

Consonance and Dissonance (and Simple Rules for Melodies)

By Dr. Terry B. Ewell

Welcome students! This is your lecture on consonance and dissonance. Consonance literally means “sounding together” or co—sounding. This term is used to describe pitches in music that are pleasant together.

One reason that pitches are consonant is that in nature and acoustics we have phenomena called the overtone series or harmonic series. Any sounding pitch will produce overtones. Most pitched instruments or voices will produce overtones that are primarily composed of consonances.

A Harmonic Series Written as Notes

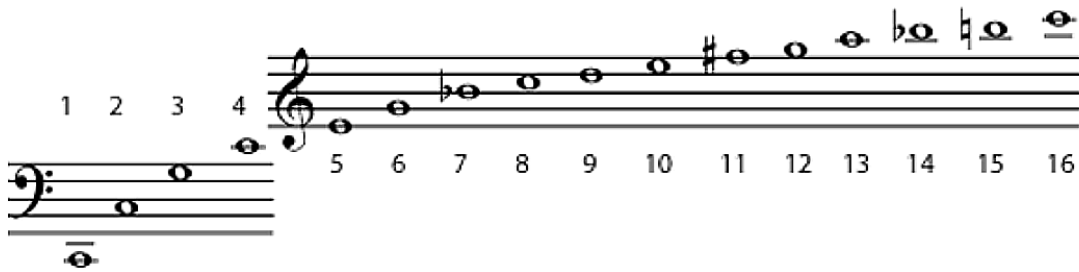


Figure 4.

The overtone series emphasizes octaves, fifths, and thirds. These naturally occurring sounds thus reinforce and agree with other sounds that are at the same pitches.

A Harmonic Series Written as Notes

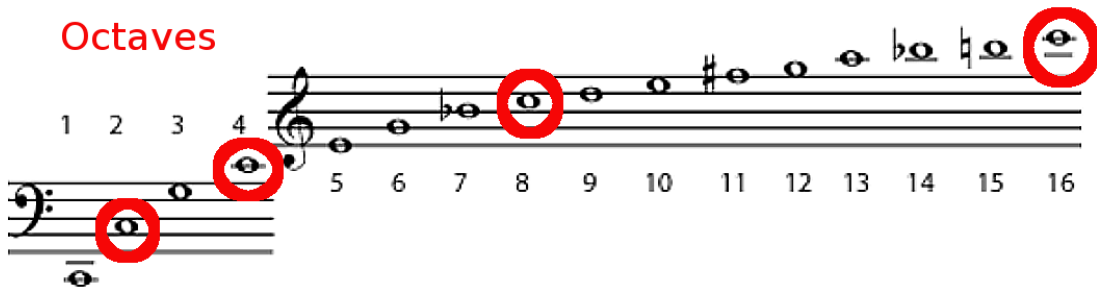


Figure 4.

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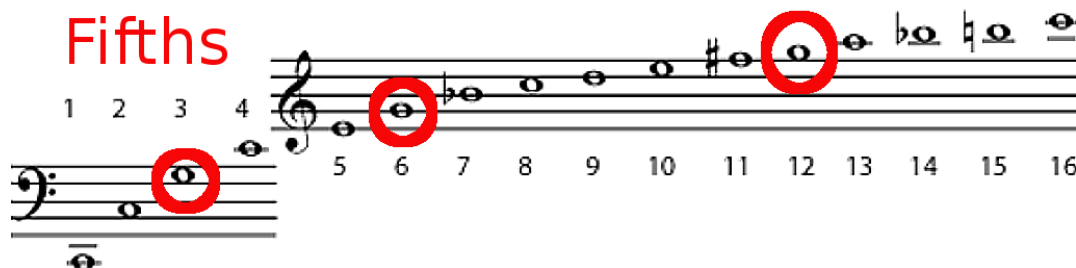


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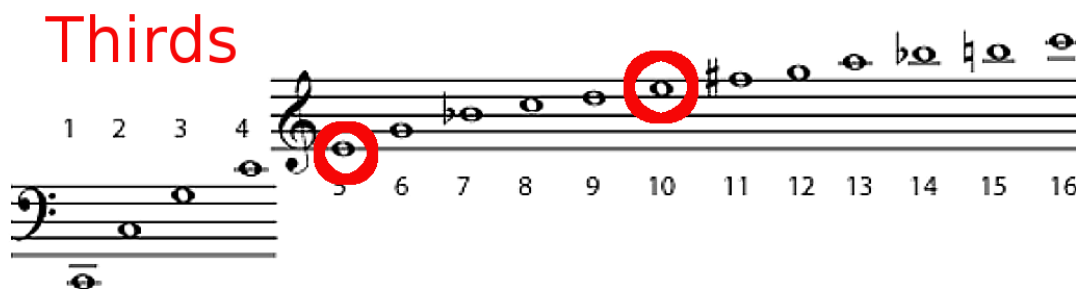


Figure 4.

Let me demonstrate the overtone series and consonance on the piano. The piano has dampers that keep the strings from vibrating, but when a note (key) is held down the damper comes up and the strings under that damper are allowed to vibrate. Let's use this function of the piano to experiment with "sympathetic vibration."

I will first hold down the keys for C4, E4, and G4. This raises the dampers above the strings that are tuned to those pitches. Then I will play a loud C octave below those notes and release it.

<play C octave>

Do you hear the upper pitches? The dampers are down on the lower pitches I played and only open on the upper notes. It is these upper strings that are vibrating. The reason that they are vibrating is that these strings were excited into action because they are the notes in the overtone series of the octave I just played.

Let's hear it again.

<play C octave>

Now, let me hold down the same keys and now play a C# octave.

<play C# octave>

Do you hear the difference? Why is it that the C octave excites the strings for C4, E4, and G4 and the C# octave does not?

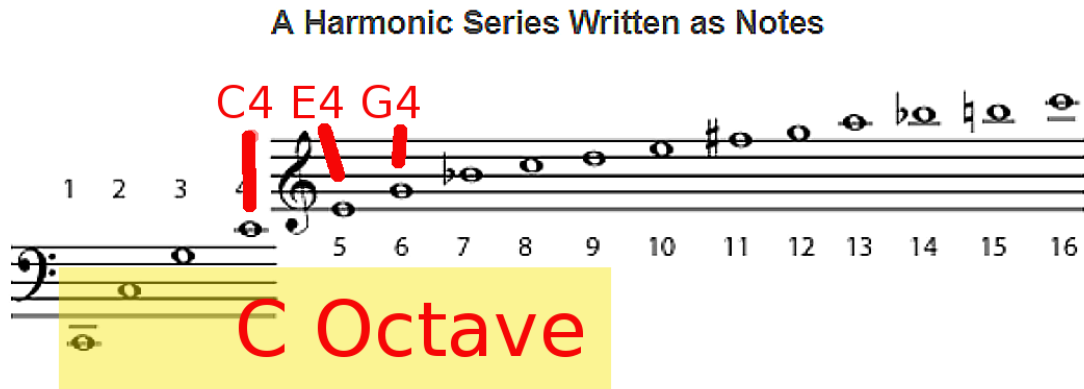


Figure 4.

Well, it is because of the overtone series. When the C octave is playing, the pitches above the notes in the overtone series are sounding as well. The open strings then vibrate in sympathy with the pitches. This is called sympathetic vibration. The C# octaves, however, did not have the same notes in their overtone series so the strings did not vibrate.

Throughout much of the history of Western Music the intervals of an octave, fifth, and third have been given special status and considered consonant intervals.

Even though many composers did not know about the overtone series, they nonetheless could hear how well certain notes fit together. As a result, music was composed to emphasize consonances.

In this course I will simply give the definition of consonance for you. It is a chord tone, one that matches the harmonies given. Any note not in the collection of the chord we will consider a dissonance, a non-chord tone. Let's now examine the context of consonances and dissonances in a melody.

Melodies are fascinating. Just recall some of the melodies you have learned and sung. For instance, you probably know this famous tune "Londonderry Air" also called "Danny Boy."

<Play and show tune in Finale>

Londonderry Air (Danny Boy)

arr. Terry B. Ewell

Oboe

Strings

F Bb

Ob.

Str.

F C

I want you to notice that this excellent melody has features that treat the consonances and dissonances in special ways. The longest value notes are consonant, chord members. Also in general the first and last notes of each phrase are chord tones.

Notice that the melody is a good mix of steps and skips. It can be easily sung. Also the dissonance notes always have a step either before or after the note. They are anchored to a consonant note and musically consider auxiliary to that consonant.

Oboe

Strings

F Bb

step step step step

Keep these things in mind as you use consonant and dissonant notes in your melodies. I look forward to your compositions.

Acknowledgement

Harmonic Series (Figure 4)

<http://cnx.org/contents/VhLlFFhd@20/Harmonic-Series>