

# Intervals and Dissonance in Human Evolution

In Anthroposophy, musical intervals develop in conjunction with humans' spiritual and physical experiences. According to this system, song and speech arose in the Lemurian age. People lived in the Cosmos, absorbed sound from it, and did not experience their physical bodies. The smallest interval perceptible was the 9<sup>th</sup>. In the Atlantean age music was a transportation of physical experiences into the spiritual world. Smallest interval was the 7<sup>th</sup>. The Post-Atlantean was the age of the 5<sup>th</sup>. Singing and breath was a gift from the spirits, and it was in the breath that music was experienced. In the Graeco-Latin age the 4<sup>th</sup> was the experience of the intellect and the spiritual boundary of the human body. In the age of the 3<sup>rd</sup> experience is of the body itself and, with it, appreciation of the subjective differences between major and minor thirds. In the coming age of the 2<sup>nd</sup> humans are in danger of having our spiritual egos annihilated. The density of tones, due to their harmonic interactions, envelops the body. (Cecil Taylor <https://www.youtube.com/watch?v=EstPgi4eMe4>)

This system foresees the music of the future as being a single note in which we can “experience a whole melody.” In a single note we will also know the spiritual meaning that lies behind music. I see this process of knowing the intervals within an octave reoccurring within the single note, because in this note the harmonics will become new intervals that are too subtle for us to use presently.

As a specific example of these changes in interval, meantone temperament was used in Europe from the late 15<sup>th</sup> Century into the 19<sup>th</sup>. This temperament valued the consonance of major 3rds and is tuned to make these intervals sound pure. In utilizing the 3<sup>rd</sup>, perfect 5ths are made to be slightly flat. This is contrasted with the previous age when medieval music valued perfect fifths. The earlier unison chants gave way to the use of parallel 5ths in their performance. I suspect the addition of the 5<sup>th</sup> was related to the development of cathedrals and their richer harmonic resonances.

(Medieval chant in parallel 5ths [https://www.youtube.com/watch?v=IhY\\_N7lp0jE](https://www.youtube.com/watch?v=IhY_N7lp0jE))

Meantone limited which keys could be used and still sound pleasant. In the chart the sacrifices in tuning various intervals can be seen.

<b>Major third</b>	<b>Cents</b>	<b>Perfect Fifth</b>	<b>Cents</b>
C - E	386.3	C - G	696.8
Db - F	427.4	Db - Ab	696.6
D - F#	386.3	D - A	696.5
Eb - G	386.5	Eb - Bb	696.5
E - G#	386.3	E - B	696.6
F - A	386.3	F - C	696.6
F# - A#	427.3	F# - C#	696.5
G - B	386.1	G - D	696.4
Ab - C	427.4	Ab - Eb	737.7
A - C#	386.3	A - E	696.6
Bb - D	386.4	Bb - F	696.6
B - D#	427.4	B - F#	696.6

A pure 3rd=386.3 cents and a perfect 5th=702 cents, then 4 notes have wide thirds (Db, F#, Ab, and B) and Ab has a wide fifth. This leaves 8 consonant keys to write in, each with a particular color or character that was utilized as another layer of transmitting moods.

(Different piano temperaments <https://www.youtube.com/watch?v=TBt6APk21tU>)

There was much disagreement over whether to use ET in Western music. Opponents argued that it was ugly, unnatural, and even unholy. Out of practical considerations of utilizing more of the piano, it was implemented on a wide-scale and is the temperament we largely hear. With the acceptance of ET and the averaging of interval distances, much of the character of each key was lost. Perfect 5ths are now valued over pure 3rds. Comparing the ET C Major scale with just intervals, 3rds are significantly flat while 5ths are slightly sharp. (Cents difference in ET from just intervals: C=0, D=3.91, E= -13.69, F= -1.96, G= 1.96, A= -15.64, B= -11.73) Now composers were able to shift to every key equally well (or equally bad), distributing the gaps in consonance across the octave.

Beginning in 1908, Arnold Schoenberg began composing with an atonal technique, aiming toward the “emancipation of the dissonance.” Romantic music had become more and more chromatic and Schoenberg thought that removing the tonal center was a natural evolution of music.

(<https://www.youtube.com/watch?v=DCB3sHVTzew>)

Many other composers pursued similar directions, among them Dane Rudhyer. In his view the inclusion of dissonance is “identifying opposites; metaphysically it is the power of relating spirit to matter.” Like Anthroposophy, his system also related the complication of musical intervals to the development of human experience. Distinguishing between the peace of reconciliation and the peace of unison, Rudhyer describes our purpose as amplifying our differences in order to more completely describe our common experience. Rudhyer talks of the release of energy when using dissonances, which are intervals with a complex relationship to unity. As the tension between these poles resolves, the energy released “harmonizes spirit and matter and never denies the latter.”

The necessity for additional energy in human development (completing the octave) is also found in Fourth Way systems where conscious shocks are needed at two points of the scale. The first occurs between Mi-Fa and requires conscious labor. This involves the practice of mindfulness and presence in the turmoil of daily life. The second shock, between Sol-La, requires intentional suffering. In this process a person is able to transform negative emotions into positive ones. These shocks seem very close to ideas of therapy, whereby removing trauma can allow us to become present in our lives. This system can be represented in the Enneagram.

Dissonant intervals are presently experienced as those whose overtones do not align in complex

ratios. These intervals are commonly found higher in the harmonic series and are therefore more difficult to distinguish. Equal temperament (ET), as a slightly dissonant system, has opened musical experience to these higher harmonics. With ET the attempt to stabilize a musical system by averaging the intervals coincided with music that sought to eliminate the previous definitions of consonance and dissonance. The development of ET itself came about alongside [a] the evolution of musical instruments (specifically the piano where many intervals are played simultaneously); [b] the secularization of music (the church lost a large degree of control); [c] the Enlightenment's research into physical reality (which effected musical compositions, their tonality and coloration).

Another musical current involves utilizing just-intonation ratios as basic compositional tools. The handling of these new dissonances seems much the same as with the coloration of different keys in the mean tone temperament. Larger tensions are built by the movement and timing that these intervals occur in. (LaMonte Young- <https://www.youtube.com/watch?v=VEwMWIheJkk>)

These current usages of new intervals are found in popular music. Rap music strips away melodic concepts to reveal the intervals in everyday speech. The microtones of speech are utilized to express feeling. (PE <https://www.youtube.com/watch?v=2jc9VeMC6rg>)

Autotune in pop music is used to create more perfect intervals, taking away the imperfections and microtones not in the software's limit.

(T Pain [https://www.youtube.com/watch?v=Wa4vRFv\\_UMw](https://www.youtube.com/watch?v=Wa4vRFv_UMw))

## Bibliography

Gann, Kyle. "An Introduction to Historical Tunings." <http://www.kylegann.com/histune.html>

Hamilton, Elsie. "The Nature of Musical Experience in the Light of Anthroposophy." [www.nakedlight.co.uk/pdf/articles/a-006.pdf](http://www.nakedlight.co.uk/pdf/articles/a-006.pdf)

Huron, David. "Consonance and Dissonance" <http://www.musiccog.ohio-state.edu/Music829B/notes.html>

Isacoff, Stuart. *Temperament*. New York: Vintage Books, 2003.

MacFarlane, Ian C. "Conscious Labor: The First Conscious Shock." [http://www.endlesssearch.co.uk/philo\\_cl.htm](http://www.endlesssearch.co.uk/philo_cl.htm)

MacFarlane, Ian C. "The Second Conscious Shock: From Ouspensky to the Tales" [http://www.gurdjieff-internet.com/article\\_details.php?ID=263&W=40](http://www.gurdjieff-internet.com/article_details.php?ID=263&W=40)

Rudhyer, Dane. "Dissonant Harmony-a new principle of musical and social organization." <http://www.khaldea.com/rudhyar/dissonantharmony.html>

van Laer, Lee. "The Enneagram With Terminology From Gurdjieff's System" <http://www.doremishock.com/enneagrams/enneagramwithgurdjieffterminology.htm>