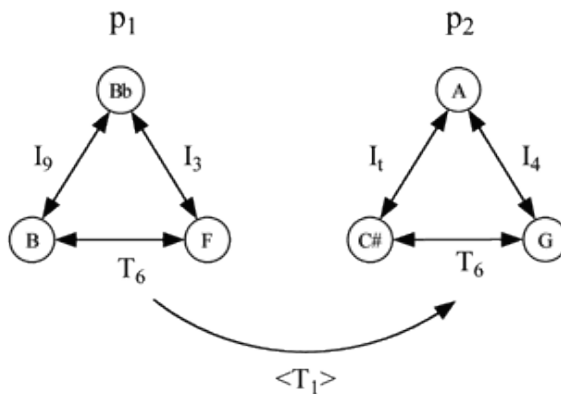
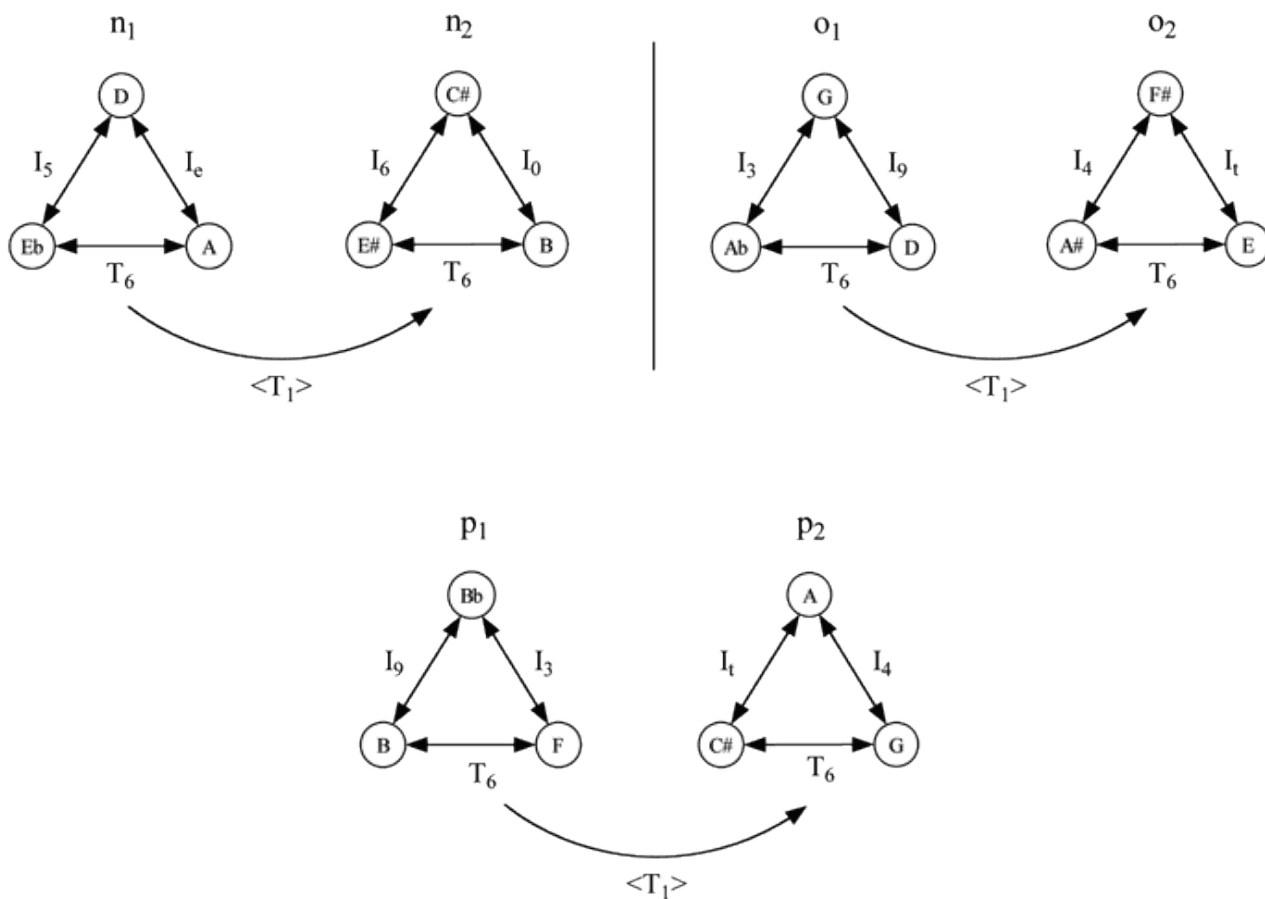
Example 2. Exposition, 2nd theme group, measures 18–35 (2 layers)

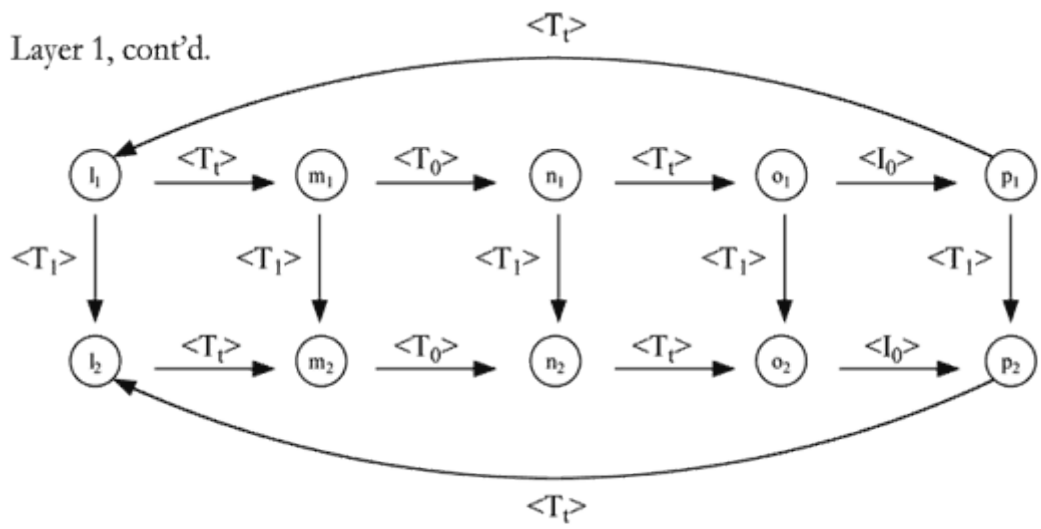
Layer 1. $l = \langle l_1, l_2 \rangle$; $m = \langle m_1, m_2 \rangle$; $n = \langle n_1, n_2 \rangle$; $o = \langle o_1, o_2 \rangle$; $p = \langle p_1, p_2 \rangle$

$l_1 = \langle Eb, E, Bb \rangle$; $l_2 = \langle D, F\#, C \rangle$; $m_1 = \langle G\#, A, Eb \rangle$; $m_2 = \langle G, B, F \rangle$; $n_1 = \langle D, Eb, A \rangle$;
 $n_2 = \langle C\#, E\#, B \rangle$; $o_1 = \langle G, Ab, D \rangle$; $o_2 = \langle F\#, A\#, E \rangle$; $p_1 = \langle Bb, B, F \rangle$; $p_2 = \langle A, C\#, G \rangle$



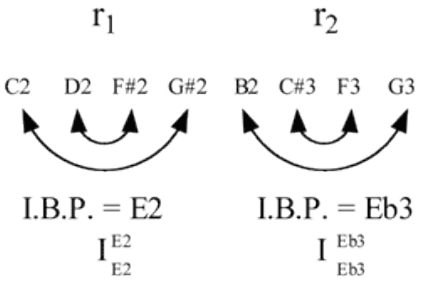
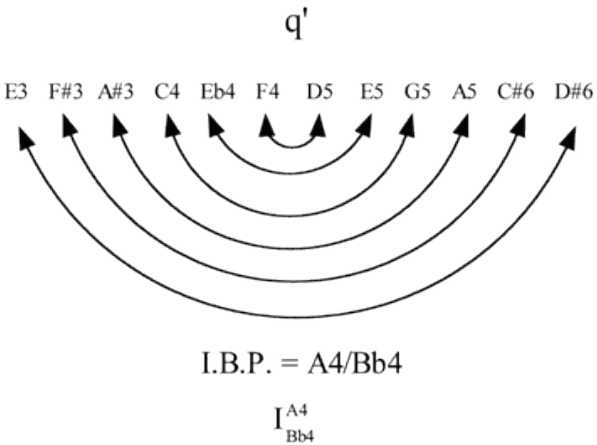
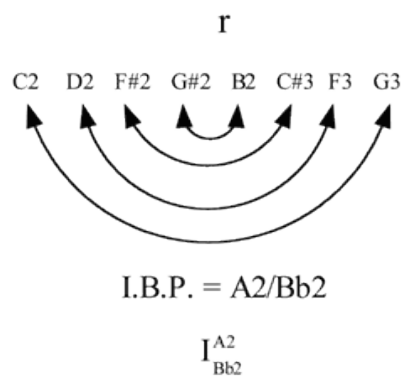
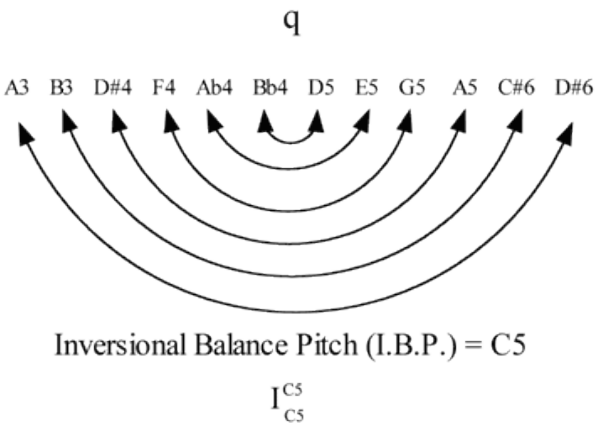
Layer 1, cont'd.





Layer 2. $q = \langle q_1, q_2, q_3, q_4 \rangle$; $r = \langle r_1, r_2 \rangle$

$q_1 = \langle A3, B3, D\#4 \rangle$; $q_2 = \langle F4, Ab4, Bb4 \rangle$; $q_3 = \langle D5, E5, G5 \rangle$; $q_4 = \langle A5, C\#6, D\#6 \rangle$;
 $r_1 = \langle C2, D2, F\#2, G\#2 \rangle$; $r_2 = \langle B2, C\#3, F3, G3 \rangle$



Animation 3a.

Animation 3a

Layer 1
Layer 2
Layer 3

The image displays a musical score for Animation 3a, consisting of three layers of music. Layer 1 is highlighted in pink, Layer 2 in orange, and Layer 3 in green. The score is presented in two columns of staves, with measures 32 through 36 visible on the left and 37 through 41 on the right. The notation includes various musical symbols such as notes, rests, and dynamic markings.

Animation 3b.

Animation 3b

Layer 1

→ T₄

G B B \flat G
C E A \flat C
T₃ ↓ F A D \flat F
B \flat D G \flat B \flat
B \flat G B B \flat

Layer 2

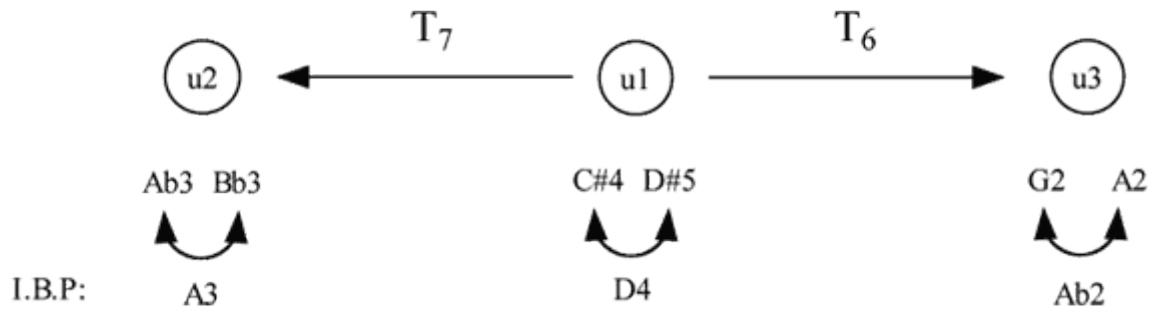
→ T₃

B \flat D G \flat B \flat
T₃ ↓ B \flat G B B \flat
A \flat C E A \flat
D \flat F A D \flat

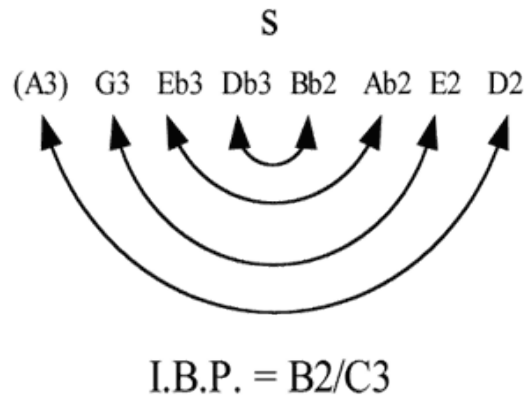
The diagram illustrates chord progressions for Animation 3b. It shows two layers of chords. Layer 1 starts with G B B \flat G and C E A \flat C, followed by a transition T₄ to F A D \flat F, B \flat D G \flat B \flat , and B \flat G B B \flat . Layer 2 starts with B \flat D G \flat B \flat , followed by a transition T₃ to B \flat G B B \flat , A \flat C E A \flat , and D \flat F A D \flat .

Example 3. Exposition, measures 36–51 (3 layers)

Layer 1. $u_1 = \{C\#4, D\#4\}$; $u_2 = \{Ab3, Bb3\}$; $u_3 = \{G2, A2\}$

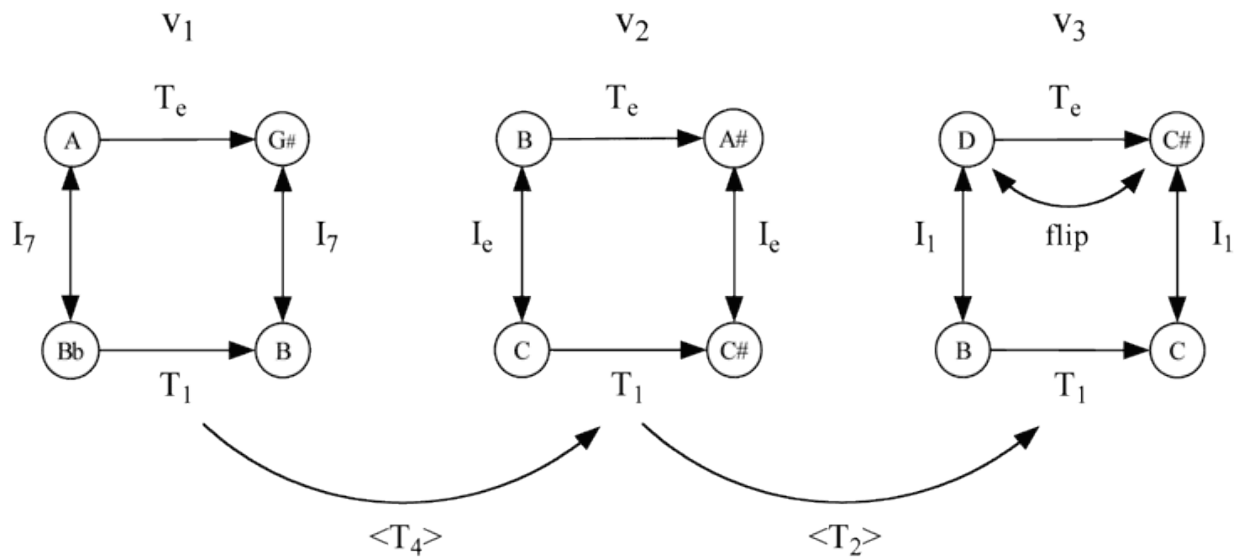


Layer 2. $r; s = \langle (A3), G3, Eb3, Db3, Bb2, Ab2, E2, D2 \rangle$

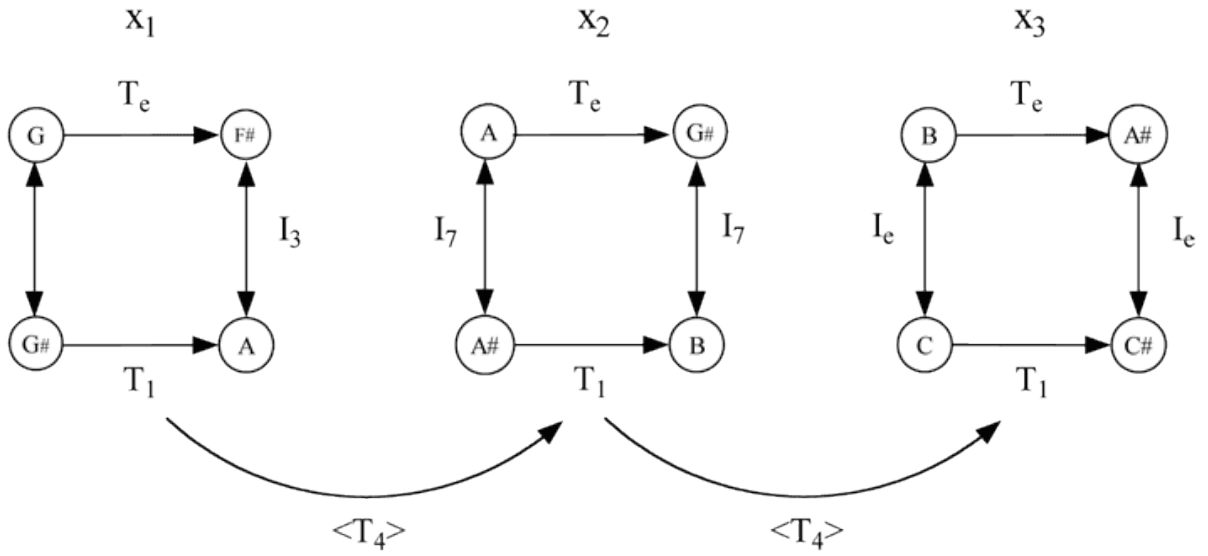
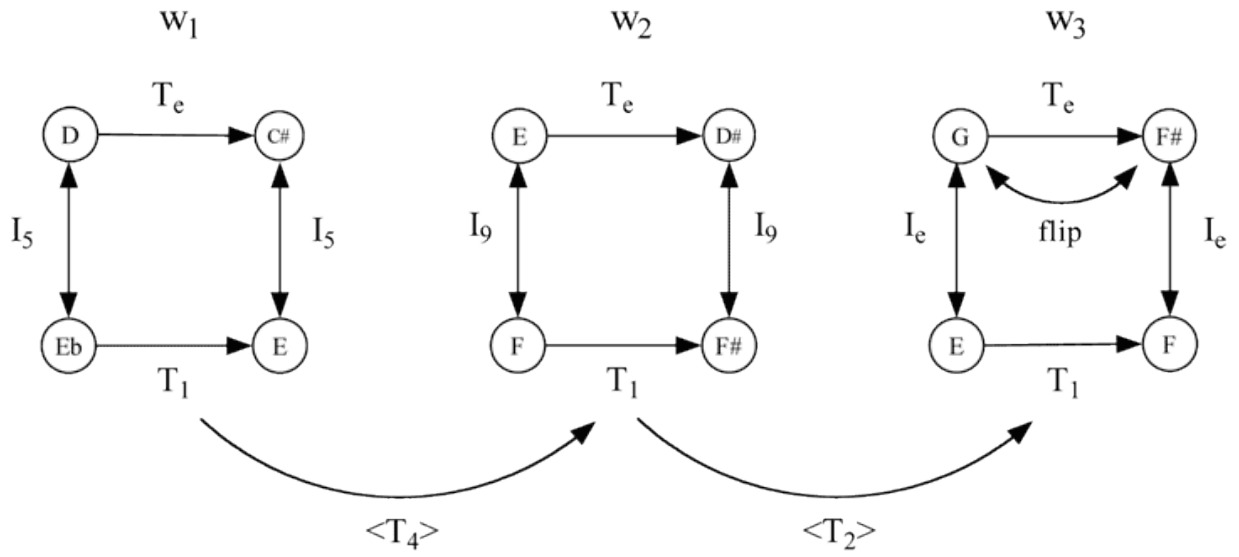


Layer 3. $v = \langle v_1, v_2, v_3 \rangle$; $w = \langle w_1, w_2, w_3 \rangle$; $x = \langle x_1, x_2, x_3 \rangle$

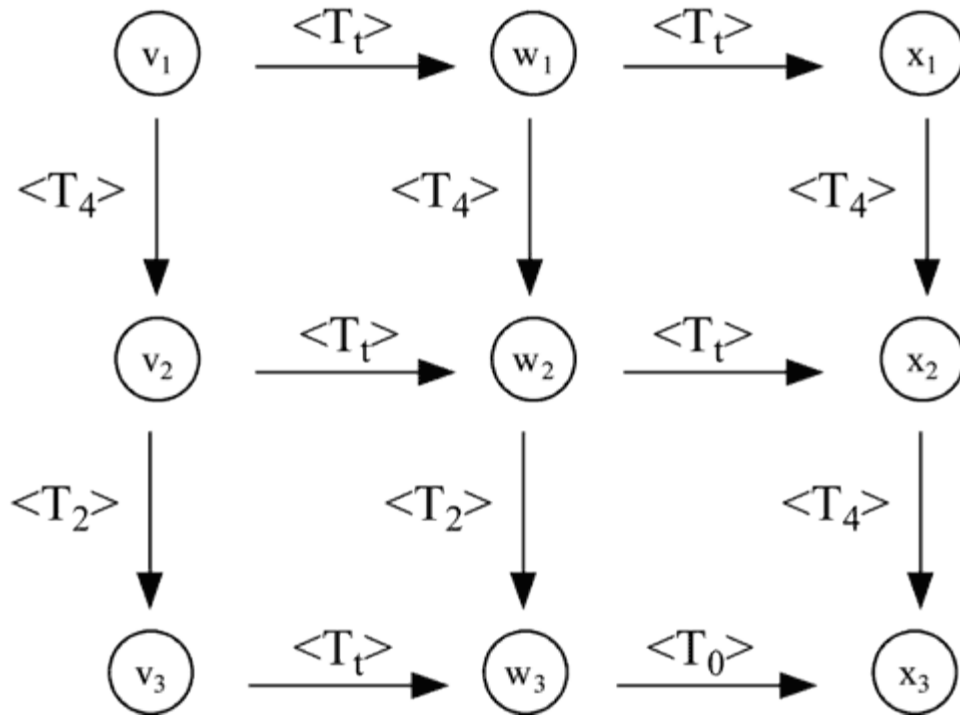
$v_1 = \langle A, G\#, Bb, B \rangle$; $v_2 = \langle B, A\#, C, C\# \rangle$; $v_3 = \langle C\#, D, B, C \rangle$
 $w_1 = \langle D, C\#, Eb, E \rangle$; $w_2 = \langle E, D\#, F, F\# \rangle$; $w_3 = \langle F\#, G, E, F \rangle$
 $x_1 = \langle G, F\#, G\#, A \rangle$; $x_2 = \langle A, G\#, A\#, B \rangle$; $x_3 = \langle B, A\#, C, (C\#) \rangle$



Layer 3, cont'd.



Layer 3, cont'd.



Animation 4.



Example 4. Recapitulation, 1st theme group, measures 52–74 (1 layer)

$$a = \{G\#, A, Bb\}$$

Animation 5a.

Animation 5a

Layer 2

The image displays a complex musical score for Animation 5a. It features multiple staves of musical notation, including treble and bass clefs, notes, rests, and dynamic markings. A red line labeled 'Layer 2' is positioned at the top left. The score is organized into two main sections, each with its own set of staves. The notation includes various rhythmic values and articulation marks, such as slurs and accents.

Animation 5b.

Animation 5b

The diagram illustrates a grid of notes for Animation 5b. The notes are arranged in a 6x2 grid:

A	C [#]	F	A	C [#]
D	F [#]	B ^b	D	F [#]
G	B	E ^b	G	B
C	E	A ^b	C	E
F	A	D ^b	F	A
B ^b	D	G ^b	B ^b	D

Transformation arrows are shown:

- A horizontal arrow labeled T_4 points to the right, positioned above the first row of notes.
- A vertical arrow labeled T_8 points downwards, positioned to the left of the first column of notes.

Example 5. Exposition, measures 36–51 (3 layers)

$s_1 = \langle A, G, Eb, Db \rangle$; $s_2 = \langle Bb, Ab, E, D \rangle$; $z = \langle F\#, E, C, Bb \rangle$ (all descending)

I.B.P.C. (r_2) = Eb

I.B.P.C. (s_1) = F

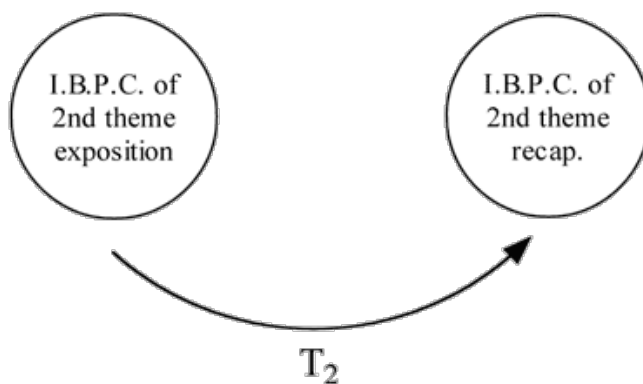
I.B.P.C. (r_1) = E

I.B.P.C. (s_2) = F#

I.B.P.C. (q) = C

I.B.P.C. (z) = D

(I.B.P.C. (r) = A/Bb I.B.P.C. (s) = B/C)



mm. 93-98 = {Db, Eb, E, G, G#, A, Bb}

mm. 1-4 = {C, F, F#, G#, A, Bb, B}

Db	Eb	E	G	G#	A	Bb		}	Aggregate completion (except D)	
				G#	A	Bb	C			F

Figure 1. Formal scheme of the movement

