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MTO 30.3 Examples: Cole, Hands, Fingers, Strings, and Bows

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

<https://mtosmt.org/issues/mto.24.30.3/mto.24.30.3.cole.html>

Example 1. J.S. Bach, Sonata No. 3 in C Major for Solo Violin, BWV 1005, III. Largo. Bowings match those in Bach's autograph manuscript. Annotations show the structure of the overarching binary form, cadences (above the staff), sequences (SEQ), and quadruple stops (light blue shaded circles).

A

Largo

B

V: PAC

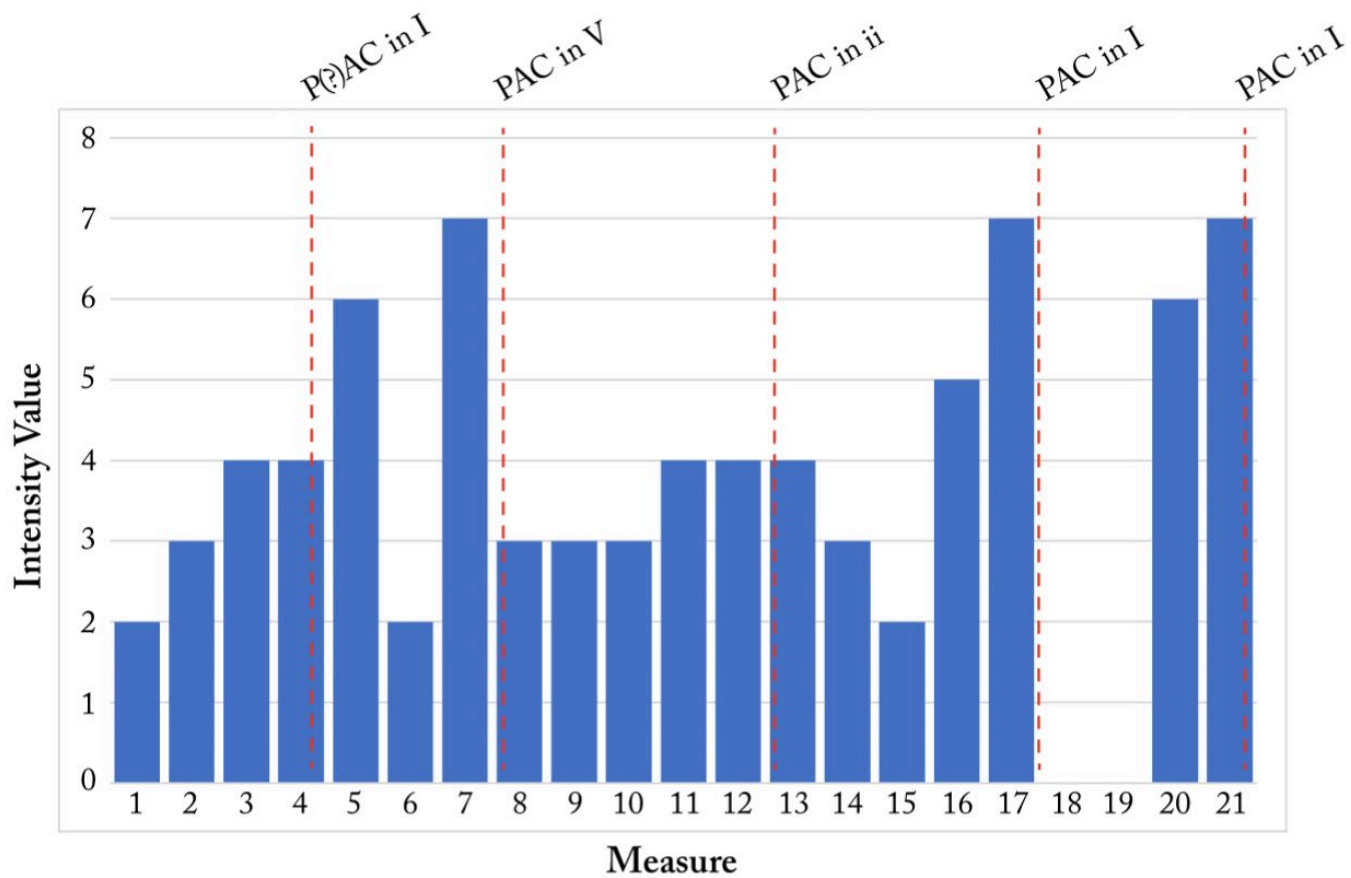
Codetta

I: PAC

Example 2. Table of intensity values for each measure. The table shows how many multiple stops of each type appear in every measure and the total intensity value for that measure. Double stops each have an intensity value of 1, triple stops a value of 2, and quadruple stops a value of 3.

	Double-stops	Triple-stops	Quadruple-stops	Intensity value
m. 1	2	0	0	2
m. 2	1	1	0	3
m. 3	2	1	0	4
m. 4	4	0	0	4
m. 5	6	0	0	6
m. 6	2	0	0	2
m. 7	3	2	0	7
m. 8	1	1	0	3
m. 9	3	0	0	3
m. 10	3	0	0	3
m. 11	0	2	0	4
m. 12	2	1	0	4
m. 13	1	0	1	4
m. 14	1	1	0	3
m. 15	2	0	0	2
m. 16	0	1	1	5
m. 17	3	2	0	7
m. 18	0	0	0	0
m. 19	0	0	0	0
m. 20	3	0	1	6
m. 21	0	2	1	7

Example 3. Graph of intensity values for each measure. Note how intensity peaks around each significant cadence.



Example 4. Violinist's hand frame for the first quadruple-stop (m. 13, downbeat). Note the open, relaxed position of the left hand.



Example 5. Largo, mm. 10–13. Note the registral wandering and dramatic seventh chords that prefigure the first quadruple stop—and the only minor-key PAC—and the movement (m. 13, downbeat).

The image shows a musical score for two staves, measures 10 through 13. The top staff begins at measure 10 and features a sequence of eighth notes with a slur labeled 'SEQ 3' above it. The bottom staff begins at measure 12 and includes a trill marked 'tr' and a final chord in measure 13, which is circled in blue and labeled 'ii: PAC' in a box above it.

Example 6. Violinist's hand frame for the second quadruple stop (m. 16, downbeat). The player's second finger "hops" from the G string to the A string in the middle of the chord.



Example 7. Largo, mm. 14–17. The V4224 (m. 16, downbeat) opens space for the I⁶ harmony to initiate the conventional cadential motion that eventually leads to the structural PAC (not shown).

14

descending line

16

V⁴/₂

I⁵/₃

tr

tr

Example 8. Largo, mm. 6–8 and mm. 16–18. Brackets indicate the corresponding portions of the two passages; dotted circles show the slight differences between the passages. (The lack of slurs in the first passage matches Bach's autograph.)

6

V: PAC

16

I: PAC

tr

tr

Example 9. Violinist's hand frame for the third quadruple stop (m. 20, beat 3). The second, third, and fourth fingers awkwardly pull in towards one another while the first finger stretches back.



Example 10. Violinist's hand frame immediately after the diminished-seventh quadruple stop (m. 20, beat 4; B4 and A \flat 5). Even though the quadruple stop has dissipated, the player still pulls their fingers in towards one another.



Example 11. Violinist's hand frame at the final cadential six-four (m. 21, downbeat). The third and fourth fingers stretch away from one another, instantiating a different kind of physical tension than that of the diminished-seventh chord.



Example 12. Violinist's hand frame at the final V⁷ (m. 21, beat 2). Note how the third finger flattens in order to play the lower-register fifth in tune.



Example 13. Comparison of the approaches to the PAC in V (mm. 7–8) and the PAC in I (mm. 17–18). Note the contrast in cadential textures on the downbeats.

V: PAC

I: PAC

Example 14. Schenker's voice-leading graph of the Largo (1925b, 63). The graph shows the fundamental structure and first two diminutional levels; circles showing the three cadences in question added by the author. The G-minor PAC first appears in the second diminutional level.

The image displays Schenker's voice-leading graph for the Largo movement, organized into three horizontal levels of analysis:

- Level (a) Original:** Shows the original musical score with various dynamics and articulations. Three specific cadences are circled in red.
- Level (b) First Diminutional Level:** Shows the first level of reduction, where complex passages are simplified into their essential voice-leading components. The same three cadences are circled in red.
- Level (c) Fundamental Structure:** Shows the final level of reduction, representing the underlying structural framework of the music. The three cadences are circled in red.

Below the musical staves, there is a detailed voice-leading graph consisting of a series of horizontal lines representing the paths of individual voices. These lines are connected by vertical stems and horizontal beams, illustrating the step-by-step construction of the music from the fundamental structure through the two levels of diminution.

Example 16. Relative loudness, articulation, chordal break/roll, timing, and physical gesture (where applicable) at the PAC in V, PAC in ii, and PAC in I in recordings of the Largo by Hadelich (2021), Podger (1999), Hahn (date unknown), and Heifetz (1952).

Cadence	Performer	Relative Loudness	Articulation	Break/Roll	Timing	Physical Gesture
PAC in V	<i>Hadelich</i>	Medium	Slight break/lift before downbeat of m. 8	2 + 2 (interlocking at E4)	Lingers on E4	Leans down, tilting violin scroll towards ground (projects “effort”)
	<i>Podger</i>	Medium	Very small break between V (m. 7, beat 4) and downbeat m. 8	1 + 1 + 1, then back to E4	Briefly lingers on E4 before moving again	—
PAC in V	<i>Hahn</i>	Fairly loud	Very connected	2 + 2 (interlocking at E4)	Lingers on E4 for quite a while	Slight dip of scroll with upbeat anticipation, stabilizes core, then rotates left at cadence
	<i>Heifetz</i>	Diminuendo in lead-up, but suddenly louder on downbeat	Very smooth	2 + 2 (interlocking at E4)	Not much time on previous V, then lingers on E4	—
PAC in ii	<i>Hadelich</i>	Fairly loud	Slight break before downbeat m. 13	1 + 1 + 2 (not fast)	Takes time rolling through chord	Drops scroll with low notes, lifts with ascent into upper register
	<i>Podger</i>	Loud	Emphasizes G3 before rolling through	1 + 1 + 2 (fairly quick, ringing)	Stays on G3 for an extra moment, but moves through the cadence overall	—
PAC in ii	<i>Hahn</i>	Quite loud	Very connected	2 + 2 (doesn't linger on lower notes)	Downbeat fairly lengthy, but more from subsequent notes	Slight dip in anticipation, then rises with cadence
	<i>Heifetz</i>	Big! (Dramatic)	Connected, but with accents on each part of chord	2 + 2 (very dramatically so)	Does not take much time, only a little bit on downbeat	—
PAC in I	<i>Hadelich</i>	Soft	Breaks before downbeat of m. 18, then tenuto on F4 (sounds more like beginning than end)	—	Slows down on V, then picks tempo back up after downbeat	Slight dip in anticipation, then rotates right with resumption of melody
	<i>Podger</i>	Quite soft	Very smooth, almost no audible break between anticipation and downbeat	—	Holds V in m. 17, short anticipation, then lingers on downbeat	—
PAC in I	<i>Hahn</i>	Medium	Quite connected	—	The longest anticipation yet, then lingers on downbeat	Very little—slight dip of scroll before anticipation
	<i>Heifetz</i>	Significant diminuendo with lead-in, then downbeat slightly reinvigorated (though still soft)	Strong tenuto (almost accent) on downbeat of m. 18	—	Last two beats in m. 17 quite slow, slightly lingers on F4 before picking up tempo again	—

Example 17. Three different musical gestures that share the same bowing pattern: a down bow that lasts three times as long as the subsequent up bow



Example 18. Autograph manuscript of the Largo



Example 19. Bowing-based reduction of the Largo. I have included bowing markings so the reader can imagine what it might feel like to play the passage.

The image displays a musical score for a bowing-based reduction of a Largo passage, consisting of four staves of music. The notation includes various bowing markings and brackets to indicate phrasing and articulation.

- Staff 1 (Measures 7-12):** Features a series of eighth notes. Bowing markings include V: PAC (measures 7-8), V: PAC (measures 9-10), V: PAC (measures 11-12), and I: PAC (measures 13-14).
- Staff 2 (Measures 13-18):** Continues the eighth-note pattern. Bowing markings include I: PAC (measures 13-14), V: PAC (measures 15-16), V: PAC (measures 17-18), and I: PAC (measures 19-20).
- Staff 3 (Measures 19-24):** Shows a more complex rhythmic pattern with sixteenth notes. Bowing markings include V: PAC (measures 19-20), V: IAC(2) (measures 21-22), I: PAC (measures 23-24), and I: PAC (measures 25-26).
- Staff 4 (Measures 25-30):** Continues the sixteenth-note pattern. Bowing markings include I: PAC (measures 25-26), I: PAC (measures 27-28), I: PAC (measures 29-30), and I: PAC (measures 31-32).

Example 20. Largo, mm. 1–4, bowing reduction and original score. Across the phrase, the bowing-based motive progressively shortens.

The image displays two staves of music for Example 20. The top staff is a bowing reduction, showing a sequence of notes with 'v' (down-bow) and 'V' (up-bow) markings above them. Red brackets above the staff label the bowing groups as 'full-length version', 'full-length version', 'medium-length version', 'short version', and 'short version'. The bottom staff is the original score, showing the same notes with a bass line below. Red brackets above the staff label the bowing groups as 'full-length version', 'full-length version', 'medium-length version', 'short version', and 'short version'. The original score includes trills ('tr') and rests in the bass line.

Example 21. Two shaping possibilities for mm. 10–11. The solid line shows a two-beat grouping that shapes around the end-oriented cadential gesture; the dashed line shows a two-beat grouping that shapes around the beginning-oriented bowing motive.

The image shows musical notation for Example 21, starting at measure 10. The notation includes a treble clef, a key signature of one flat, and a common time signature. A box labeled 'ii: IAC(?)' is placed above the first measure. A solid horizontal line with vertical tick marks spans two beats, starting from the beginning of the first measure and ending at the end of the second measure. A dashed horizontal line with vertical tick marks spans two beats, starting from the beginning of the second measure and ending at the end of the third measure. The music consists of a melodic line with eighth and sixteenth notes and a bass line with rests and eighth notes.