

Timbre and Tuning

Relationship between spectral components (waveform) and tuning system

John Chowning

Stria (1977)

Tuning and Timbre derived from Golden Mean (1.608...)

Pseudo-octave 1.608:1

'Harmonics' are powers of 1.608

Composed using FM synthesis

Jean-Claude Risset

Mutations (1969)

Pitch material and spectral components 'mirror' each other

Pitches become spectral components and vice versa

Wendy Carlos

Beauty in the Beast (1986)

'Alpha' and 'Beta' scales

Alpha = 78.0 cents/step; 15.385 steps/octave

Beta = 63.8 cents/step; 18.809 steps/octave

Timbres designed to 'fit' the scales

Steven Miller

Twin Canon (2003)

19-tone extended Just scale

Same 19 intervals used for timbre construction and temporal divisions

Composed using FM synthesis in Csound