

Chapter Three

Alois Hába's *Suite für vier Posaunen* *im Vierteltonsystem*

One could hardly write a dissertation about quarter-tone music without examining the music of Alois Hába. However, even though many scholars regard him as an important pioneer in microtonal composition, surprisingly few have written detailed studies of his writings or music. Two recent dissertations, however, prove the exception. Suzette Mary Battan provides a translation and critique of Hába's major treatise, *Neue Harmonielehre des diatonischen, chromatischen, Viertel-, Drittel-, Sechstel-, und Zwölftel-Tonsystems*.¹ In a brief final chapter, Battan examines the compositional manifestation of Hába's theoretical ideas in four of his early quarter-tone works. Christina Yik Man Tam's dissertation builds upon Battan's groundwork, examining a wider range of Hába's compositional output in greater and informed detail.² In this chapter, I observe that several techniques identified by Tam appear

¹ Suzette Mary Battan, *Alois Hába's "Neue Harmonielehre des diatonischen, chromatischen, Viertel-, Drittel-, Sechstel-, und Zwölftel-Tonsystems"* (Ph.D diss., University of Rochester, 1980).

² Christina Yik Man Tam, *Between the Tones: The Theory and Microtonal Works of Alois Hába* (Ph.D diss., University at Buffalo, 2005).

in Hába's *Suite für vier Posaunen im Vierteltonsystem*, op. 72. I supplement these observations by examining how Hába uses specific triadic configurations to create a sense of prolongations of tonic harmony.

Suite für vier Posaunen is a set of five miniatures scored for trombone quartet in which Hába employs in a variety of ways conventional consonant triads. In most cases, the triads appear as surface harmonies, but there are also passages that mimic large-scale prolongations: the second movement suggests techniques of prolongation by sustaining an A \flat -major triad for a duration of four measures, and the first movement sustains a background C-minor triad for its entire ten measures. Tam writes that the *Suite für vier Posaunen* is not characteristic of Hába's style because of the abundance of consonant triads.³ However, the trombone quartets do employ a number of techniques associated with Hába, such as frequent use of cycles of int 2.5, contrapuntal configurations based on contrary motion, and what Hába terms "tone centrality."⁴ It seems likely, in fact, that Hába's use of triads may have had more to do with the practical realities of writing for brass than with a stylistic deviation.

³ Tam, 7.

⁴ Tone centrality is discussed in Battan, 52-53 and Tam, 191-200.

1st position



Example 3.1: The degree to which a trombonist may flatten F_3

Because the trombone's slide allows the trombonist to adjust the length of the instrument's tubing, from the shortest possible length (called "first position") to the longest ("seventh position"), it might at first appear to be an ideal instrument for performing microtones. That is, one might expect that this degree of control would facilitate the production of microtones.

However, microtones present challenges for trombonists, partly because of the acoustic properties of brass instruments and partly because of how brass players are trained to produce accurate pitches. For example, on a standard Bb tenor trombone, the pitch F_3 is normally played with the slide in first position. By relaxing the embouchure and carefully controlling the airstream, the trombonist can flatten this first-position F_3 to produce any pitch from F_3 down to B_2 (see Example 3.1).⁵ All brass players use such embouchure control to correct intonation, and after years of practice, these

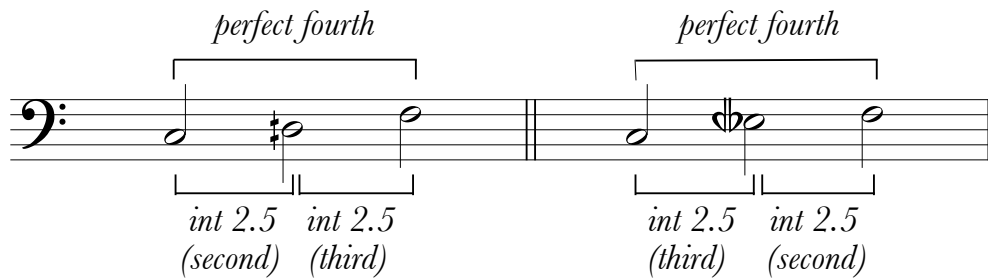
⁵ On the trombone, one can adjust a pitch downward by as much as a tritone, although the further one adjusts away from the "correct" pitch, the less resonant the tone becomes. It is difficult to adjust a pitch upward because the required increase in air speed causes the trombone to resonate at the next higher partial. Attempts to force the F_3 to resonate at anything higher than $F\sharp_3$ normally cause the trombone to produce the pitch $B\flat_3$.

adjustments become second nature. For the classically-trained brass player in the Western tradition, the natural tendency is to “correct” the intonation of microtonal intervals so that they match more familiar, conventional ones.

Hába’s Quarter-Tone Compositional Techniques

Hába’s *Suite für vier Posaunen* contains a number of compositional techniques and stylistic features that are found elsewhere in Hába’s music. A prominent interval throughout the *Suite* is int 2.5, an interval that, according to Tam, appears frequently throughout Hába’s quarter-tone works, often as a component of interval cycles that can contain from 3 to 24 successive iterations.⁶ In Chapter 1, I show that int 2.5 can function as a passing tone that divides the perfect fourth into two equal parts (see Example 1.21). Example 3.2 shows two enharmonically equivalent int 2.5 divisions of the perfect fourth C–F. In such a division, int 2.5 is potentially an ambiguous interval; one half of the divided perfect fourth will always be spelled as a second, while the other half will be spelled as a third.

⁶ Tam, 56-58.



Example 3.2: Splitting the perfect fourth



Example 3.3: Hába's illustration of contrary motion between fields



Example 3.4: Hába's illustration of tone centrality

Hába characterizes the quarter-tone gamut as separated into two fields, one half comprising the twelve conventional pitches, and the other half, the twelve quarter-tone pitches. In the *Suite*, passages occur in which chords composed purely of conventional pitches alternate with chords composed purely of quarter-tone pitches. Example 3.3 shows a representative passage from *Neue Harmonielehre* in which passages of conventional pitches alternate with passages of quarter-tone pitches. The brackets under the staff indicate the change of field, from conventional to quarter-tone. For this kind of alternation, Hába recommends contrary motion in the outer voices to smooth the transition from one field to the other.⁷ Although, as I show, in his own music he does not always follow this rule strictly.

Hába's concept of "tone centrality" is reflected in his use of oblique contrapuntal motion. In tone centrality, a single tone governs the harmony of an extended passage, without implying the harmonic functions or hierarchal relationships that characterize tonality. Example 3.4 reproduces Hába's illustration of tone centrality. Here, the central tone, C, forms a bass pedal, above which Hába places a succession of thirteen chords. Unlike conventional tonal passages, the interval structures of chords in passages

⁷ Tam, 29-30. Example 3.2 reproduces Hába's Figure 32, Chapter II, from his discussion of quarter tones in *Neue Harmonielehre*, 151.

exhibiting tone centrality can be arbitrary, since they are not composed from specific scale steps. Additionally, the pedal representing the central tone can appear in the bass, in the soprano, or as part of a melodic motive.⁸ While tone centrality does not itself suggest tonality, four of the five movements of the *Suite* do begin and end with configurations that suggest that one or two pitches serve a role similar to a traditional tonic; I call these pitches “tonic analogues.” Tonic analogues create a sense of repose, particularly when they appear in the bass voice in the final chord of a movement.

Quarter-Tone Techniques in *Suite für vier Posaunen*

The image shows a musical score for four trombones (Trombone 1, 2, 3, and 4) in bass clef. The score is for measures 1 and 2 of the first movement of the *Suite für vier Posaunen*. The notation includes various accidentals (flats, naturals, sharps) and note values (quarter notes, half notes) that indicate quarter-tone techniques. The notes are written on a five-line staff for each instrument.

Example 3.5: *Suite für vier Posaunen*, Mvt. I, *Maestoso*, mm. 1-2

⁸ Battan, 53. Example 3.4 reproduces Hába's Figure 36, Chapter I, *Neue Harmonielehre*, 43.

chord: (E♭) D♭ (type?) C♯ minor C major

Example 3.6: Mvt. I, *Maestoso*, mm. 1-2, harmony

triad: major neutral minor “sub-minor”
F♯ = E♭

Example 3.7: D♭ triads

I now examine each of the five movements of Hába’s *Suite für vier Posaunen*, paying particular attention to tone centrality and tonic analogues. Example 3.5 shows the opening two measures of the first movement with each trombone part appearing on its own staff. Each part, then, represents an individual voice, which I refer to as the soprano, alto, tenor, and bass.⁹ The harmony in these measures changes every two beats. The four resultant

⁹ The instrumentation of the trombone quartet is more flexible than for other standard chamber ensembles, such as the string quartet. All four trombone parts can usually be performed within the range of a standard tenor trombone, but it is common for the 4th trombone part to be performed on a bass trombone. It is also possible to substitute an alto trombone for the 1st trombone, and any of the parts may be replaced with baritone or euphonium. When analysing music for trombone quartet, it can be helpful to think of the ensemble as an SATB choir.

harmonies, shown in Example 3.6, are as follows: a unison $E\flat$, a trichord of an unknown type with $D\flat$ in the bass, a conventional $C\sharp$ -minor triad, and a conventional C -major triad. We could consider the unknown trichord to be a $D\flat$ “sub-minor” triad if we respell the $E\flat$ enharmonically as $F\flat$, as in Example 3.7. Just as the third of the neutral triad is one quarter-tone lower than the third of the major triad, the third of the sub-minor triad is one quarter-tone lower than the third of the minor triad.

The image shows a musical score for a piano reduction. The top staff is a grand staff with treble and bass clefs. The first measure is labeled 'm. 1' and the second measure is labeled 'motive 2'. The piano part is shown with a soprano, tenor, and bass voice leading. The intervals between notes are marked as 0.5, indicating quarter-tones. The piano part is labeled 'motive' and 'motive 2'.

Example 3.8: Mvt. I, *Maestoso*, mm. 1-2, motivic structure

The voice-leading of the reduction in Example 3.8 reveals that across the first two measures, the soprano, tenor, and bass share a common motive composed of two successive int 0.5s, first articulated by the soprano's

ascending line $E\flat-E\sharp-E\sharp$.¹⁰ The tenor and bass present the inversion of this motive with two descending lines that proceed in parallel perfect fifths, $D\flat-C\sharp-C\sharp$ and $A\flat-G\sharp-G\sharp$. (The alto line simply doubles the soprano in m. 1, and the bass in m. 2.) The motive alternates conventional and quarter-tone pitches. By pairing the motive with its inversion, Hába follows his own contrapuntal advice, creating contrary motion in the outer voices as the pitches change field from conventional to quarter-tone and back again.¹¹ (The parallel perfect fifths between bass and tenor show that Hába is not interested in following strictly the rules of traditional counterpoint.)

The musical score consists of two systems of piano music. The first system contains measures 1 through 4, and the second system contains measures 5 through 8. Brackets below the staves group measures into four spans: 'first span' (measures 1-2), 'second span' (measures 3-4), 'third span' (measures 5-6), and 'fourth span' (measures 7-8). The notation includes treble and bass clefs, various accidentals (sharps, flats, naturals), and note values (half notes, quarter notes).

Example 3.9: Mvt. I, *Maestoso*, outer-voice counterpoint showing motives

¹⁰ The initial $E\flat$ of this motive is implied by the register transfer in the soprano in m. 1.

¹¹ See Example 3.3 above.

The contrary-motion pattern established in the first two measures generates the outer-voice framework for the full ten measures of the first movement, shown in Example 3.9. The outer voices unfold four spans of contrary motion, marked with thick black lines below the staves. The bass presents four descending statements of the motive, against five ascending statements of the motive in the soprano.

Example 3.10: Sketch of complete first movement

In addition to an outer-voice framework governed by spans of contrary motion, the first movement unfolds a background structure that, while not strictly tonal, can be sketched to resemble a tonal prolongation, as shown in Example 3.10. The first two measures state a unit that begins on the pitch E \flat , which is then repeated sequentially up a tone to F \sharp . The third component of this sequential unit begins up yet another tone, to G \sharp , and is modified to create a stepwise descent from G down to C. The overall pattern resembles

an ascent to a head tone $\hat{5}$ preceding a descent to $\hat{1}$ in the key of C, outlining a C-minor triad. Supporting this interpretation is the soprano $E\sharp$ –F appearing over the bass C–F, apparently tonicizing **IV**, and $F\sharp$ –G appearing over D–G, apparently tonicizing **V**. In Example 3.10, the Roman numerals on the sketch are not intended literally, but merely help to identify a structure that resembles a large-scale functional progression. In a similar tact, the C-major sonority that ends the movement mimics a *Tièrce de Picardie* replacing the expected C-minor. The triad outlined in Example 3.10 strongly suggests that C serves as a tonic analogue in the first movement.

a) $B\flat_2$ $E\flat_3$ $A\flat_4$ $G\flat_5$ $F\sharp_4$ $E\flat_3$ $D\sharp_2$ $C\sharp_1$

b) $B\flat_2$ $E\flat_3$ $A\flat_4$ $G\flat_5$ $F\sharp_4$ $E\flat_3$ $D\sharp_2$ $C\sharp_1$

c) $B\flat_2$ $E\flat_3$ $A\flat_4$ $G\flat_5$ $F\sharp_4$ $E\flat_3$ $D\sharp_2$ $C\sharp_1$

$A\sharp \equiv B\flat\flat?$

Example 3.11: Mvt. II, *Andante cantabile*, mm. 1-4

The second movement begins and ends with prolongations of an $A\flat$ -major triad, making $A\flat$ the tonic analogue for this movement. Example 3.11a shows the first four measures, reduced to a single bass staff. Example 3.11b shows how the $A\flat$ -major triad is prolonged by non-chord tones, although their enharmonic spellings do not always reflect their functions. The non-chord tones $B\flat$ and $D\flat$ are easily interpreted as passing-tones, but the upper-neighbour notes $C\sharp$ and $E\flat$ are more easily understood as upper-neighbours if they were respelled as $D\flat$ and $F\flat$, as shown in Example 3.11c.¹² In the final pair of upper neighbours, the $C\sharp$ can be respelled as $D\flat$, but because my notation does not accommodate a five-quarters-flat sign, there is no enharmonic equivalent that would make explicit the function of $A\flat$ as an upper neighbour to $A\flat$. (“ $B\flat\flat$ ” may be the best way to indicate a B five-quarters flat.)

¹² Although Hába’s notation allows for three-quarter flats (see Table 1.1), he does not use any three-quarter flats in the *Suite für vier Posaunen*.

a)

b)

c)

int 2.5

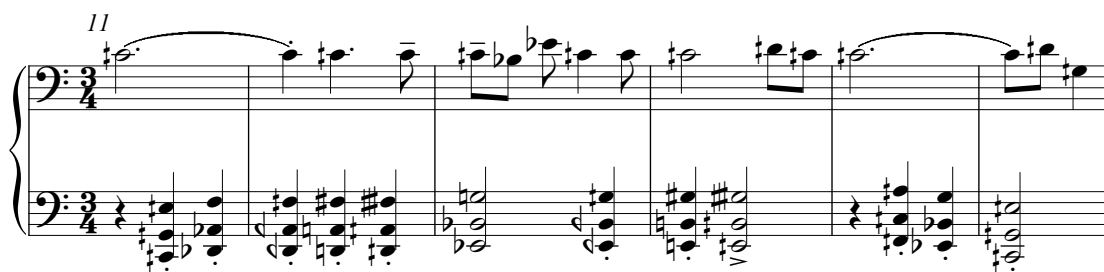
int 2.5

Example 3.12: Mvt. II, *Andante cantabile*, mm. 23-25

The final three measures also prolong an A \flat -major triad (Example 3.12a), although the role of the quarter-tone pitch F \sharp is ambiguous. F \sharp could function as a non-chord tone (either as an upper-neighbour to E \flat , or as a passing-tone between E \flat and A \flat), or as a chord-tone in its own right, forming part of a new chord-type (shown in Example 3.12c as a major triad with an added quarter-tone sixth).¹³ In this chord, the F \sharp divides the perfect fourth E \flat -A \flat

¹³ The major triad with an added quarter-tone sixth has a jazz-like character, sounding somewhere between a major triad with an added major-sixth and a major-minor seventh chord with a “blue” seventh.

entire third movement, transposed into a single octave and arranged as a scale. The resultant scale is composed of two transpositionally equivalent tetrachords, plus the pitch E♯. Each tetrachord spans a perfect fourth, and contains a pitch that divides it into two equal intervals of 2.5s. The E♯, which belongs to neither tetrachord, occurs only once in the melody, in m. 19 (Example 3.17a), creating a {D♯, F♯, A♯, E♯} sonority that represents a major triad with an added major ninth. The only other place that this sonority occurs is as the final chord of the piece, a C♯-major triad with an added D♯ major ninth (Example 3.17b). The scale in Example 3.15a can be separated into two cycles of ic 5:0: {F, B♭, E♭}, which is diatonic in B♭ major, and {C♯, G♯, D♯, A♯, E♯}, which is diatonic in C♯ major (Example 3.16b). The movement begins with a melody that strongly suggests B♭ (and B♭ appears to be a logical choice for $\hat{1}$ of the scale in Example 3.16a), and ends with a C♯-major triad, reinforcing the roles of B♭ and C♯ as two central pitches.



Example 3.18: Mvt. III, *Allegretto scherzando*, mm. 11-16

15

Root: F# Eb C# Bb E F G# F G# F D#

Type: maj. #6th maj. #6th min. maj. (#6th) maj. #6th maj. #6th 9th

Example 3.19: Mvt. III, *Allegretto scherzando*, mm. 15-19

For most of the third movement, the texture consists of a melodic line accompanied by three voices moving in parallel major triads. In mm. 11-16, the harmony is controlled by tone centrality (Example 3.18). This passage, which begins and ends with C#-major triads, uses the tonic-analogue C# as its central tone. The harmony in mm. 15-26 establishes the major triad with the added quarter-tone sixth (first seen in Example 3.12 above) as a chord in its own right. (Example 3.19 shows the first five measures of this passage.) Over the twelve-measure span from m. 15 to m. 26, Hába employs only four types of chords: major triads, minor triads, major triads with an added quarter-tone sixth (labelled “#6” on Example 3.19), and a major triad with an added major ninth (labelled “9th”). This ninth chord, which appears as the final chord of the movement with the tonic-analogue C# as its root, arises in two other locations as the result of non-chord tones: in m. 19, the upper-

neighbour $E\sharp$ adds a major ninth to the $D\sharp$ -major triad (the last chord in Example 3.19); and later, in m. 22, a suspended $D\sharp$ adds a major ninth to a $C\sharp$ -major triad. The $B\flat$ added-sixth chord in m. 16 is unusual because it is the only point at which Hába disrupts the parallel major triads in the accompaniment. By substituting a first-inversion $B\flat$ -major triad for the expected root-position D -major triad, Hába allows the melodic $G\sharp$ in m. 16 to function as an added quarter-tone sixth.

C major C \sharp major C major F \sharp maj. 7 F major F \sharp maj. 7 E minor

Example 3.20: Mvt. IV, *Moderato cantabile*, mm. 1-4

The fourth movement is a four-voice chorale, although it is not written in strict chorale style. For most of the chorale, the texture is homophonic (see Example 3.20), with triads and seventh chords made up of conventional pitches alternating with triads and seventh chords made up of quarter-tone pitches. An interesting feature of this movement is the way the alternation between the conventional and quarter-tone fields creates new voice-leading

connections inserted into what would otherwise be conventional chord progressions.

Example 3.21 consists of three musical fragments labeled a), b), and c). Each fragment shows a three-chord progression on a grand staff (treble and bass clefs).
 a) Shows a progression of three triads. The first and third triads are from the same field, and their roots are separated by a perfect fifth. The second triad is from the opposite field. The voice-leading connections between the chords are shown with stems and flags.
 b) Shows a similar progression of three triads, with the first and third triads from the same field and roots separated by a perfect fifth. The second triad is from the opposite field.
 c) Shows a progression of three triads. The first and third triads are from the same field, and their roots are separated by a perfect fifth. The second triad is from the opposite field. Below the staff, the text "V₃⁴ → I" is written, indicating a specific voice-leading pattern.

Example 3.21: Quarter-tone passing chords, root motion by fifth

Example 3.21 shows three three-chord fragments from the fourth movement. In each case, the first and third chords are from the same field, and their roots are separated by perfect fifth. The second chord is from the opposite field from the chord on either side of it. The voice-leading connections between root-position fifth-related triads in strict chorale style are well-established according to common practice: the bass, expressing the root, proceeds by fifth, while two upper voices proceed by step and the third upper voice is retained as a common tone. In Example 3.21a, an F \sharp -major seventh chord is inserted into the middle of a C-major to F-major progression. The voice-leading between C-major and F-major conforms to the rules of strict chorale style. The inserted F \sharp -major-seventh chord creates

one passing line, {E \flat –E \sharp –F \sharp }, a complete upper-neighbour motion, {C \sharp –C \sharp –C \sharp }, and an incomplete upper-neighbour motion, {G \sharp –A \sharp –A \sharp }, all of which feature voice-leading of a single quarter-tone between the second and third chords. The insertion of the F \sharp -major seventh chord disrupts the strict chorale style by creating parallel fifths, {F \sharp –C \sharp } to {F \sharp –C \sharp }, between bass and alto. In Example 3.21b, voice-leading between D-minor and G-major is conventional, but the inserted chord, a root-position D \sharp -major triad, creates parallel fifths between bass and tenor, and parallel octaves between bass and soprano. The outer chords in Example 3.20c can be interpreted functionally, as V $\frac{4}{3}$ –I in the key of F \sharp major, although because these chords appear in the middle of an otherwise non-functional phrase, the dominant-tonic relationship appears to be coincidental.¹⁵ Whether or not Hába intended a functional progression, the two tendency tones in the dominant-seventh are handled correctly: the leading-tone E \sharp leads up to the local tonic F \sharp , while the seventh of the chord, B \flat , resolves down by step to A \sharp . The four conventional pitches that make up the middle sonority create

¹⁵ For further discussion of functional dominants in Hába's music, see Tam, 201-207.

passing tones in the soprano, alto, and bass, and a complete neighbour motion in the tenor; they do not form a recognizable chord-type.¹⁶

C: I I IV iii⁶ ii V V⁴₂/IV = "I"

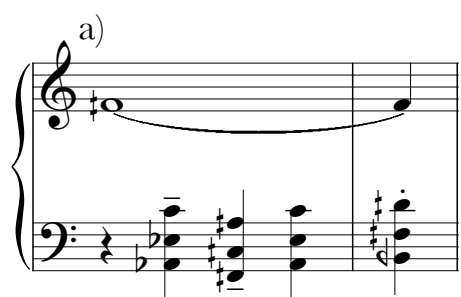
**Example 3.22: Mvt. IV, *Moderato cantabile*, mm. 1-7,
outer-voice counterpoint**

The tonic analogue in the fourth movement is C major; the movement begins and ends with C-major triads, and the harmony in the first seven measures of the movement suggests a complete functional progression in the key of C major. Example 3.22 shows the outer-voice framework of the first thirteen chords in the fourth movement; here I assume that the quarter-tone pitches serve a subordinate function to the conventional pitches. In

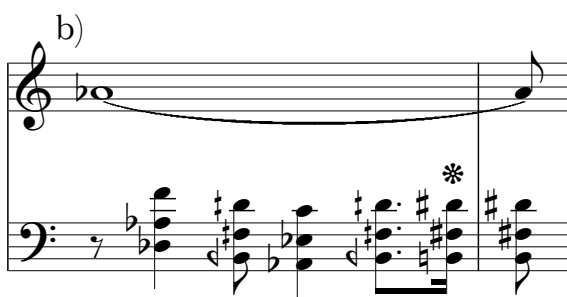
¹⁶ We could reinterpret the minor seventh G–F between bass and soprano as an augmented sixth, G–E#, resolving correctly to the octave F#s, although the resultant augmented sixth chord is not one of the familiar French, German, or Italian types. It would be interesting both to make a study of how quarter-tone augmented sixth chords (or other chromatic chords) might elaborate simple functional progressions, and to consider whether the passing lines in Example 3.20c (E#–E#–F and Bb–Bb–A#) intensify the effect of the tendency tones of the dominant seventh chord.

from cycles of int 2.5 that share five common pitches, {B \flat , C \sharp , E \flat , F \sharp , A \flat }.

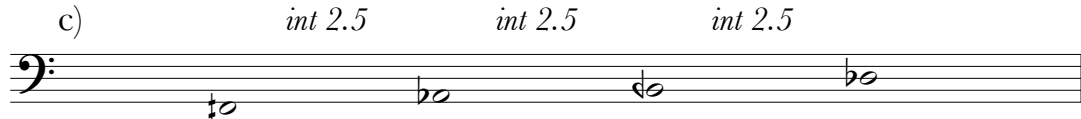
The F \flat in m. 11 does not belong to this interval cycle, but provides the deviation that marks the beginning of the A'-section.

a) 

#6th maj. #6th maj.

b) 

maj. #6th maj. #6th

c) 

int 2.5 int 2.5 int 2.5

**Example 3.25: Mvt. V, *Allegro risoluto*: a) mm. 2-3; b) mm. 4-5;
c) interval cycle derived from bass line**

a)

int 2.5

b)

<4.0 3.0 1.0 4.0> <4.0 3.0 2.0 3.0> <4.0 3.0 0.5 4.5> <4.0 3.0 1.5 3.5>

**Example 3.26: Mvt. V, *Allegro risoluto*: a) mm. 13-14;
b) alternative passing chords**

The accompaniment in the A-section, shown in Example 3.25, consists of a series of consecutive root-position major triads. Every chord in the initial A-section is either a major triad or the added quarter-tone sixth chord found in previous movements. The lone exception is the aberrant {B, D \sharp , F \sharp , A \flat } chord (a major triad plus a diminished seventh), a harmonic deviation that marks the end of the first section. The roots of the accompanimental triads all belong to the cycle of int 2.5 in Example 3.25c. The accompaniment in the A'-section likewise consists of parallel major triads and supports only major triads and added quarter-tone sixth chords, with one exception. The

exception (which curiously does not mark a section boundary) is an $A\sharp$ -major triad in m. 14 that functions as a passing chord between $B\flat$ -major and $A\flat$ -major (Example 3.26a). One possible explanation for this aberrant passing-chord is that Hába chose it because it disrupts the harmonic pattern less than any of the possible alternative passing chords. There are four passing chords that could fill in the int 2.5 between $B\flat$ and $A\flat$ (Example 3.26b). $A\sharp$ -major is the triad that Hába chooses, and combined with the soprano $F\sharp$, it forms a major triad with an added minor sixth, a chord-type not found elsewhere in the movement. $A\flat$ -major combined with $F\sharp$ forms a major triad with an added major sixth, a chord which is transpositionally equivalent to one of the chord-types found in the B-section (labelled ‘Y’ in Example 3.27). By avoiding a chord-type found only in the B-section, Hába strengthens the harmonic contrast between the A- and B-sections. The remaining possibilities, $B\flat$ -major and A -major, create chords that mix conventional and quarter-tone pitches, and the only such chord that Hába permits in this movement is the added quarter-tone sixth chord.

X Y Z

<3.0 4.0 3.0> <3.0 4.0 2.0> <3.0 3.0 1.0>

Example 3.27: Mvt. V, *Allegro risoluto*, B-section chord types

m.5 6 7 8

9 10 11

Example 3.28: Mvt. V, *Allegro risoluto*, B section, mm. 5-11, harmonic reduction

Z Z

<3.0 3.0 1.0> <3.0 3.0 1.0>

Example 3.29: Z-chords created by swapping E# and B#

The accompaniment of the B-section consists of parallel minor triads, in contrast to the major triads of the A-section. The melody of the B-section does not appear to be derived from any interval cycle or scale. Instead, Hába chooses melodic pitches that form specific chords when combined with the accompanimental minor triads. There are only four chord-types in the B-section: minor triads, and three four-note chords labelled X, Y, and Z in Example 3.27. All three of these chords contain the minor triad as a subset. Example 3.28 shows a harmonic reduction of the entire B-section that shows that each chord is either a minor triad or one of the three four-note chords, with three exceptions. The F \sharp -major triad in m. 11 is a deviation from the pattern of parallel minor triads, marking the end of the B-section. The chords marked (1) and (2) frame the passage between two deviant four-note chords that contain aberrant melodic pitches: (1) a B-minor triad supports a melodic B \sharp (an augmented octave above the root); and (2) an F \sharp -minor triad supports a melodic E \sharp (a major seventh above the root). What is curious about these chords is that if we swap these two melodic pitches, so that the E \sharp appears with the B-minor triad, and the B \sharp appears with the F \sharp -minor triad, the resultant chords, shown in Example 3.29, both become type-Z chords and thus fit the harmonic vocabulary of the B-section. It is possible

that Hába switched the positions of the B \sharp and the E \sharp to create harmonic deviations to mark the beginning and end of the B-section.

The multiple tonal references in *Suite für vier Posaunen* engage issues that suggest specific analytic strategies that may apply to Hába's other works. According to Tam, Hába was not interested in completely abandoning tonality, and one section of her dissertation briefly examines Hába's use of tonal references.¹⁷ The *Suite* is not tonal as such, but four of its five movements possess tonic analogues; in the second and third movements, the tonic analogues form the pedal notes in passages exhibiting tone centrality. The first movement suggests a large-scale prolongation of a C-minor triad, and the fourth movement's quarter-tone harmonies conceal a complete functional progression in the key of C major. Further analysis of Hába's music is needed before we understand whether or not tonal reference is a significant component of his microtonal style.

¹⁷ Tam, 201-207.