

La Monte Young's

The Well-Tuned Piano

By Kyle Gann

La Monte Young began work on his magnum opus, The Well-Tuned Piano, in 1964. For 27 years he kept the tuning a secret - only a few close friends knew it. In 1991, with the use of a calculator, a tunable Yamaha DX7, and a CD player with an A-to-B button, I tuned my synthesizer to the Gramavision recording of the work and figured out ten pitches of the tuning. Why not all 12? Because one pitch, G#, never appears on that recording of the work, and another, C#, only appears in one five-minute passage on the fifth CD. I told La Monte that I had figured out the tuning and wanted to publish an analysis of the work. He thought it over and agreed that it was time to release the tuning into public discourse.

The tuning, in all octaves, is as follows, given first in frequency ratios to the tonic E-flat, then in cents (1/1200ths of an octave) above E-flat:

Notes:	Eb	E	F	F#	G	G#	A	Bb	B	C	C#	D
Ratios:	1/1	567/512	9/8	147/128	21/16	1323/1024	189/128	3/2	49/32	7/4	441/256	63/32
Cents:	0	177	204	240	471	444	675	702	738	969	942	1173

(If you don't have enough experience with just intonation to make sense of this chart, try reading the step-by-step [Just Intonation Explained](#) section.)

Note that the scale does not uniformly ascend: G# is lower than G, and C# is lower than C. This is so that all perfect fifths (3/2 ratios) will be spelled as perfect fifths on the keyboard.

The premise of this tuning is actually very simple, and analogous to the tuning from which European classical tuning evolved. Young's tuning can be arranged in a grid in which the perfect fifths (3/2 ratios) run in one direction (here: upwards), and the pure minor sevenths (7/4 ratios) in another (left to right):

$\frac{49}{32}$ $\frac{7}{4}$	$\frac{147}{128}$ $\frac{21}{16}$	$\frac{441}{256}$ $\frac{63}{32}$	$\frac{1323}{1024}$ $\frac{189}{128}$	$\frac{567}{512}$
$\frac{1}{1}$	$\frac{3}{2}$	$\frac{9}{8}$		

For more information on [The Well-Tuned Piano](#), see my article "[La Monte Young's The Well-Tuned Piano](#)" in [Perspectives of New Music](#) Vol. 31 No. 1 (Winter 1993), pp. 134-162.

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