

Ben Johnston

2 STRING QUARTET NO. 7

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NOTES

The notation refers to just intonation (not equal temperament) in the following way: Uninflected notes indicate the just-tuned C major scale (with tonic, dominant and subdominant in a 4:5:6 ratio). JUN 29 1992

The inflections + and - indicate respectively to raise and lower the pitch by a syntonic comma (about 22 cents), and serve to keep just intervals in tune (e.g., an F or an A tuned to a D must be F^+ or A^+ ; an F tuned to a Bb or an $F\sharp$ tuned to a B must be F^+ or $F\sharp^+$. Similarly, a D tuned to an F or an A must be D^- ; a Bb tuned to an F or a B tuned to an $F\sharp$ must be Bb^- or B^- . The tuning 'boundary' between \natural and $+$ or between \flat and $-$ occurs between D and F. (This applies also to septimal intervals).

The inflections \sharp and \flat respectively raise and lower the pitch a just chromatic semi-tone (about 70 cents).

The inflections L and 7 respectively raise and lower the pitch a septimal chroma (about 49 cents). They are sometimes combined with sharps and flats thus: $\sharp \flat \sharp \flat$

The inflections \uparrow and \downarrow respectively raise and lower the pitch an eleven-limit chroma (about 53 cents). They are sometimes combined with other accidentals (e.g., $\sharp \sharp \flat \flat \uparrow \downarrow \sharp \downarrow \uparrow$). These inflections produce "neutral" intervals (e.g., thirds and sixths which are not clearly major or minor, analogous seconds and sevenths, half-augmented fourths and half-diminished fifths).

The inflections 13 and 1E respectively raise and lower the pitch a thirteen-limit chroma (about 27 cents). They are sometimes combined with other accidentals (e.g., $\sharp \sharp \flat \flat \uparrow \downarrow \sharp \downarrow \uparrow \sharp \flat \flat \downarrow \downarrow$).

23 raises by $\frac{46}{45}$ (38 cents). 1E lowers by the same amount. 29 raises by $\frac{145}{144}$ (12 cents). b2 lowers by the same amount. 31 raises by $\frac{31}{30}$ (57 cents). 1E lowers by the same amount.

Multiple accidental combinations may also occur (e.g., $\sharp \sharp \flat \flat \uparrow \downarrow \sharp \downarrow \uparrow \sharp \flat \flat \downarrow \downarrow$). \uparrow and \downarrow are never combined into a single symbol but occur last before the note-head and by themselves.

Each tone can be tuned to some other tone in the context by a triadic just interval (e.g., perfect unison = 1:1; perfect octave = 2:1; perfect fifth = 3:2; perfect fourth = 4:3; major third = 5:4; minor third = 6:5; major sixth = 5:3; minor sixth = 8:5; or a septimal just interval (septimal 7th = 7:4; septimal major 2nd = 8:7; septimal minor 3rd = 7:6; septimal major 6th = 12:7; septimal diminished 5th = 7:5; Septimal augmented fourth = 10:7. Just tuning eliminates beats.

The easiest eleven-limit intervals to tune are the half-augmented fourth, 11:8 (e.g., C, $F\sharp$) and the neutral third, 11:9 (e.g., D, $F\sharp$). The easiest thirteen-limit intervals are the thirteenth, 13:8 (e.g., C, $A\flat$) and its inversion 16:13 (e.g., $A\flat$, C). These "higher" partials (11 and 13) are usually used in overtone or "undertone" chords.

On the Performance Practice of Extended Just Intonation
by Ben Johnston

Just intonation is simply the easiest way to tune musical intervals by ear. It results in greatly heightened purity and clarity of sound for two reasons: first, it eliminates acoustic beats to the maximum possible, and second, it exploits resonance by utilizing harmonically simple combinations of pitches. The term "extended" refers to the use of higher overtones than the first six partials, which are the basis of harmony in traditional tonal (triadic) music, and to more than usual use of combined symbols of alteration such as double and triple sharps or flats. The notational symbols I have devised are explained elsewhere. They provide a precisely accurate description of what the extended just intonation requires. The actual realization is achieved by ear.

As a first step the pitches should be approximated without regard to the unfamiliar signs. The purity and simplicity of maximum resonance should be sought. The pluses and minuses can safely be ignored if this is done carefully, since they serve to show where traditional harmonies, in order to be just tuned, result in slight raising and lowering pitches in order to avoid beats.

Next the arrows (up and down) and the $\overline{7}$'s and \overline{L} 's should be added to refine the pitch accuracy. These symbols alter pitch by amounts very close to a tempered quarter-tone, so that many pitches will approximate notes in a twenty-four-tone tempered scale. Fine tuning is again achieved by seeking maximum resonance and beat-free intervals.

Lastly, the 13 and E1 symbols should be accounted for. These alter by approximate eighth-tones, and can be regarded as shading to the sharp or flat side of a pitch, but not one great enough to introduce any ambiguity as to which pitch it is.

Vertical listening is the main clue to accuracy. Harmonic aggregates are either combinations of overtones or of undertones (a theoretical ordering which is the exact inversion of the overtone series). These two kinds of chords serve much as major and minor do in more traditional music. When such an aggregate is in tune, the ear readily perceives the increase in clarity and resonance.

In certain compositions I have employed even higher overtone relationships. In such cases bear in mind that the partials of the series get closer and closer together as one ascends the series, and each new octave of the series repeats the previous octave with a new note in between each pair of notes from the previous octave. Thus the higher octave has double the number of notes as the next lower octave. From the eighth through the sixteenth partials the size of the intervals between adjacent notes gradually increases from a whole tone to a half-tone. By the same logic the size of the adjacent intervals between the sixteenth and thirty-second partials gradually increases from a half-step to a quarter-step. The new note interpolated between two notes both present in a lower octave is a little on the high side of midway between them. For example, say the lower octave provides G and C (in ascending order). Then the next octave will provide, between these two notes, $B\flat$, which is just enough higher than the quarter-tone between A and $B\flat$ to sound definitely a $B\flat$ and not an A.

The aim of all this is to provide a harmonic logic to the ear which is even more compelling than traditional tonal logic. It incidentally enlarges the pitch resources.

TUNING GUIDE

Play in extended just intonation. Uninflected notes indicate C major just intonation: F;A;C and C;E;G and G;B;D are just major triads (4;5;6). Thus a 5th above B (or B_b or B[#]) requires a +, as does a major or minor 3rd above D (or D_b or D[#]). Similarly a 5th below A (or A_b or A[#]) requires a -, as does a major or minor 3rd or a 5th below F (or F_b or F[#]).

- # (X $\frac{25}{24}$); raise by 70 cents.
- b (÷ $\frac{25}{24}$); lower by 70 cents.
- + (X $\frac{81}{80}$); raise by 21.5 cents.
- (÷ $\frac{81}{80}$); lower by 21.5 cents.
- ↳ (X $\frac{36}{35}$); raise by 49 cents.
- ↘ (÷ $\frac{36}{35}$); lower by 49 cents. } 7th partial relations.
- ↑ (X $\frac{33}{32}$); raise by 53 cents.
- ↓ (÷ $\frac{33}{32}$); lower by 53 cents. } 11th partial relations
- '↑ (X $\frac{65}{64}$); raise by 27 cents.
- '↓ (÷ $\frac{65}{64}$); lower by 27 cents. } 13th partial relations

STRING QUARTET NO. 7

Ben Johnston

Scurrying $\text{d}=120$

I: Prelude

The score is handwritten on four staves, each with a clef and a key signature. The first staff is for the 1st Violin, the second for the 2nd Violin, the third for the Viola, and the fourth for the Cello. The music is in 5:4 time throughout. Key signatures change frequently, including major and minor keys with sharps and flats. Dynamic markings include *trem.*, *pp* (pianissimo), and *ff* (fortissimo). The notation is highly detailed, showing sixteenth-note patterns and rests.

I - 2 -

1 Vln 5:4 5:4 5:4 5:4
2 Vln 5:4 5:4 5:4 5:4
Vla 5:4 5:4 5:4 5:4
Vc 5:4 5:4 5:4 5:4

5
1 Vln 5:4 5:4 5:4 5:4
2 Vln 5:4 5:4 5:4 5:4
Vla 5:4 5:4 5:4 5:4
Vc 5:4 5:4 5:4 5:4

1 Vln 5:4 5:4 5:4 5:4
2 Vln 5:4 5:4 5:4 5:4
Vla 5:4 5:4 5:4 5:4
Vc 5:4 5:4 5:4 5:4

I - 3 -

Musical score for strings (1st Violin, 2nd Violin, Viola, Cello) showing measures 1-3. The score consists of two systems of four measures each. Measures 1-3 are identical in both systems. Measure 4 begins with a change in instrumentation.

Measure 1: All parts play eighth-note patterns. Time signature is 5:4 throughout. Measures 1-3 are identical.

Measure 4: 1st Violin: eighth-note pattern. 2nd Violin: eighth-note pattern. Viola: eighth-note pattern. Cello: eighth-note pattern. Time signature changes to 13:8.

10 Forceful

Scurrying

Musical score for strings (1st Violin, 2nd Violin, Viola, Cello) showing measures 10-13. The score consists of two systems of four measures each. Measures 10-12 are identical in both systems. Measure 13 begins with a change in instrumentation.

Measure 10: 1st Violin: eighth-note pattern. Dynamics: norm. fff. 2nd Violin: eighth-note pattern. Dynamics: norm. fff. Viola: eighth-note pattern. Cello: eighth-note pattern. Measure 10 ends with a fermata over the 1st Violin.

Measure 11: 1st Violin: pizz. arco. 2nd Violin: pizz. arco. Viola: trem. 3:2. Cello: trem. 3:2.

Measure 12: 1st Violin: eighth-note pattern. 2nd Violin: eighth-note pattern. Viola: trem. 3:2. Cello: trem. 3:2.

Measure 13: 1st Violin: eighth-note pattern. Dynamics: trem. 6:4. 2nd Violin: eighth-note pattern. Viola: trem. 6:4. Cello: eighth-note pattern. Time signature changes to 5:4.

I-4-

Forceful

3v2--1

Handwritten musical score for orchestra, page 15. The score includes parts for 1Vln, 2Vln, Vla, Vc, 1Vlh, 2Vlh, Vla, and Vc. The score features complex rhythmic patterns and performance instructions such as "norm. pizz. arco", "3:2", "5:4", "13:2", and "trem.". Measures 15-16 are indicated at the top of the page.

Scurrying

Handwritten musical score for strings (1Vln, 2Vln, Vla, Vc) on four staves. The score includes dynamic markings such as *trem.*, *pp subito*, *cresc. sempre*, and time signatures like $3:2$, $5:4$, and $5:4$.

1Vln: Measures 1-4. Measure 1: *trem.*, $3:2$. Measure 2: *pp subito*, $5:4$. Measure 3: *cresc. sempre*, $5:4$. Measure 4: $5:4$.

2Vln: Measures 1-4. Measure 1: *trem.*, *pp subito*, $5:4$. Measure 2: *trem.*, *pp subito*, $5:4$. Measure 3: *cresc. sempre*, $5:4$. Measure 4: $5:4$.

Vla: Measures 1-4. Measure 1: *trem.*, $3:2$. Measure 2: *pp subito*, $5:4$. Measure 3: *cresc. sempre*, $5:4$. Measure 4: $5:4$.

Vc: Measures 1-4. Measure 1: *trem.*, $3:2$. Measure 2: *pp subito*, $5:4$. Measure 3: *cresc. sempre*, $5:4$. Measure 4: $5:4$.

I-5

20

1Vn 5:4 3:2 3:2 3:2 6:5

2Vn 3:2 3:2 3:2

Vla 5:4 5:4 5:4 3:2

Vc 3:2 5:4 5:4 5:4

1Vn 5:4 5:4 5:4 3:2 5:4

2Vn 3:2 5:4 5:4 6:4

Vla 6:4 3:2 3:2 6:4 3:2

Vc 6:4 6:4 5:4

Forceful

1Vn 3:2 5:4 norm. fff pizz. arco

2Vn 3:2 5:4 3:2 norm. fff pizz. arco

Vla 5:4 5:4 norm. fff pizz.

Vc trill 5:4 5:4 3:2 norm. fff pizz.

I - 6.

25

1 Viola:

2 Viola:

Vla:

Vc:

1 Viola:

2 Viola:

Vla:

Vc:

Intense

30

1 Viola:

2 Viola:

Vla:

Vc:

Musical score for orchestra and choir, page 11, measures 11-12. The score includes parts for 1st Violin, 2nd Violin, Viola, and Cello. The vocal parts include Soprano 2, Alto, Tenor, Bass, and Chorus. The score features complex rhythmic patterns, including 3:2, 5:4, and 7:4 time signatures, and various performance instructions like "tr", "sforzando", and dynamic markings like "f" and "ff". The vocal parts sing in four-part harmonies.

35

A handwritten musical score page showing four staves. The top two staves are for '1Vln' and '2Vln', both in common time (indicated by 'C'). The third staff is for 'Vla' (bassoon) and the fourth staff is for 'Vcl' (cello). The bassoon staff has a sharp sign (F#) and the cello staff has a double sharp sign (G##). The score includes various musical markings such as fermatas, slurs, and dynamic signs like 'p' (piano) and 'f' (forte). The bottom right corner contains the word 'niente' above a series of horizontal lines.

II: Palindromes

Eerie ♩:240

1Vln pizz. ppsempre

2Vln suspont.trem. ppsempre

Vla pizz. ppsempre

Vc pizz. ppsempre

5

1Vln

2Vln

Vla

Vc

10

1Vln

2Vln

Vla

Vc

II-2-

15

Handwritten musical score for strings (1st Violin, 2nd Violin, Viola, Cello) at measure 15. The score consists of four staves. Measure 15 starts with a whole note rest for 1st Violin, followed by eighth-note patterns for 2nd Violin, Viola, and Cello. The key signature changes from A major (no sharps or flats) to E major (one sharp). Measure 16 begins with eighth-note patterns for all instruments.

20

Handwritten musical score for strings (1st Violin, 2nd Violin, Viola, Cello) at measure 20. The score consists of four staves. Measure 20 continues the eighth-note patterns established in measure 15. Measure 21 begins with eighth-note patterns for all instruments.

25-
3

Handwritten musical score for strings (1st Violin, 2nd Violin, Viola, Cello) at measure 25-3. The score consists of four staves. Measure 25-3 begins with eighth-note patterns for all instruments. Measure 26 begins with eighth-note patterns for all instruments.

II - 3-

Handwritten musical score for strings (1Vln, 2Vln, Vla, Vc) at measure 30. The score consists of four staves. 1Vln has a single note. 2Vln has a sixteenth-note pattern. Vla has a sustained note. Vc has a sustained note.

30

Handwritten musical score for strings (1Vln, 2Vln, Vla, Vc) at measure 30. The score consists of four staves. 1Vln has a sustained note. 2Vln has a sixteenth-note pattern. Vla has a sustained note. Vc has a sustained note.

35

Handwritten musical score for strings (1Vln, 2Vln, Vla, Vc) at measure 35. The score consists of four staves. 1Vln has a sustained note. 2Vln has a sixteenth-note pattern. Vla has a sustained note. Vc has a sustained note.

II - 4

Musical score for strings (Violin 1, Violin 2, Viola, Cello) in 2/4 time. Measure 40: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 41: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 42: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 43: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 44: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support.

45

Musical score for strings (Violin 1, Violin 2, Viola, Cello) in 2/4 time. Measure 45: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 46: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 47: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 48: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 49: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support.

50

Musical score for strings (Violin 1, Violin 2, Viola, Cello) in 2/4 time. Measure 50: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 51: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 52: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 53: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support. Measure 54: Violin 1 and 2 play eighth-note patterns. Viola and Cello provide harmonic support.

111

1 Viola

2 Viola *pizz.*

Vla. *et co su/pont trem.*

Vc.

55

1 Viola

2 Viola

Vla.

Vc.

60

1 Viola

2 Viola

Vla.

Vc.

65

Musical score page 65 showing parts for Mute (M), 2Vn, Vla, and Vc. The score consists of four systems of music. The first system has rests. The second system has notes. The third system has notes. The fourth system has rests.

70

Musical score page 70 showing parts for 1Vn, 2Vn, Vla, and Vc. The score consists of four systems of music. The first system has notes. The second system has notes. The third system has notes. The fourth system has notes.

75

Musical score page 75 showing parts for 1Vn, 2Vn, Vla, and Vc. The score consists of four systems of music. The first system has rests. The second system has notes. The third system has notes. The fourth system has notes.

11 - 7

2Vln. 2Vla. Vcl.

80

This page contains four staves of handwritten musical notation for strings. The staves are labeled from top to bottom: 2Vln., 2Vla., Vla., and Vcl. Measure 80 begins with a rest followed by eighth-note patterns. Measure 81 starts with a sixteenth-note pattern. Measures 82-83 show sixteenth-note patterns with some grace notes. Measure 84 consists of eighth-note patterns. Measure 85 concludes with eighth-note patterns.

11 - 7

2Vln. 2Vla. Vcl.

85

86

This page continues the string section. Measure 85 shows eighth-note patterns. Measure 86 begins with a sixteenth-note pattern. Measures 87-88 show sixteenth-note patterns with grace notes. Measure 89 consists of eighth-note patterns. Measure 90 concludes with eighth-note patterns.

11 - 7

1Vln. 2Vln. Vla. Vcl.

90

This page concludes the string section. Measure 90 shows eighth-note patterns. Measure 91 begins with a sixteenth-note pattern. Measures 92-93 show sixteenth-note patterns with grace notes. Measure 94 consists of eighth-note patterns. Measure 95 concludes with eighth-note patterns.

II - 8

Musical score for Flute, Clarinet, Bassoon, and Trombone, section II, page 8.

Flute (Fl): Sustained notes.

Clarinet (Cl): Sustained notes.

Bassoon (Bla): Melodic line with eighth-note patterns.

Trombone (Vc): Harmonic support with sustained notes.

Musical score for orchestra, page 95, measures 1-4. The score includes parts for 1st Trombone (1Tbn), 2nd Trombone (2Tbn), Bass Trombone (Bass Tbn), and Bassoon (Bassoon). The key signature is B-flat major (two flats). Measure 1: 1Tbn and 2Tbn play eighth-note chords. Bass Trombone and Bassoon are silent. Measure 2: 1Tbn and 2Tbn play eighth-note chords. Bass Trombone and Bassoon play eighth-note chords. Measure 3: 1Tbn and 2Tbn play eighth-note chords. Bass Trombone and Bassoon play eighth-note chords. Measure 4: 1Tbn and 2Tbn play eighth-note chords. Bass Trombone and Bassoon play eighth-note chords.

A handwritten musical score for string instruments. The score consists of four staves: 1. Viola (Vla), 2. Cello (Vcl), 3. Double Bass (Vcb), and 4. Bassoon (Bsn). The tempo is marked as 100. The key signature changes throughout the score. The viola and cello parts have mostly rests and occasional grace notes. The double bass part has a sustained note with a 'pizz.' instruction. The bassoon part features a rhythmic pattern with grace notes and dynamic markings like 'ff' and 'ff+'.

110 - 9

105

1 Viola

2 Viola

Vla

Vc

8va -

8va -

8va -

8va -

110

1 Viola

2 Viola

Vla

Vc

8va -

8va -

8va -

115

8va -

1 Viola

2 Viola

Vla

Vc

8va -

8va -

II - 10

8va--

11b
211
Vla
Vc

8va--

8va--

8va--

8va--

120

111
211
Vla
Vc

8va--

b-a

b-a

b-a

8va--

125

111
211
Vla
Vc

8va--

b-a

b-a

b-a

II - 11

130

1st Violin
2nd Violin
Viola
Cello

8va-1 8va-1 8va-1 8va-1

135

1st Violin
2nd Violin
Viola
Cello

8va-1 8va-1 8va-1

140

1st Violin
2nd Violin
Viola
Cello

II - 12-

145

M
2H
Vla
Vc

8va--
8va--
8va--
8va--

1Vi
2Vi
Vla
Vc

8va--
8va--
8va--
8va--

1Vi
2Vi
Vla
Vc

150
arco sul pont. tram.
pizz.

8va-----

155

II - 13

3va -

1Vn

2Vn

Vla

Vc

160

3va -

1Vn

2Vn

Vla

Vc

165

1Vn

2Vn

Vla

Vc

170

II - 14

Musical score for strings (Violin I, Violin II, Viola, Cello) on four staves. Measure 1: Violin I eighth-note pairs, Violin II eighth-note pairs, Viola eighth-note pairs, Cello eighth-note pairs. Measure 2: Violin I eighth-note pairs, Violin II eighth-note pairs, Viola eighth-note pairs, Cello eighth-note pairs. Measure 3: Violin I eighth-note pairs, Violin II eighth-note pairs, Viola eighth-note pairs, Cello eighth-note pairs.

175

8va

Musical score for strings (Violin I, Violin II, Viola, Cello) on four staves. Measure 1: Violin I eighth-note pairs, Violin II eighth-note pairs, Viola eighth-note pairs, Cello eighth-note pairs. Measure 2: Violin I eighth-note pairs, Violin II eighth-note pairs, Viola eighth-note pairs, Cello eighth-note pairs. Measure 3: Violin I eighth-note pairs, Violin II eighth-note pairs, Viola eighth-note pairs, Cello eighth-note pairs.

180

Musical score for strings (Violin I, Violin II, Viola, Cello) on four staves. Measure 1: Violin I eighth-note pairs, Violin II eighth-note pairs, Viola eighth-note pairs, Cello eighth-note pairs. Measure 2: Violin I eighth-note pairs, Violin II eighth-note pairs, Viola eighth-note pairs, Cello eighth-note pairs. Measure 3: Violin I eighth-note pairs, Violin II eighth-note pairs, Viola eighth-note pairs, Cello eighth-note pairs.

II - 15

8va -----

185

1 Viola

2 Viola

Vla

Vc

8va -----

190

1 Viola

2 Viola

Vla

Vc

8va -----

195

1 Viola

2 Viola

Vla

Vc

II-16

200

sva



With Solemnity $\text{J}=80$

III Variations

Musical score for strings (1st Violin, 2nd Violin, Viola, Cello) in 3/4 time. Measure 1: 1st Violin (p), 2nd Violin (p), Viola (mp), Cello (p). Measure 2: 1st Violin (p), 2nd Violin (p), Viola (32nd notes), Cello (p). Measure 3: 1st Violin (p), 2nd Violin (p), Viola (mp), Cello (p). Measure 4: 1st Violin (p), 2nd Violin (p), Viola (p), Cello (pp).

5

Musical score for strings (1st Violin, 2nd Violin, Viola, Cello) in 3/4 time. Measure 5: 1st Violin (p), 2nd Violin (p), Viola (mp), Cello (p). Measure 6: 1st Violin (p), 2nd Violin (p), Viola (mp), Cello (p). Measure 7: 1st Violin (p), 2nd Violin (p), Viola (3:2, mp), Cello (mf). Measure 8: 1st Violin (p), 2nd Violin (p), Viola (p), Cello (mp).

10

Musical score for strings (1st Violin, 2nd Violin, Viola, Cello) in 3/4 time. Measure 9: 1st Violin (p), 2nd Violin (p), Viola (3:2, mp), Cello (mf). Measure 10: 1st Violin (p), 2nd Violin (p), Viola (p), Cello (mp). Measure 11: 1st Violin (p), 2nd Violin (p), Viola (p), Cello (p). Measure 12: 1st Violin (p), 2nd Violin (p), Viola (p), Cello (mp).

III-2

15

Handwritten musical score for four voices (1Hn, 2Hn, Ha, Vc) on four staves. The score includes dynamic markings (pp, p, mp), tempo changes (120, 100, 80, 70, 60), and performance instructions like '3:2' and 'pp'.

Handwritten musical score page 58. The score consists of four staves: 1Vn (top), 2Vn, Vla, and Vc (bottom). The music is in common time, with various dynamics (pp, mp) and performance instructions (e.g., 3:2, 3=2). Measure numbers 5 and 8 are indicated above the staves.

20

III - 3

25

1 Viola: *mf*, *f*, *mf*, *mp*

2 Viola: *mf*, *f*, *mf*

Vla: *f*, *ff* > *f*, *ff* (32)

Vcl: *mf*, < *f*, *mf*

Handwritten musical score page 30. The score includes four staves: 1st Violin (top), 2nd Violin, Viola, and Cello (bottom). The key signature is B-flat major (two sharps). Measure 30 begins with a dynamic of p . The 1st Violin has a sixteenth-note pattern. The 2nd Violin has eighth-note pairs. The Viola has eighth-note pairs. The Cello has eighth-note pairs. The score concludes with a repeat sign and a section labeled "3:2".

Handwritten musical score for strings (1st Viola, 2nd Viola, Cello) in 2/4 time. The score includes dynamic markings (mp, mf, pizz., arco, f), performance instructions (3:2, 8va----, sul pont.), and a tempo marking (3:2).

11/11
11/11
2/2
2/2
Vla
Vc

mp
mf
pizz.
arco
f
3:2
8va----
f
f
sul pont.

8va 35 III - 4

1 Viola 2/8 8va pizz. mp arco mf

2 Viola 2/8 + arco mf

Vla 2/8 pizz. mp mf

Vc 2/8 pizz. mp mf pizz.

1 Viola f# fz f# fz 8va

2 Viola fz f fz

Vla 2/8 fz f

Vc fz arco fz

1 Viola 8va mp mf f# f

2 Viola mp mf pizz. arco fz f

Vla mp 3:2 f

Vc mp mf 3:2 pizz. fz arco f

III - 5

1Vln 8va.....

2Vln

Vla

Vc

1Vln 45

2Vln

Vla

Vc

1Vln

2Vln

Vla

Vc

III - 6

50

1. *III vn* *fz* *mp* *mf*
2. *II vn* *fz* *mp* *mf*
3. *Vla* *fz* *mp* *mf*
4. *Vc* *pizz.* *fz* *arco* *mf* *pizz.*

55

1. *III vn* *f* *fz*
2. *II vn* *f* *fz*
3. *Vla* *f* *fz*
4. *Vc* *arco* *f* *pizz.* *fz*

1. *III vn* *mp* *mf*
2. *II vn* *mp* *mf* *3:2*
3. *Vla* *mp* *mf*
4. *Vc* *mp* *mf* *3:2*

1. *III vn* *pizz.* *arco* *pp*
2. *II vn* *pizz. arco* *mp* *pp*
3. *Vla* *mp* *pp*
4. *Vc* *mp* *pp*

1 Viola

2 Viola

Vla

Vc

3:2 3:2 2:2 3:2

leggiere

3:2

3:2 3:2

3:2

1 Viola

2 Viola

Vla

Vc

3:2 3:2

60

leggiere

3:2 3:2

3:2 3:2

pp

pp

1 Viola

2 Viola

Vla

Vc

3:2 3:2 3:2 3:2

leggiere

3:2 3:2

leggiere

3:2 3:2

3:2

III - 8

1 Viola

2 Viola

Vla

Vc

65

1 Viola

2 Viola

Vla

Vc

1 Viola

2 Viola

Vla

Vc

III-9

III - 10

1 Viola

2 Viola

Vla

Vc

1 Viola

2 Viola

Vla

Vc

75

1 Viola

2 Viola

Vla

Vc

III - 77

111n $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{5}{4}$

211n $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{5}{4}$

Vla $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{5}{4}$

Vc $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{5}{4}$

80

fz f

fz f

fz f

fz f

mf

111n $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$

211n $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$

Vla $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$

Vc $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$

pp

fz f

fz f

fz f

pp

fz f

fz f

85

111n $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$

211n $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$

Vla $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$

Vc $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$ $\frac{3}{2}$

$= mf$

pp

$= mf$

pp

$= mf$

pp

III-12.

111n

2Vln

Vla

Vc

3:2

3:2

3:2

3:2

> p

pp

3:2

3:2

3:2

3:2

> p

pp

3:2

3:2

> p

pp

3:2

111n

2Vln

Vla

Vc

90

mf

> p

pp

3:2

3:2

3:2

3:2

mf

> p

pp

3:2

3:2

mf

> p

pp

3:2

111n

2Vln

Vla

Vc

mf

f

fz

mf

f

fz

mf

f

fz

mf

f

fz

95

1 VI
2 VI
Vla
Vc

mf

pp

mf

mf

mf

mf

1 VI
2 VI
Vla
Vc

f

fz

100

1 VI
2 VI
Vla
Vc

p

p

p

p

mf

mf

mf

mf

III-14

Handwritten musical score for string quartet (Violin 1, Violin 2, Viola, Cello) in 3/2 time. The score shows two measures of music. Measure 21 starts with a dynamic of *pp*. Measure 22 begins with a dynamic of *ppp sempre*. Various slurs and grace notes are present throughout the score.

105

A handwritten musical score for string quartet and piano. The score consists of four staves: Violin I (top), Violin II, Cello, and Piano (bottom). The time signature varies throughout the page, indicated by '2/4' or '3/4'. The key signature changes between major and minor keys. The score includes various dynamic markings like 'f', 'ff', and 'p', as well as performance instructions such as 'rit.', 'accel.', and 'sforz.'.

110

A handwritten musical score for orchestra, page 11, containing six staves of music. The staves are labeled with instrument names: Trombones (Tromb), Bassoon (Bassoon), Clarinet (Clarinet), Bassoon (Bassoon), Trombones (Tromb), and Bassoon (Bassoon). The score includes various musical markings such as dynamic levels (e.g., ff, f, ff), tempo changes (e.g., 3/4, 2/4, 3/2), and performance instructions (e.g., "slur", "staccato"). Measure 111 starts with a forte dynamic (ff) and a 3/4 time signature. Measure 112 begins with a bassoon solo. Measure 113 shows a transition to a 2/4 time signature. Measure 114 features a bassoon solo again. Measure 115 ends with a bassoon solo. Measure 116 concludes with a bassoon solo.

115

115

Handwritten musical score for strings (1Vln, 2Vln, Vla, Vc) at measure 115. The score shows four staves with various notes and rests. Measure 115 ends with a repeat sign and a 3:2 ratio bracket.

Handwritten musical score for strings (1Vln, 2Vln, Vla, Vc) at measure 116. The score shows four staves with various notes and rests. Measure 116 ends with a repeat sign and a 3:2 ratio bracket.

120

Handwritten musical score for strings (1Vln, 2Vln, Vla, Vc) at measure 120. The score shows four staves with various notes and rests. Measure 120 ends with a repeat sign and a 3:2 ratio bracket.

III - 16

125

M. 125

111n: Measures 1-4

211n: Measures 1-4

Vla: Measures 1-4

Vc: Measures 1-4

3:2 markings are present above the staves.

111n: Measures 5-6

211n: Measures 5-6

Vla: Measures 5-6

Vc: Measures 5-6

111n: Measures 7-8

211n: Measures 7-8

Vla: Measures 7-8

Vc: Measures 7-8

130

p dynamic

mp dynamic

3:2 markings are present above the staves.

135

Handwritten musical score for strings (1Vln, 2Vln, Vla, Vc). The score consists of two systems of music.

System 1 (Measures 135-136):

- 1Vln:** Measures 135-136. Dynamics: pp , p . Measure 136 ends with a fermata.
- 2Vln:** Measures 135-136. Dynamics: $=\text{pp}$, p .
- Vla:** Measures 135-136. Dynamics: $=\text{pp}$, mp . Measure 136 includes a tempo change to $3:2$.
- Vc:** Measures 135-136. Dynamics: pp , p .

System 2 (Measures 140-141):

- 1Vln:** Measures 140-141. Dynamics: $\text{mp} \rightarrow \text{p}$.
- 2Vln:** Measures 140-141. Dynamics: $\text{mp} \rightarrow \text{p}$.
- Vla:** Measures 140-141. Dynamics: $=\text{mf} \rightarrow \text{mp}$. Measure 141 includes a tempo change to $3:2$.
- Vc:** Measures 140-141. Dynamics: $=\text{mp} \rightarrow \text{p}$.

III - 18

145

M. 145

1. M. 111: $\frac{2}{3}$ time, $\#$ key. Dynamics: p , pp . Measure ends with a fermata.

2. M. 111: $\frac{2}{3}$ time, $\#$ key. Dynamics: p , pp .

3. M. 112: $\frac{2}{3}$ time, $\#$ key. Dynamics: p , mp . Measure ends with a fermata.

4. M. 112: $\frac{2}{3}$ time, $\#$ key. Dynamics: p , pp .

5. M. 113: $\frac{2}{3}$ time, $\#$ key. Dynamics: p , pp .

1. M. 114: $\frac{2}{3}$ time, $\#$ key. Dynamics: mp .

2. M. 114: $\frac{2}{3}$ time, $\#$ key. Dynamics: mp .

3. M. 115: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

4. M. 115: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

5. M. 116: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

6. M. 116: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

7. M. 117: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

8. M. 117: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

1. M. 118: $\frac{2}{3}$ time, $\#$ key. Dynamics: mp .

2. M. 118: $\frac{2}{3}$ time, $\#$ key. Dynamics: mp .

3. M. 119: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

4. M. 119: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

5. M. 120: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

6. M. 120: $\frac{2}{3}$ time, $\#$ key. Dynamics: mf .

III - 19

1 Viola 2 Viola Vla Vc

mf *mp* *pp*

mp *mp* *pp*

f *=mf* *=p*

mf *mp* *pp*

160

mp *f*

mp *mf* *pizz.* *arco*

mp *3:2*

mp *3:2*

165

pizz. *mp* *mf* *f*

pizz. *mp* *mf* *pizz.* *arco*

>mp *mf* *3:2*

pizz. *mp* *f*

III - 20

Handwritten musical score for orchestra, page III-20. The score consists of ten staves of music with various dynamics, articulations, and performance instructions.

The score includes the following markings:

- Measure 1: Dynamics f_2 , f , f_2 , f , f .
- Measure 2: Dynamic f , instruction $\langle f \rangle 3:2$.
- Measure 3: Dynamics f_2 , f , f , f .
- Measure 4: Dynamic f , instruction $\langle f \rangle 3:2$.
- Measure 5: Dynamic $pizz.$
- Measure 6: Measure number 170.
- Measure 7: Dynamics ff , ff , ff .
- Measure 8: Dynamics ff , ff , ff .
- Measure 9: Dynamics ff , ff , ff .
- Measure 10: Dynamics ff , ff , ff .
- Measure 11: Dynamics fff , fff , fff .
- Measure 12: Dynamics $pizz. arco$, p , $pizz.$
- Measure 13: Dynamics $\langle f \rangle 3:2$, $\langle f \rangle 3:2$, $\langle f \rangle 3:2$.
- Measure 14: Dynamics fff , $pizz.$
- Measure 15: Dynamics fff , $pizz.$

III - 21

1Vln
2Vln
Vla
Vc

mf
arco
f
ff
pizz.
arco
mf
f
ff
3:2
3:2
fff

3:2

Fine
Aug
1984