MTO 16.1 Examples: Martin, Harmonic Progression in *Twine*

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

http://www.mtosmt.org/issues/mto.10.16.1/mto.10.16.1.martin.php
Example 1. *Twine*, measures 1–11
Example 2. The main progression of eight PSCs

<table>
<thead>
<tr>
<th>PSC</th>
<th>low pitch</th>
<th>high pitch</th>
<th>axis</th>
<th>set class</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSC 1</td>
<td>D2</td>
<td>F6</td>
<td>C4/G4</td>
<td>(012346)</td>
</tr>
<tr>
<td>PSC 2</td>
<td>E1</td>
<td>D#5</td>
<td>B2/G#3</td>
<td>(012367)</td>
</tr>
<tr>
<td>PSC 3</td>
<td>C4</td>
<td>G6</td>
<td>D#5/E5</td>
<td>(013469)</td>
</tr>
<tr>
<td>PSC 4</td>
<td>A4</td>
<td>C8</td>
<td>E6/F6</td>
<td>(012578)</td>
</tr>
<tr>
<td>PSC 5</td>
<td>Eb2</td>
<td>Bb5</td>
<td>G#3/F4</td>
<td>(012578)</td>
</tr>
<tr>
<td>PSC 6</td>
<td>Eb2</td>
<td>D5</td>
<td>G#3/A3</td>
<td>(023468)</td>
</tr>
<tr>
<td>PSC 7</td>
<td>A0</td>
<td>Bb4</td>
<td>G2/C3</td>
<td>(012468)</td>
</tr>
<tr>
<td>PSC 8</td>
<td>C#2</td>
<td>E6</td>
<td>C4/F4</td>
<td>(012346)</td>
</tr>
</tbody>
</table>

Figure 1. Pitch properties of Twine’s eight PSCs
Figure 2. The overall harmonic framework of *Twine*

\[ n \] = PSC \( n \)

\[ \] = material inserted between the PSCs

\[ \] = closing section containing no PSC

**Part 1 (mm. 1-85)**

- Direct progression (mm. 1-11)
- Indirect progression (mm. 12-80)
- Closing section (mm. 80-85)

**Part 2 (mm. 86-157)**

- Indirect progression (mm. 86-121)
- Direct progression (mm. 132-150)
- Closing section (mm. 151-157)

**Codetta (mm. 158-160)**

\[ \]
Figure 3. An illustration of Lindberg’s expansion of chaconne using a sequence of chord properties

Figure 4. An illustration of Lindberg’s expansion of chaconne using the interpolation technique

Figure 5. An illustration of Lindberg’s expansion of chaconne using the “freeze” technique
Figure 6. The harmonic structure of *Twine*, measures 1–80, showing the direct progression of eight PSCs and the eight secondary progressions that constitute the indirect progression.

PSCₙ = Primary structural chord \( n \)

\( Pₙ \) = Position \( n \) containing a new 12-tone chord exhibiting properties of PSC \( n \)

Global:

mm. 1–11 (main progression of PSCs) \hspace{1cm} \text{mm. 12–20}

Local: \hspace{1cm} \text{PSC1 PSC2 PSC3 PSC4 PSC5 PSC6 PSC7 PSC8 | PSC1 P2 P3 P4 P5 P6 P7 P8}

mm. 21–27

Global: \hspace{1cm} \text{PSC2}

Local: \hspace{1cm} \text{P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8}

mm. 28–39

Global: \hspace{1cm} \text{PSC3}

Local: \hspace{1cm} \text{P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8}

mm. 40–50

Global: \hspace{1cm} \text{PSC4}

Local: \hspace{1cm} \text{P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8}

mm. 50–59

Global: \hspace{1cm} \text{PSC5}

Local: \hspace{1cm} \text{P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8}

mm. 60–66

Global: \hspace{1cm} \text{PSC6}

Local: \hspace{1cm} \text{P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8}

mm. 69–74

Global: \hspace{1cm} \text{PSC7}

Local: \hspace{1cm} \text{P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8 | P1 P2 P3 P4 P5 P6 P7 P8}

mm. 75–80

Global: \hspace{1cm} \text{PSC8}

Local: \hspace{1cm} \text{P1 P2 P3 P4 P5 P6 P7 PSC8}

Figure 7. Register contour of the main progression of PSCs.
Figure 8. Register contour illustrating the average high and low pitches residing in each position of part 1’s indirect progression.
Example 3. Twine, measures 60–68
Example 4. An illustration showing the common tones shared between each secondary chord and its corresponding PSC in measures 50–59 (indicated by numbers above the note heads)

Position 1, mm. 50-51

Position 2, mm. 51-d.b. 52

Position 3, mm. 52-53 b.1

Position 4, mm. 53 b. 2-54

Position 5, mm. 54-55: PSC 5

Position 6, mm. 56-57

Position 7, mm. 57-58

Position 8, mm. 59
Figure 9. A register contour derived by averaging the high and low boundary pitches from all chords in each of the eight positions in part 1’s indirect progression, measures 12–80.
Example 5. An illustration showing the common tones shared between each secondary chord and its corresponding PSC (indicated by boxed note head and the numbers above the note heads) and all of the secondary chords and PSC 6 (indicated by the numbers below the note heads) in measures 60–68.

Position 1, m. 60

Position 2, mm. 61-62

Position 3, mm. 62-63

Position 4, m. 64

Position 5, m. 65

Position 6, m. 66: PSC 6

Position 7, m. 67

Position 8, m. 68

Interpolation (eight chords)
Example 7. An illustration showing the interpolating progression in measures 86–91
Example 8. *Twine*, measures 104–111
Example 9. An illustration showing Lindberg’s use of the freeze technique in measures 104–110.
Figure 10. The formal structure of part 2, measures 86–160

\[ n \] = primary structural chord \( n \)

\( P_n \) = position \( n \)

\begin{verbatim}
mm. 86-91
  1 Interpolation between PSC 1 and PSC 2

mm. 92-104
  2 P1  2 P3 P4 P5 P6 P7 P8

Predominantly Indirect Progression

mm. 104-110
  3 P1 P2  3 P4 P5 P6 P7 P8

mm. 111-113
  3 4

mm. 114-122
  5 P1 P2 P3 P4 5 P6 P7

mm. 114-122
  freeze

mm. 122-127
  6 Interpolation between PSC 6 and PSC 7

mm. 128-131
  7 P1 P2 P3 P4 P5 P6 P7

Predominantly Direct Progression

mm. 132-150
  2 3 4 interpolation 5 6 7 8 interpolation 8

mm. 151-153
  P1 P2 P3 P4 P5 P6 P7 P8

Closing Section

mm. 153-155
  P1 P2 P3 P4 P5 P6 P7 P8

mm. 156-157
  (Two additional chords)

Codetta

mm. 158-160
  1 P2 P3 P4 P5 P6 P7 P8
\end{verbatim}