Wolfgang von Schweinitz

Plainsound Etudes

FOR VIOLA SOLO

Three Just Intonation Studies
based on a flexible non-tempered 11-limit 31-tone scale

op. 58 b
2015

for Andrew McIntosh
and all violists with an interest in
the sound and performance practice
of microtonal just intonation

PLAIN SOUND MUSIC EDITION

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ACCIDENTALS
for microtonal just intonation

EXTENDED HELMHOLTZ-ELLIS PI TCH NOTATION
The exact intonation of each pitch is written out by means of the following harmonically defined accidentals:

\[
\begin{align*}
\flat & \quad \natural & \quad \sharp & \quad \times & \quad \text{Pythagorean series of perfect fifths, based on the open strings (… c g d a e …)} \\
\sharp & \quad \natural & \quad \# & \quad \times & \quad \text{lowers / raises the pitch by a syntonic comma} \\
& & & & \frac{61}{60} = \text{circa 21.3 cents} \\
\sharp & \quad \natural & \quad \# & \quad \times & \quad \text{lowers / raises the pitch by two syntonic commas} \\
& & & & \text{circa 43 cents} \\
\flat & \quad \& & \quad \text{lowers / raises the pitch by a septimal comma} \\
& & & & \frac{64}{63} = \text{circa 27.3 cents} \\
\flat & \quad \& & \quad \text{lowers / raises the pitch by two septimal commas} \\
& & & & \text{circa 54.5 cents} \quad \text{(not used in this score)} \\
\flat & \quad \uparrow & \quad \text{raises / lowers the pitch by an 11-limit undecimal quarter-tone} \\
& & & & \frac{33}{32} = \text{circa 53.3 cents}
\end{align*}
\]

These 'Helmholtz-Ellis' accidentals for just intonation were designed in collaboration with Marc Sabat.

The attached arrows for pitch alterations by a syntonic comma are transcriptions of the notation used by Hermann von Helmholtz in his book "Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musik" (1863). – The annotated English translation "On the Sensations of Tone as a Physiological Basis for the Theory of Music" (published 1875/1885) was made by Alexander J. Ellis, who refined the definition of pitch within the 12-tone system of Equal Temperament by introducing a division of the octave into 1200 cents. – The accidental sign denoting an alteration by a septimal comma was devised by Giuseppe Tartini (1692-1770), the composer, violinist and researcher who investigated the difference tones created by double-stops.

Pitch bend information
In addition to the harmonic definition of a pitch by means of its accidentals, it is also possible to specify its absolute pitch height as a cents-deviation from the respectively indicated chromatic pitch in the standard 12-tone System of Equal Temperament. – Such additional pitch bend numbers are not included in this score, as every pitch can be tuned by ear. There is no need for rehearsals with the aid of a tuning device.

Frequency ratios
The score also denotes the mathematical frequency ratios of the various just intervals performed as double stops or melodic steps. The numbers of these ratios contain a lot of information, which is extremely valuable for tuning the intervals by ear. The frequency ratio serves as the stenographic "code name" of the interval, specifying not only its size, but also the partial unisons and difference tones relevant for its timbre, as well as the fundamental pitch or root of the interval (its periodicity pitch) and the relative degree of consonance or harmonic complexity of the tone relationship.

DYNAMICS
The piece should be performed without any frequency vibrato and with a soft, but confident and embracing sound that includes both strongly emphasized accents and the magic of a sudden pianissimo. Every tuned double-stop sonority may be interpreted at the dynamic level that seems most adequate for expressing its specific timbre, identity and feeling within the harmonic, melodic and rhythmical context.

TEMPO
The piece should be performed with a lot of rubato (always counting dotted half notes) within a gradually accelerated melodic forward movement that accommodates the liberty to prolong a sound whenever needed or desired.

PERFORMANCE DURATION circa 27 minutes
Etude 1: ca. 6½ minutes, Etude 2: ca. 5½ minutes, Etude 3: ca. 13 minutes.
Each piece may also be performed separately.
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Cantando con tempo rubato (œ ca. 48)

Viola

Diatonic semitone
16/11
11-limit sixth-tone
44/45 (+39c)

Percentage: 54:55

Diatonic semitone
16/11
11-limit sixth-tone
44/45 (+39c)

Semitone
121/128
Lesser Dyad
(+46c)

Semitone
224/225
Septimal
(+71c)

Semitone
80/81
Septimal
(+22c)

Semitone
63/64
Septimal
(+22c)

Semitone
48/49
Septimal
(+22c)

Semitone
2025:2048
(+206c)

Semitone
15/8
(+32c)

Semitone
9/7
(+32c)

Semitone
7/4
(+32c)

Semitone
12/7
(+16c)

Semitone
2/1
(+12c)

Semitone
9/5
(+12c)

Semitone
4/3
(+12c)

Semitone
9/4
(+12c)

Semitone
5/3
(+12c)

Semitone
3/2
(+12c)

Small chromatic semitone
(+77c)

Larger Darwin
(+46c)

Syntonic
(+39c)

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Etude 1
James Tenney & Marc Sabat

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a tempo (\textit{\textbf{\textasciitilde ca. 58}})

\begin{align*}
7/4 & 4/3 & 9/7 & 6/5 \\
5/4 & 6/5 & 5/4 & 8/5 \\
15/8 & 7/3 & 28/15 & 11/6 \\
\end{align*}

\begin{align*}
11/6 & 11/8 & 5/3 & 9/5 \\
4/3 & 8/3 & 4/3 & 8/3 \\
7/4 & 7/3 & & \\
\end{align*}

\begin{align*}
7/3 & 7/3 & 2/1 & 3/2 \\
2/1 & 3/2 & 4/3 & 5/3 \\
4/3 & 5/3 & & \\
\end{align*}

avanti (\textit{\textbf{\textasciitilde ca. 60}})

\begin{align*}
9/5 & 11/6 & 18/11 \\
11/3 & 11/9 & 6/3 \\
8/5 & & & \\
\end{align*}

\begin{align*}
7/6 & 7/3 & 7/2 & 4/3 \\
7/2 & 4/3 & 241/112 & 11/5 \\
4/3 & & & \\
\end{align*}

\begin{align*}
5/4 & 6/3 & 4/3 & 7/6 \\
4/3 & 7/6 & 7/3 & 7/2 \\
4/3 & & & \\
\end{align*}

Minore whole tone

\begin{align*}
125:128 & 21:24 \quad \text{a tempo (\textit{\textbf{\textasciitilde ca. 60}})} \\
55:56 & & & \\
\end{align*}

\begin{align*}
5/4 & 6/3 & 4/3 & 7/6 \\
4/3 & 7/6 & 7/3 & 7/2 \\
4/3 & & & \\
\end{align*}

ritenuto a tempo

\begin{align*}
125:128 & 21:24 \quad \text{a tempo (\textit{\textbf{\textasciitilde ca. 60}})} \\
55:56 & & & \\
\end{align*}

\begin{align*}
5/4 & 6/3 & 4/3 & 7/6 \\
4/3 & 7/6 & 7/3 & 7/2 \\
4/3 & & & \\
\end{align*}

ritenuto
Etude 2
Vicentino & Gesualdo

Cantando con tempo rubato (alla ca. 60)

*piano sonore e sempre non vibrato*

* see footnote on page 1.
** see footnote on page 1.
Cantando con tempo rubato (≈ ca. 60)

piano sonore e sempre non vibrato

*) see footnote on page 3