

MTO

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MTO 8.2 Examples: Benitez, Simultaneous Contrast and Additive Designs

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

<http://www.mtosmt.org/issues/mto.02.8.2/mto.02.8.2.benitez.php>

Figure 1. Robert Delaunay, *Hommage à Blériot* (1914)



Figure 2. Color Wheel

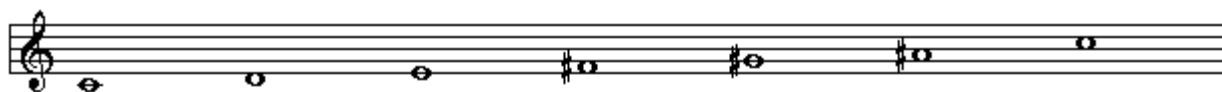


Figure 3. Robert Delaunay, *Formes circulaires. Soleil n° 1* (1912–13)



Example 1. The Modes of Limited Transposition

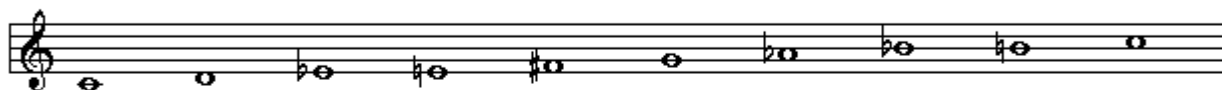
Mode 1: Whole-Tone Collection; 6-35 [0,2,4,6,8,10]; 2 transpositions



Mode 2: Octatonic Collection; 8-28 [0,1,3,4,6,7,9,10]; 3 transpositions



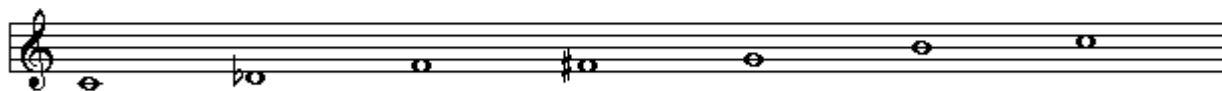
Mode 3: 9-12 [0,1,2,4,5,6,8,9,10]; 4 transpositions



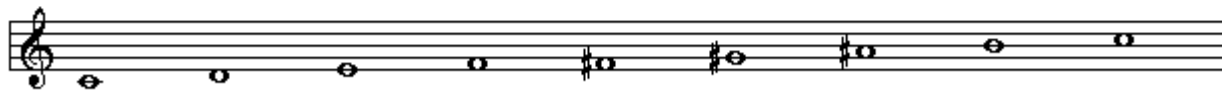
Mode 4: 8-9 [0,1,2,3,6,7,8,9]; 6 transpositions



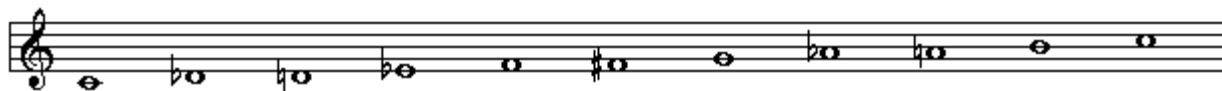
Mode 5: 6-7 [0,1,2,6,7,8]; 6 transpositions



Mode 6: 8-25 [0,1,2,4,6,7,8,10]; 6 transpositions



Mode 7: 10-6 [0,1,2,3,4,6,7,8,9,10]; 6 transpositions



Example 2. Derivation of the Chords of Transposed Inversions on the Same Bass Note from a V9 Chord (see *Traité de rythme*, 3:86) Reproduced with the kind authorization of Editions Alphonse Leduc, proprietary editor worldwide, Paris, France

Appoggiaturas

Modified Dominant-Ninth Chord (E# replaced by F#) A. Root position B. First Inversion C. Second Inversion D. Third Inversion

Example 3. Chords of Transposed Inversions on the Same Bass Note

(All 7-20 [0,1,2,5,6,7,9])

A. Root Position B. First Inversion C. Second Inversion D. Third Inversion

Example 4. Derivation of the Chords of Contracted Resonance from a V9 Chord (see *Traité de rythme*, 3:87) Reproduced with the kind authorization of Editions Alphonse Leduc, proprietary editor worldwide, Paris, France

Quintuple Appoggiaturas

Modified Dominant-Ninth Chord (G replaced by Ab) Inferior Resonance

Example 5. Chords of Contracted Resonance

7-Z36
[0,1,2,3,5,6,8]

7-Z12
[0,1,2,3,4,7,9]

Example 6. Turning Chords

8-5
[0,1,2,3,4,6,7,8]

8-4
[0,1,2,3,4,5,7,8]

8-14
[0,1,2,4,5,6,7,9]

Example for Note 22. Color Associations of Turning Chords, *Chronochromie*, Strophe I

“jaune pâle, mauve, —
rose cuivré, gris perle”

“chrysoprase, vert bleuté mat—
sardonyx noir, blanc, et brun
rougeâtre—avec du jaune pâle”

“cristal de roche—‘oeil de
chat’ vert foncé chatoyant”

Example 7. Contrasting Additive Design (Pitch/Timbral Opposition): Analytical Reduction, Pitch-Class Complementation, Brother Masseo's Ornithology Lesson, *Le Prêche aux oiseaux*, R27:1–7

(Brother Masseo)

(Orchestral Accompaniment)

strings

strings, bsn. 1-3

Mode 2:1 <0,1,3,4,6,7,9,10> ----- CTI₁/A

Turning Chords -----

4-229 ----- 7-20 ----- 8-5 8-4 8-14 8-4

flutes 1-2, 8^{va} -----, 8^{va} -----, 8^{va} -----, 8^{va} -----,

picc. 1-2, crotales

4-14 4-16 4-16 4-16

strings, bsn. 1-3, hns. 1-3, tub. bells, E.H., Ondes Martenot 2

8-14 8-16 8-16 8-16

(Turning Chord)

Example 8. Chord of Total Chromaticism, Analytical Reduction, *Le Prêche aux oiseaux*, R54:5

The image shows an analytical reduction of a chord of total chromaticism from the piece *Le Prêche aux oiseaux*, R54:5. It consists of two systems of musical notation on a grand staff (treble and bass clefs).

The first system features two sonorities:

- The top sonority is labeled $(8-16)$ and $(E\flat$ minor), with notes G \flat , A \flat , B \flat , C, D, E, F, G.
- The bottom sonority is labeled $(E$ major), with notes E, G, B, C, D, F, G.

The instrumentation for this system is "strings, bsn. 1-3, hns. 1-3, ob. 1".

The second system features two sonorities:

- The top sonority is labeled $(4-16)$ and (AMm^7) , with notes A, B, C, D, E, F, G, A.
- The bottom sonority is labeled $(8-16)$ and (AMm^7) , with notes A, B, C, D, E, F, G, A.

The instrumentation for this system is "fl. 1-2, picc. 1-2, glock., vibra.".

(The top sonority is sounded immediately after the bottom sonority.)

Example 9. Contrasting Additive Design (Pitch/Timbral Opposition): Two Active Parts, Avian
 Commentary on “Perfect Joy,” *La Croix*, R66:6–9 Reproduced with the kind authorization of Editions
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Woodwinds

f mf

(*C T₁=chord of transposed inversions, first inversion) *CT₁/D# CT₁/C# CT₁/B \flat CT₁/B \flat

Mode 3:3 Mode 3:3
 (6-15 6-14) (6-15 6-14)

Xylos 8^{m}

Xylo.

f

Xylo.

f

Marim.

f

3-4 3-1 3-4 3-1

pp f ff ff

CT₁/D CT₁/D CT₁/C#

Mode 3:3
(6-15 6-14)

8^{m}

3-4 3-1 3-4 3-1 3-4 3-5 3-5 3-9

Figure 4. Spatial Arrangement of the Orchestra at the Palais Garnier (1983) (Distances are approximate)

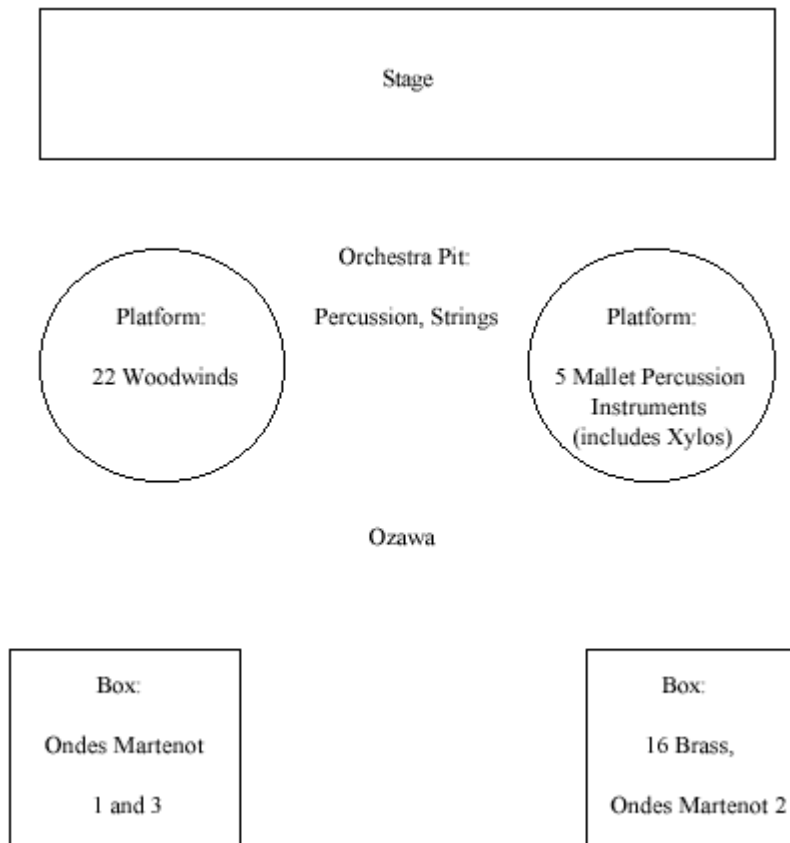
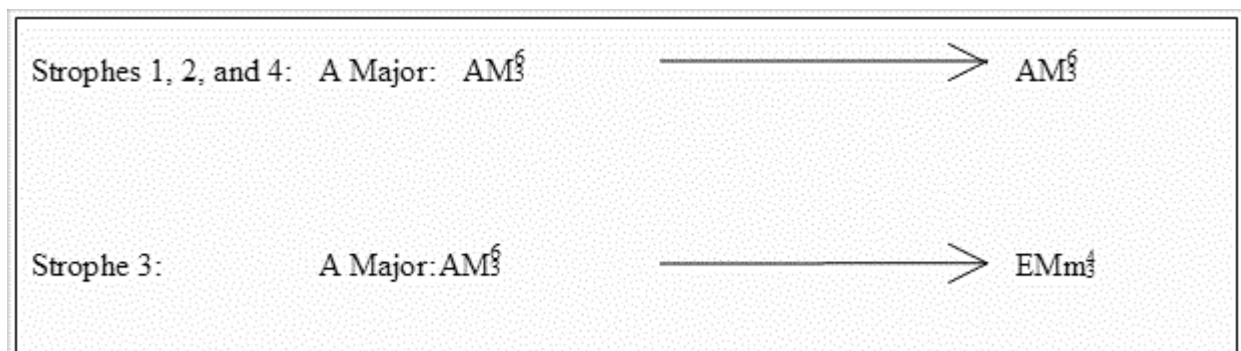


Figure 5. Analogous Additive Design Foreground and Background Pitch Designs linked by Analogous-Color Relationships Background Design, Angel’s Discourse, *Le baiser au lépreux*, R62:1–12 (Strophe 1), R65:1–12 (Strophe 2), R69:2–18 (Strophe 3), R72:1–24 (Strophe 4)



Example 10. Analogous Additive Design: Foreground Design, Angel's Discourse, Analytical Reduction of Strophe 1, *Le baiser au lépreux*, R62:1–12

A Major: AM⁶ ----- AM⁶ -----

Blue: Truth of Love -----

Mode 3:2 <1,3,4,5,7,8,9,11,0> (gray and mauve)

Mode 3:3 <2,4,5,6,8,9,10,0,1> (blue and green)

3-11 6-15 6-15 6-21 6-15 6-21 5-35

8-24 8-24(T₅)

Example 11. Analogous Additive Design: Foreground Design, Angel's Discourse, Analytical Reduction of Strophe 3, *Le baiser au lépreux*, R69:2–18

A B

Mode 2:1 <0,1,3,4,6,7,9,10>

Chords of Contracted Resonance Chords of Transposed Root Position

4-Z29 -----

A Major: ----- (*) ----- (*) -----

Inversions on the Same Bass Note Mode 2:1

First Inversion -----

4-Z29 4-26 4-Z29

7-31

(A) ----- (*) ----- (*V₅) -----

Example 12. Compound Additive Design (Several Simultaneous Textural Layers), Angel's Celestial Music, *L'Ange musicien*, R89:1-4 Reproduced with the kind authorization of Editions Alphonse Leduc, proprietary editor worldwide, Paris, France

Très vif (♩ = 126)

4 Picc. 1 (Merle noir) Mode 3:1 CM 5-11 5-26 4-19 5-11 5-34 5-26 5-27 5-10 5-21

5 Fl. en Sol (Rouge gorge) 4-26 4-22 4-27 4-23 4-22 4-27 4-23

6 Xylo (Rossignol) Xyloin. Marim. 3-2 3-3 3-2 3-3 3-3

7 Cees Mode 1:1 → CM

8 Ondes 1, 2, 3 Ruban (position égal) Mode 3:1 → CM

1 1^{re} VL. (div. en 3) tous marisé Mode 2:1 → CM

2 2^e VL. (div. en 2) tous marisé Mode 2:1 → CM

3 Altoes (div. en 3) tous marisé Mode 2:1 (div. en 2) → CM

3 Vlc. (div. en 2) tous marisé Mode 2:1 (div. en 2) → CM

8 C. B. toutes (arco) Mode 1:2 → CM

8 H. 1^{re} Trpl. Mode 1:2 → CM

Example 13. Compound Additive Design (Several Simultaneous Textural Layers), Analytical Reduction, Harmonic Content of the Blackbird's Song, *L'Ange musicien*, R89:2–4

Mode 3:1 <0,2,3,4,6,7,8,10,11> *
(*F6 borrowed)

Figure 6. Compound Additive Design Associated with the Angel's Music, *L'Ange musicien*, R89:1–16

