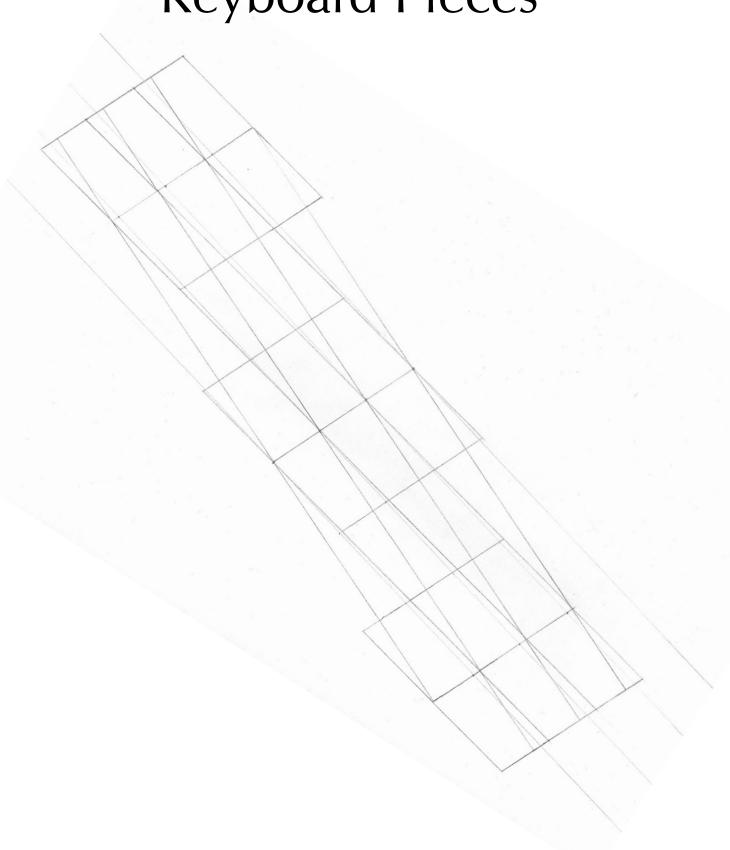
Robinson McClellan

Keyboard Pieces



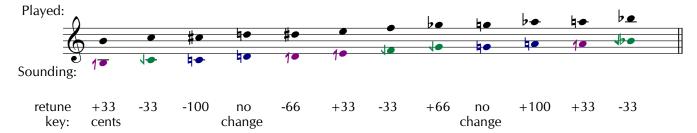
WHAT YOU NEED TO KNOW

Retuning / Scordatura

Using MIDI tuning sofware such as CSE (http://www.h-pi.com) may be easier than retuning a piano.

Special Accidentals (created by Ezra Sims, font by Ted Mook):

1 = 33 cents sharper; 1 = 33 cents flatter (33 cents = 1/6th of a whole tone)

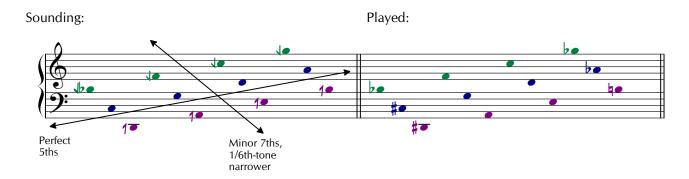


It might be useful, though not necessary, to label the keyboard like this:



The 12 pitches are tuned as a lattice of Perfect 5ths and Minor 7ths; the Minor 7ths are 1/6th-tone narrower than normal (equal-tempered) Minor 7ths; these 7ths are close to the seventh partial.

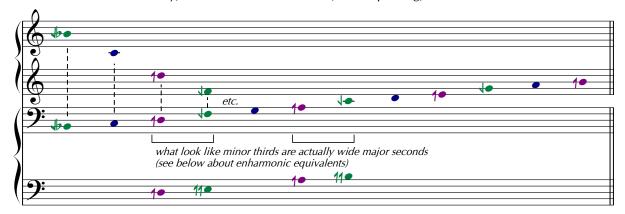
Colors show like-tuned pitches: blue = unaltered, green = lowered 1/6th tone, purple = raised 1/6th tone.



WHAT YOU MIGHT WANT TO KNOW, JUST FOR FUN

Inverted, each *narrow* Minor 7th becomes a *wide* Major 2nd, 1/6th-tone larger than standard tuning. Moving up by Major 2nds is the same as moving down the lattice by Minor 7ths.

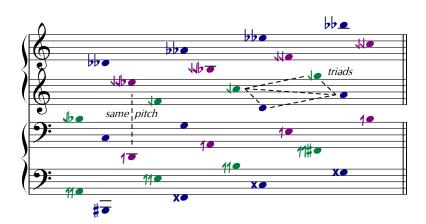
Viewed / heard this way, the lattice is a continuous, non-repeating, 12-note Wide-Whole-Tone Scale:



Every three wide whole steps, you reach a perfect fifth — instead of a tritone as in standard tuning. This is because you are gaining an extra 1/6th-tone, or 1/3rd of a half step, each time.

The lattice continues up and down along the line of sevenths, each pitch repeating in octaves.

Repeated pitches (enharmonic equivalents, same sounding pitch spelled differently) line up vertically:



The lattice could continue along the line of fifths too, for example up along the "blue axis" to E-natural. But that would require more than 12 sounding pitches; this way, it fits on a piano keyboard.

Pretty-sounding, beautifully in-tune triads form from triangular relationships between notes in the lattice (two examples shown). One type of triad has a minor third on the bottom (upward-pointing triangle); the other type has the minor third on top (downward-pointing triangle).

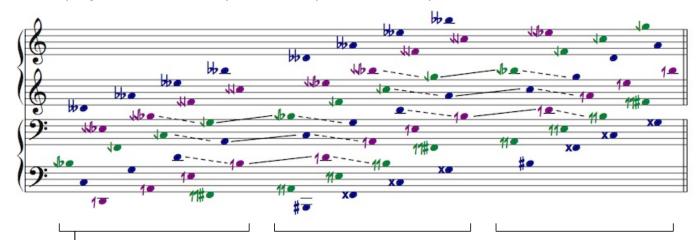
Moving around the lattice from one triad to the next, through adjacent triangles on the diagram, gives a smooth harmonic flow. The second piece, "Down Through the Lattice" (p.8), explores this.

Here are three copies of the lattice, side by side.

The lattice connects to itself on its right and left edges by normal (equal-tempered) minor thirds (solid lines).

Each minor third has two "shadow" or "mirror" minor thirds on either side, 1/6th-tone smaller (dotted lines).

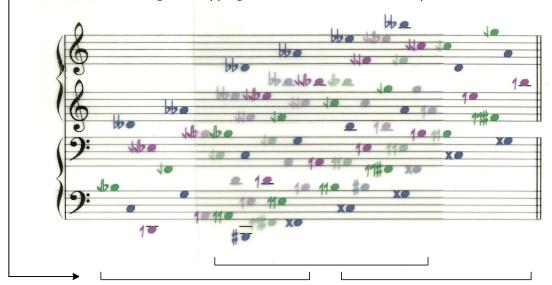
Traveling along these lines shifts the tonality up or down by 1/6th tone (1 or 1). Three shifts reach one half step higher or lower, for example in the third piece, "Invention" (p.12).



Collapsing the two on either side inward, behind the central one, creates a "3D" view of the lattice, showing that many adjacent pitches are only 1/6th-tone apart (1 or 1).

That's why navigating around the lattice requires caution. Two tones 1/6th apart clash harmonically, but melodically they sound like very small Minor 2nds.

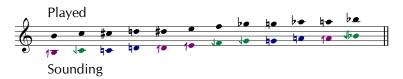
This is the strange overlapping 3D harmonic universe of this piece.



CONTEMPLATING THE LATTICE

The lattice makes a good object of contemplation. Just stare at it, and play through it on the keyboard, and you'll continue to find new interesting aspects of it.

Prelude

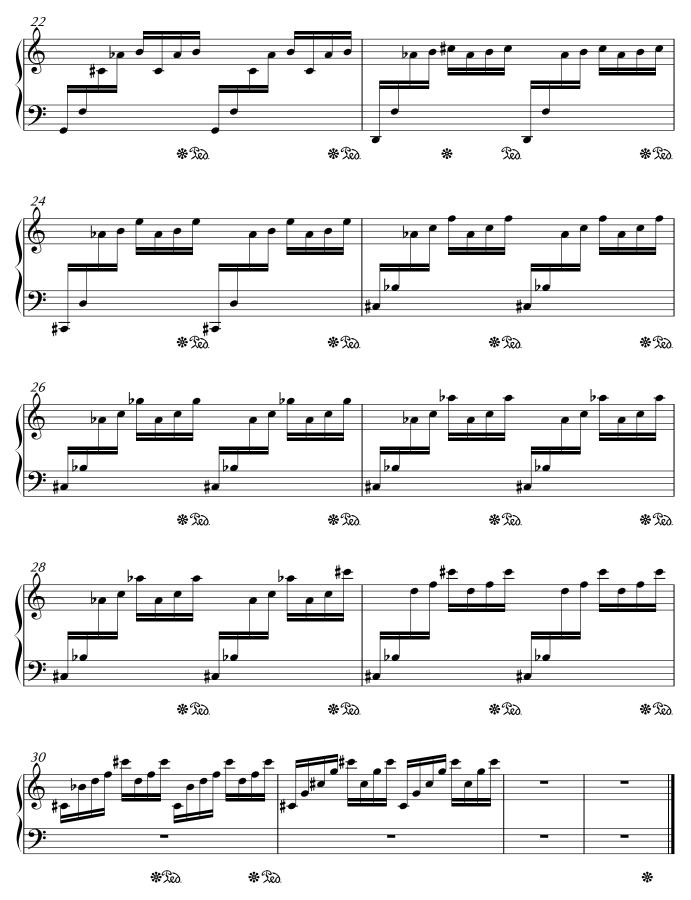


1 = 33 cents sharper; 1 = 33 cents flatter (33 cents = 1/6th of a whole tone)





Doesn't sound as written — see first page.



Doesn't sound as written — see first page.

Down Through the Lattice



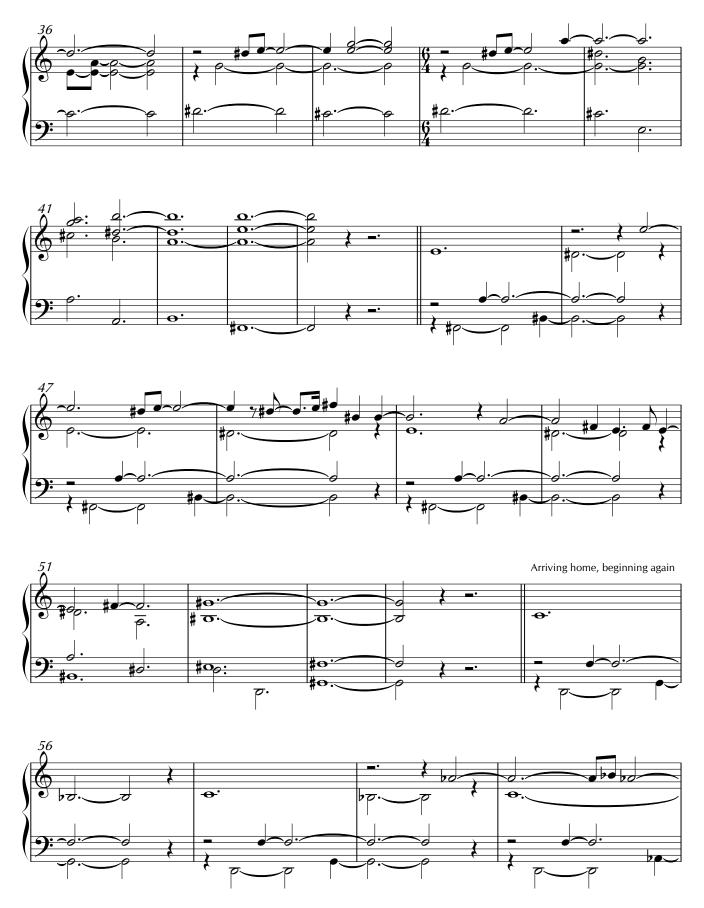
1 = 33 cents sharper; $\lambda = 33$ cents flatter (33 cents = 1/6th of a whole tone)



Doesn't sound as written — see first page.

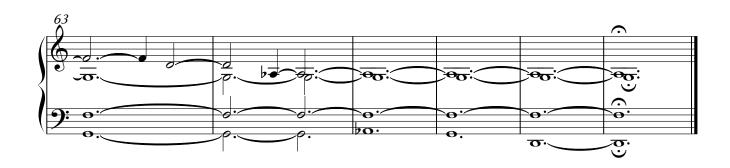
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Doesn't sound as written — see first page.





Invention

















Tune on a Ground











Prelude, again



1 = 33 cents sharper; 1 = 33 cents flatter (33 cents = 1/6th of a whole tone)











