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MTO 26.2 Examples: Kahrs, Consonance, Dissonance, and Formal Proportions in Two Works by Sofia Gubaidulina

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

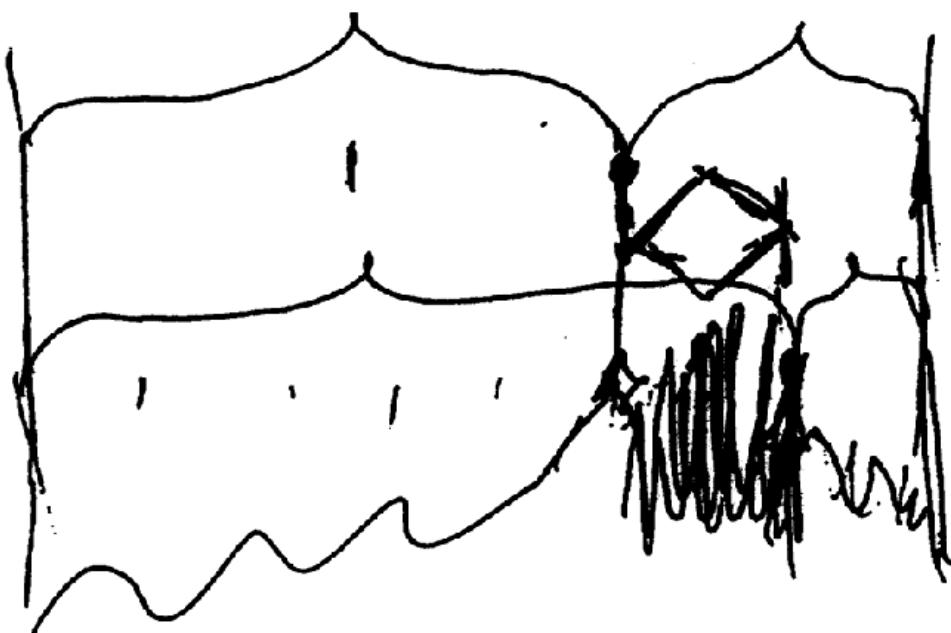
<https://mtosmt.org/issues/mto.20.26.2/mto.20.26.2.kahrs.html>

Example 1a. A parameter complex from Ewell 2013, Example 1

Consonant EPs	Dissonant EPs
1. Articulations and Means of Sound Production: <ul style="list-style-type: none">• Legato• Arco strings• Cantabile voice	1. Articulations and Means of Sound Production: <ul style="list-style-type: none">• Staccato, Accents, Tremolo, Trills• Pizzicato strings• Sotto voce, Sprechstimme, Sprechgesang
2. Melody: <ul style="list-style-type: none">• Smooth movement• Smaller intervals	2. Melody: <ul style="list-style-type: none">• Leaps• Wider intervals
3. Rhythm: <ul style="list-style-type: none">• Monorhythmic	3. Rhythm: <ul style="list-style-type: none">• Polyrhythmic
4. Texture: <ul style="list-style-type: none">• Continuous	4. Texture: <ul style="list-style-type: none">• Discontinuous
5. Compositional Writing: <ul style="list-style-type: none">• Precise	5. Compositional Writing: <ul style="list-style-type: none">• Aleatoric

Example 1b. A list of numerical series of increasing dissonance, from Lukomsky and Gubaidulina 1999, p. 28, Ex. 1

Example 1c. An example of dissonance between conflicting proportions, from Lukomsky and Gubaidulina 1999, p. 28, Ex. 2



Example 2a. The first entrance of the waterphones in *Am Rande*, in which the sound is linked to high notes in the cello

125 $\text{♪} = 96$

28 $\rightarrow 9''$ **unexpected new sound**

Acq. I 5 9
II 5 9

"abyss" of title

Vc. I $\text{♪} = 96$

Vc. II $\text{♪} = 96$

Vc. III $\text{♪} = 96$

Vc. IV $\text{♪} = 96$

129 $\text{♪} = 60$

29 $\rightarrow 12''$ **also linked to waterphone**

Acq. I 9 6
II 9 6

Vc. I $\text{♪} = 60$

Vc. II $\text{♪} = 60$

**) solo*

p $\text{♪} = 60$ p

new sound linked to "abyss"
by instrumentation/register

Example 2b. Late re-entrance of waterphone in *Am Rande*, in conjunction with indeterminate cello slides and return of high-register “abyss”

178

I

II

Vc. I

39 \approx 48"

l. v. sempre

arco

f

l. v. sempre

arco

f

linked to final sustained reentrance of waterphone

"abyss" of title returns with pitch obscured

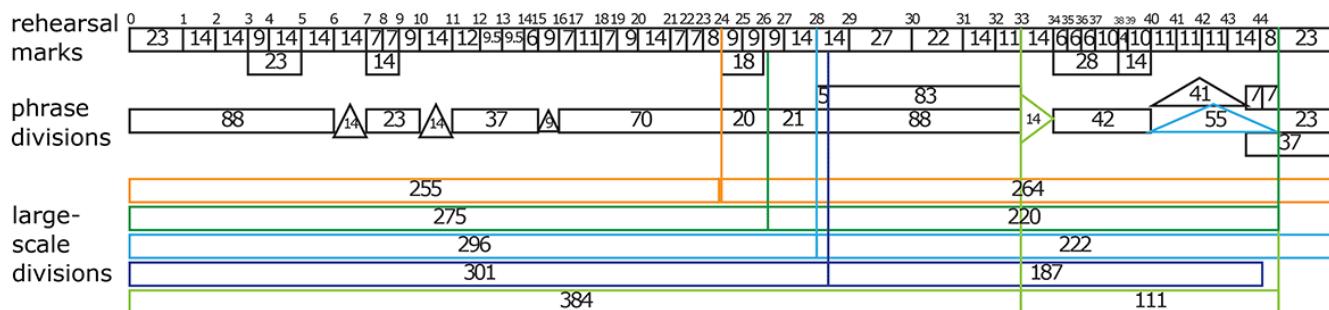
Example 2c. Brief reappearance of waterphone in conjunction with *sul ponticello* and tremolo near the end of *Am Rande*, contextually presenting such sounds as dissonances to be resolved

249

Acq. II I II III IV V VI VII

consonance → dissonance → consonance

Example 3. The full form of *Meditation*, as compiled from sketches at the Paul Sacher Stiftung (used with permission)



Example 4. An explanation of Gubaidulina's use of the number alphabet, from Milne 2007, p.170, Table 4.1

9	=	J																																													
14	=	Bach																																													
23	=	J. Bach																																													
32	=	S. Bach																																													
37	=	J. Chr[istus]																																													
41	=	J. S. Bach																																													
51	=	Bach + J. Chr.																																													
73	=	S. Bach + J.S. Bach																																													
88	=	Bach + (2 x J. Chr.)																																													
114	=	Bach + (2 x J. S. Bach)																																													
158	=	Johann Sebastian Bach																																													
187	=	(2 x S. Bach) + (3 x J. S. Bach)																																													
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	↓
1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		23		24	

Example 5. The “dissonant” center of *Meditation* with divisions from the sketches and activity shown in each instrument

rehearsal marks	24	25	26	27	28	29	30	31	32	33	34
	9	9	9	14	14	27	22	14	11	14	
harpsichord		quintuplet clusters from Eb				E major in unison with bass slowly build clusters, move higher					
violin 1			Eb Major				Eb Major				
violin 2			C Minor				C Minor				
viola			col legno				col legno				
cello			richochet				richochet				
contrabass		Eb Major/C Minor	circular bowing			E Major	standard articulation transitioning to tremolo				
large-scale divisions	255+264	275+220	296+222	301+187						384+111	

Example 6. The incipit of the eponymous Bach Chorale (a) and its influence on the dissonant sounds of the middle section of *Meditation* (b-d)

(a) incipit from Bach Chorale

104 25 g¹, L, Cemb. *pp* *s.p.* *sempre* *s.t.* *mf* *tremolo*

unison to cluster

circular bowing

(b) V-c C-b

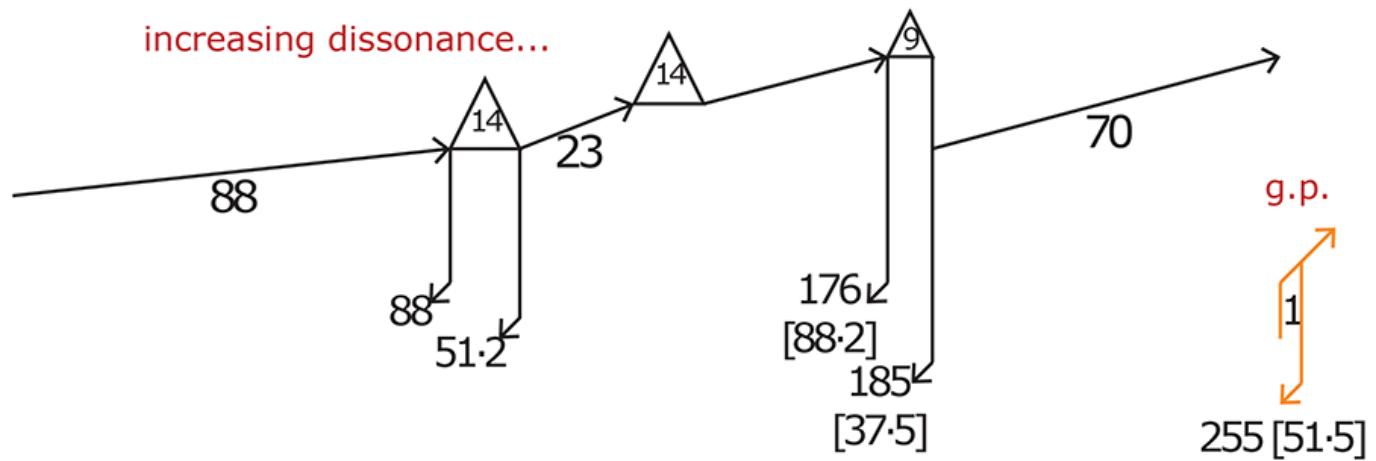
116 I.M. 16', 8' Cemb. *mf* *legato → rit.* *n → nnnnn, n → nnn, n → nh* *sempre* *sempre*

(c) C-b

107 26 V-ni V-La *C.L. ric.* *sfp* *ricochets*

Example 7. The opening of *Meditation* as shown in the sketches (used with permission)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
23	14	14	9	14	14	14	7	7	9	14	12	9.5	9.5	6	9	7	11	7	9	14	7	7	8	



Example 8. Consonances and consonance-dissonance shifts in the three chorale statements in the opening of *Meditation*

(a)

33

6 meno mosso $\text{♩} = 48$

Cemb.

C. b. solo vibr. mf consonant

(b)

50

10 4 meno mosso $\text{♩} = 48$

Cemb. ord. ord. p

V-ni

V-La pizz. vibr. mf

V-c s.t. vibrato

C. b.

6 8', 4', 5' consonant dissonant

(c)

69

15 4 I M. 8', 16', 5' meno mosso $\text{♩} = 48$

Cemb. mf

Example 9. The opening of the second meditation, shifting from consonance to dissonance

becoming dissonant...

7 più mosso $\text{♩} = 63$

8

Cemb. **consonant**

V-ni *ord. vibr.* *ord.*

V-La

V-c

C-b

9 più mosso $\text{♩} = 96$

Cemb. **completely dissonant**

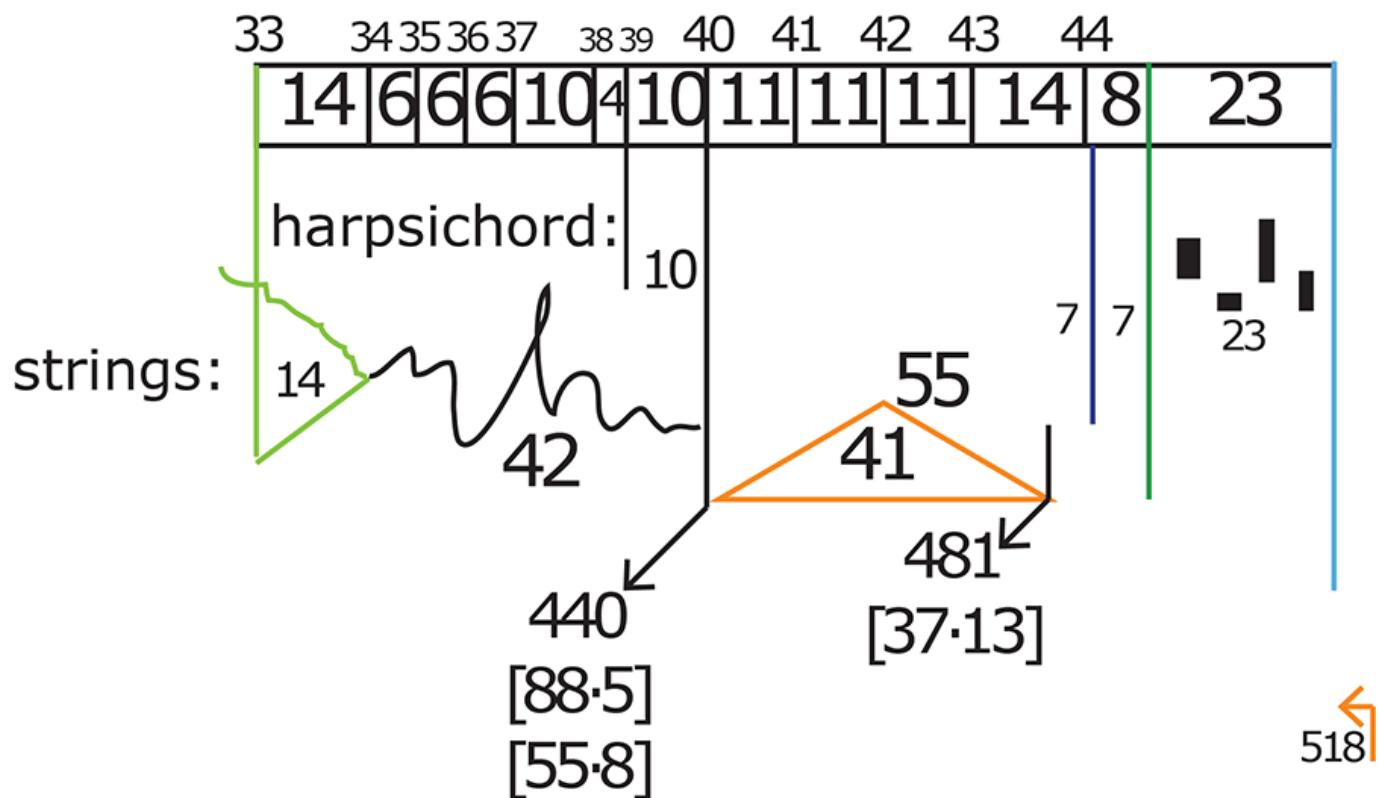
V-ni

V-La

V-c

C-b *arco* *tremolo glissando*

Example 10. Outline of form at the conclusion as shown in the sketches (used with permission)



Example 11. Consonance and dissonance at the end of *Meditation*

33 più mosso $\text{♩} = 72$ residually dissonant

Cemb

(a)

ord. consonant

35 all dissonant

V-ni

(b)

V-c

C-b

40 meno mosso $\text{♩} = 66$

163 Cemb.

(c) consonant (chorale statement)

ord.

V-ni

V-La

V-C

C-B

11d. Summary of dissonance in harpsichord clusters in the conclusion of *Meditation*

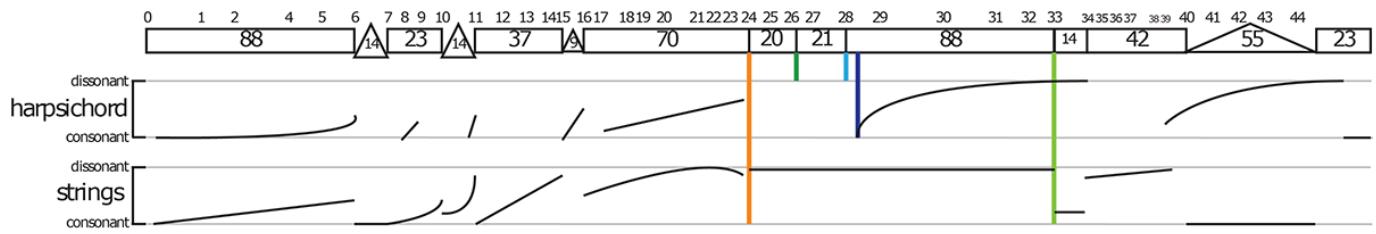
(d)

slightly dissonant → very dissonant

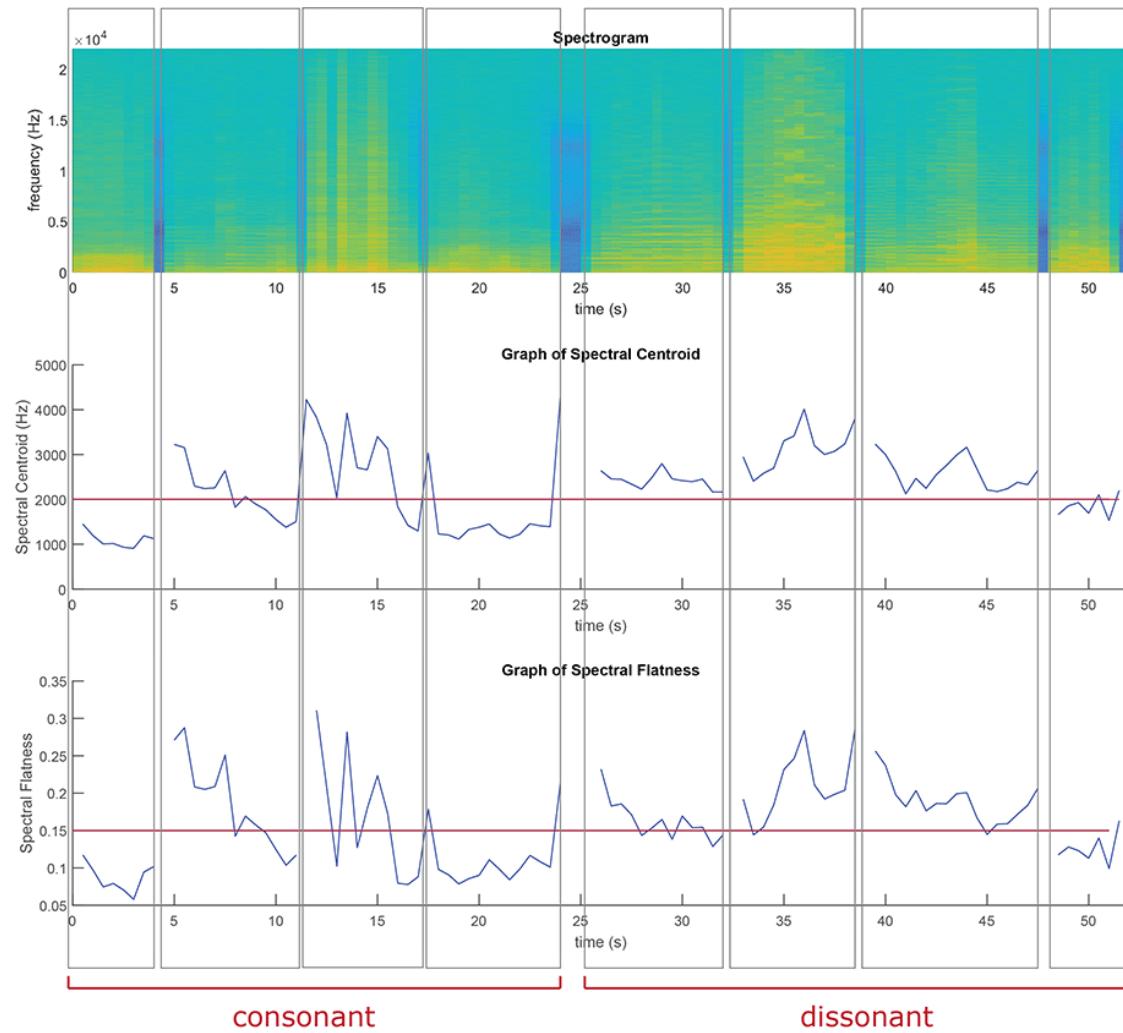
Example 12a. Consonance and dissonance across the conclusion of *Meditation*

	33	34	35	36	37
harpsichord		slightly dissonant		very dissonant	consonant
strings	consonant	dissonant		consonant	

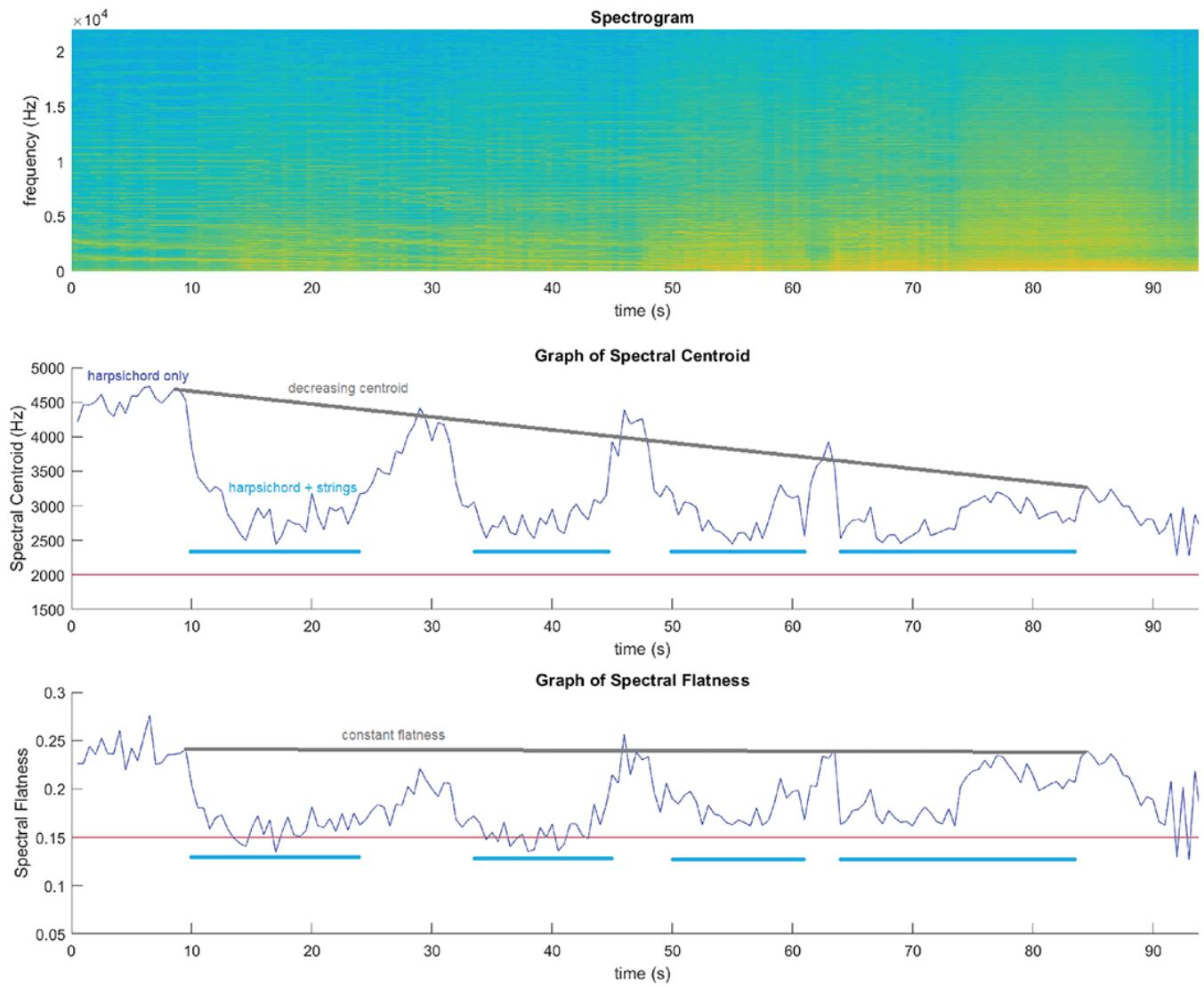
Example 12b. Consonance and dissonance across all of *Meditation*



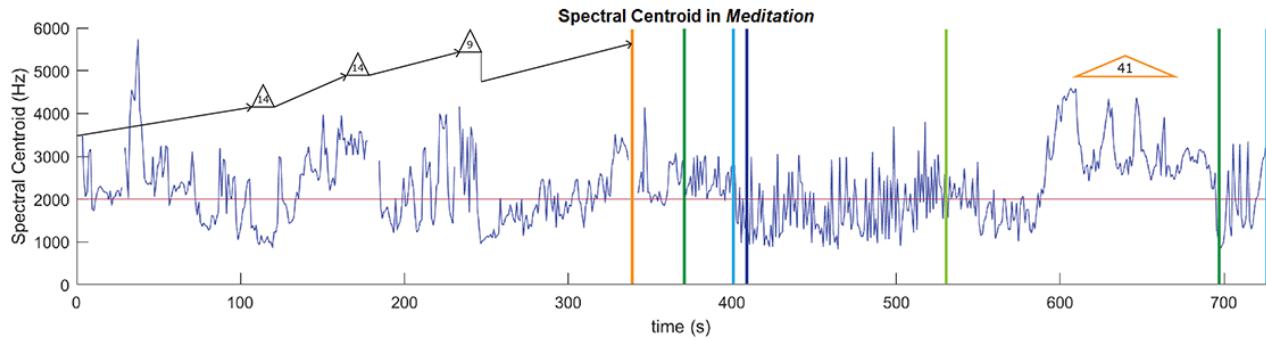
Example 13. Spectrograms and graphs of spectral parameters for clearly consonant and dissonant excerpts from *Meditation*
 (Click on bracketed areas to see and hear the fragments)



Example 14. Spectrogram and graphs of spectral parameters for the conclusion of the *Meditation* showing the distinct qualities of string and harpsichord sounds and the non-correlation of centroid and flatness



Example 15. Spectral centroid as a proxy for dissonance over all of *Meditation* with formal overlay from the sketches as represented in Examples 3, 7, and 10



Example 16. Appearance of the “Dies Irae” in close contact with dissonant sounds as discussed in Example 2

titular abyss (from Figure 2a)

135

31 $\text{J} = 132$

marks "Dies iae" as dissonant by association

I

II

III

Vc.

IV

V

VI

VII

Example 17. Consonance and dissonance in the opening of *Am Rande* in (a) score and (b) schematic summary; “Dies Irae” statements expand in length as consonant statements become rhythmically higher and introduce timbrally dissonant tremolo

consonant (sixths, rhythmically spaced, harmonics)

The musical score (a) shows seven staves for Celli (I-VII) and Vc. (Vc.). Measure 15 begins with a melodic line in staff I. Measures 3 and 4 are highlighted with red boxes. Measure 3 shows rhythmic patterns of sixths and harmonics. Measure 4 shows a transition with dynamic markings *mf*, *p*, and *p* with a double bar line. Measures 5-7 are highlighted with red boxes. Measure 5 contains a cluster with *pizz.* and dynamic *mf*. Measures 6-7 show rhythmic patterns of sixths and harmonics. Measures 8-10 show rhythmic patterns of sixths and harmonics. The chart (b) below shows the performance data for the Celli 1-4, corresponding to the measures in the score. The chart includes a legend for Tremolo, C#6, F#5, B4, and E4, and a note for Celli 5-7: *Dies Irae*.

(a)

0 1 2 3 4 5 6 7 8 9 10 11

Trem.
C#6
F#5
B4
E4

Celli 1-4:

Celli 5-7: *Dies Irae*

(b)

Example 18a. Context for a “Dies Irae” entrance near the beginning of *Am Rande*

tremolo
(dissonant
continuation
of consonant
opening)

54

11 *meno mosso* $\text{♩} = 72$

12 $\text{♩} = 120$

“Dies irae”
(dissonant
as in Figure 16)

I

II

III

Vc.

IV

V

VI

VII

Example 18b. Context for a “Dies Irae” entrance near the end of *Am Rande*

extended dissonant waterphone/cello-slide (as in Figure 2b)

44

197 $\xrightarrow{48''}$ *l. v. semper*

45 $\text{♩} = 72$

Acq.

II

I

Vc.

III

IV

“Dies irae” (dissonant
as in Figure 14)

Example 19. Summary of consonances and dissonances in both *Meditation* and *Am Rande*

	Consonant	Dissonant
Both	Harmonics, <i>ordinario</i> , <i>sul tasto</i> , triads	Tremolo, clusters, <i>sul ponticello</i> , staccato
Meditation	Step-based melodies	Circular-bowing, leap-based melodies
Am Rande	Long durations	Waterphone, short durations, pitch slides

Example 20. Spectrograms and graphs of spectral parameters for clearly consonant and dissonant excerpts from *Am Rande*

(Click on bracketed areas to see and hear the fragments)

