Music Fundamentals 4: Intervals

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C O N N E X I O N S

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Chapter 1

Intervals and Inversions[1]

1.1 The Distance Between Pitches

The **interval** between two notes is the distance between the two pitches[2] - in other words, how much higher or lower one note is than the other. This concept is so important that it is almost impossible to talk about scales[3], chords[4], harmonic progression[5], cadence[6], or dissonance (Chapter 3) without referring to intervals. So if you want to learn music theory, it would be a good idea to spend some time getting comfortable with the concepts below and practicing identifying intervals.

Scientists usually describe the distance between two pitches in terms of the difference between their frequencies[7]. Musicians find it more useful to talk about interval. Intervals can be described using half steps and whole steps[8]. For example, you can say "B natural is a half step below C natural", or "E flat is a step and a half above C natural". But when we talk about larger intervals in the major/minor system[9], there is a more convenient and descriptive way to name them.

1.2 Naming Intervals

The first step in naming the interval is to find the distance between the notes **as they are written on the staff**. Count every line and every space in between the notes, as well as the lines or spaces that the notes are on. This gives you the number for the interval.

Example 1.1

[1] This content is available online at <http://cnx.org/content/m10867/2.25/>.
[2] "Pitch: Sharp, Flat, and Natural Notes" <http://cnx.org/content/m10943/latest/>
[3] "Major Keys and Scales" <http://cnx.org/content/m10851/latest/>
[4] "Harmony": Chords <http://cnx.org/content/m11654/latest/#l0b>
[5] "Harmony": Chords <http://cnx.org/content/m11654/latest/#l0b>
[6] "Cadence in Music" <http://cnx.org/content/m12402/latest/>
[7] "Frequency, Wavelength, and Pitch" <http://cnx.org/content/m11060/latest/>
[8] "Half Steps and Whole Steps" <http://cnx.org/content/m10866/latest/>
[9] "Octaves and the Major-Minor Tonal System" <http://cnx.org/content/m10862/latest/>

Counting Intervals

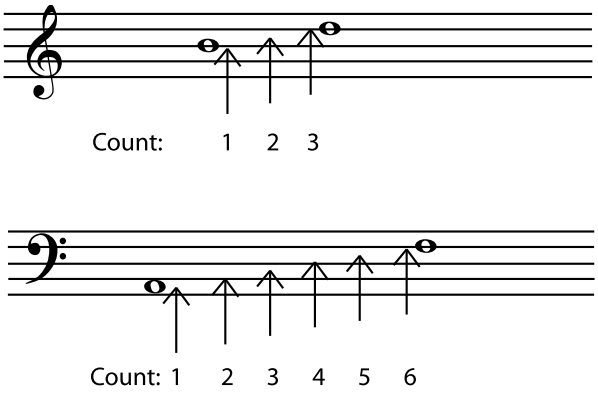

Figure 1.1

To find the interval, count the lines or spaces that the two notes are on as well as all the lines or spaces in between. The interval between B and D is a third. The interval between A and F is a sixth. Note that, at this stage, key signature[10], clef[11], and accidentals[12] do not matter at all.

The **simple intervals** are one octave or smaller.

Simple Intervals

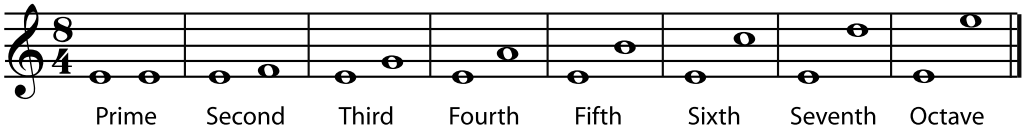

Figure 1.2

If you like you can listen to each interval as written in Figure 1.2 (Simple Intervals): prime[13], second[14], third[15], fourth[16], fifth[17], sixth[18], seventh[19], octave[20].

Compound intervals are larger than an octave.

[10] "Key Signature" <http://cnx.org/content/m10881/latest/>
[11] "Clef" <http://cnx.org/content/m10941/latest/>
[12] "Pitch: Sharp, Flat, and Natural Notes" <http://cnx.org/content/m10943/latest/#p0e>
[13] See the file at <http://cnx.org/content/m10867/latest/prime.mid>
[14] See the file at <http://cnx.org/content/m10867/latest/second.mid>
[15] See the file at <http://cnx.org/content/m10867/latest/third.mid>
[16] See the file at <http://cnx.org/content/m10867/latest/fourht.mid>
[17] See the file at <http://cnx.org/content/m10867/latest/fifth.mid>
[18] See the file at <http://cnx.org/content/m10867/latest/sixth.mid>
[19] See the file at <http://cnx.org/content/m10867/latest/seventh.mid>
[20] See the file at <http://cnx.org/content/m10867/latest/octave.mid>

Compound Intervals

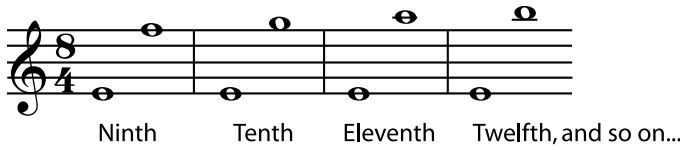

Figure 1.3

Listen to the compound intervals in Figure 1.3 (Compound Intervals): ninth[21], tenth[22], eleventh[23].

Exercise 1.1 ***(Solution on p. 13.)***

Name the intervals.

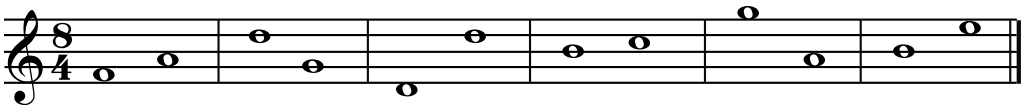

Figure 1.4

Exercise 1.2 ***(Solution on p. 13.)***

Write a note that will give the named interval.

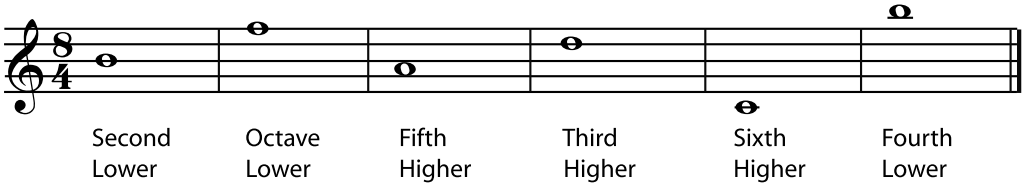

Figure 1.5

1.3 Classifying Intervals

So far, the actual distance, in half-steps, between the two notes has not mattered. But a third made up of three half-steps sounds different from a third made up of four half-steps. And a fifth made up of seven half-

[21] See the file at <http://cnx.org/content/m10867/latest/ninth.mid>
[22] See the file at <http://cnx.org/content/m10867/latest/tenth.mid>
[23] See the file at <http://cnx.org/content/m10867/latest/eleventh.mid>

steps sounds very different from one of only six half-steps. So in the second step of identifying an interval, clef[24], key signature[25], and accidentals[26] become important.

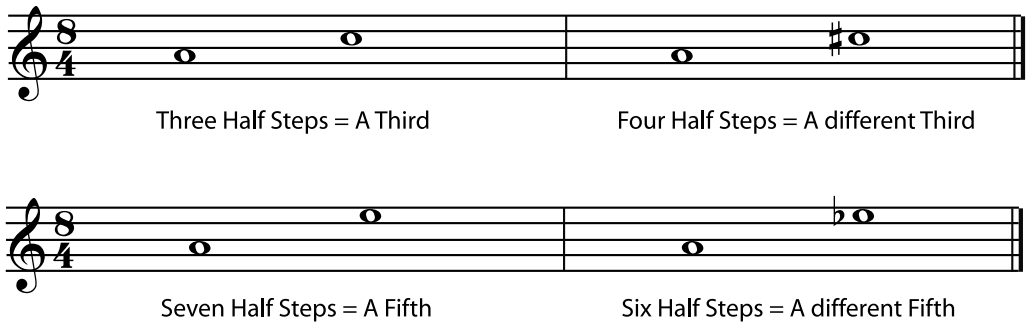

Figure 1.6: A to C natural and A to C sharp are both thirds, but A to C sharp is a larger interval, with a different sound. The difference between the intervals A to E natural and A to E flat is even more noticeable.

Listen to the differences in the thirds[27] and the fifths[28] in Figure 1.6.

So the second step to naming an interval is to classify it based on the number of half steps[29] in the interval. Familiarity with the chromatic scale[30] is necessary to do this accurately.

1.3.1 Perfect Intervals

Primes, octaves, fourths, and fifths can be **perfect** intervals.

> NOTE: These intervals **are never classified as major or minor**, although they can be augmented or diminished (see below (Section 1.3.3: Augmented and Diminished Intervals)).

What makes these particular intervals perfect? The physics of sound waves (**acoustics**) shows us that the notes of a perfect interval are very closely related to each other. (For more information on this, see Frequency, Wavelength, and Pitch[31] and Harmonic Series[32].) Because they are so closely related, they sound particularly good together, a fact that has been noticed since at least the times of classical Greece, and probably even longer. (Both the octave and the perfect fifth have prominent positions in most of the world's musical traditions.) Because they sound so closely related to each other, they have been given the name "perfect" intervals.

> NOTE: Actually, modern equal temperament[33] tuning does not give the harmonic-series-based pure[34] perfect fourths and fifths. For the music-theory purpose of identifying intervals, this does

[24] "Clef" <http://cnx.org/content/m10941/latest/>
[25] "Key Signature" <http://cnx.org/content/m10881/latest/>
[26] "Pitch: Sharp, Flat, and Natural Notes" <http://cnx.org/content/m10943/latest/#p0e>
[27] See the file at <http://cnx.org/content/m10867/latest/twothirds.mid>
[28] See the file at <http://cnx.org/content/m10867/latest/twofifths.mid>
[29] "Half Steps and Whole Steps" <http://cnx.org/content/m10866/latest/>
[30] "Half Steps and Whole Steps" <http://cnx.org/content/m10866/latest/#p0bb>
[31] "Frequency, Wavelength, and Pitch" <http://cnx.org/content/m11060/latest/>
[32] "Harmonic Series" <http://cnx.org/content/m11118/latest/>
[33] "Tuning Systems": Section Equal Temperament <http://cnx.org/content/m11639/latest/#s22>
[34] "Tuning Systems": Section Pythagorean Intonation <http://cnx.org/content/m11639/latest/#s11>

not matter. To learn more about how tuning affects intervals as they are actually played, see Tuning Systems[35].

A perfect prime is also called a **unison**. It is two notes that are the same pitch[36]. A perfect octave is the "same" note an octave[37] - 12 half-steps - higher or lower. A **perfect 5th** is 7 half-steps. A **perfect fourth** is 5 half-steps.

Example 1.2

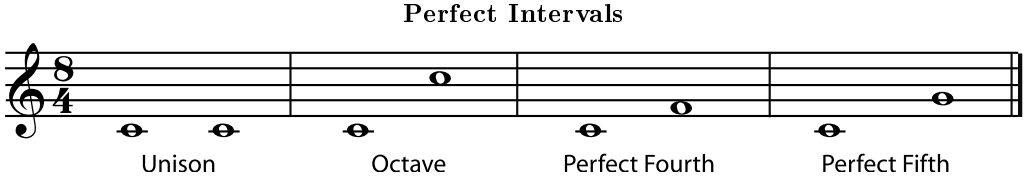

Figure 1.7

Listen to the octave[38], perfect fourth[39], and perfect fifth[40].

1.3.2 Major and Minor Intervals

Seconds, thirds, sixths, and sevenths can be **major intervals** or **minor intervals**. The minor interval is always a half-step smaller than the major interval.

Major and Minor Intervals

- 1 half-step = minor second (m2)
- 2 half-steps = major second (M2)
- 3 half-steps = minor third (m3)
- 4 half-steps = major third (M3)
- 8 half-steps = minor sixth (m6)
- 9 half-steps = major sixth (M6)
- 10 half-steps = minor seventh (m7)
- 11 half-steps = major seventh (M7)

Example 1.3

[35]"Tuning Systems" <http://cnx.org/content/m11639/latest/>
[36]"Pitch: Sharp, Flat, and Natural Notes" <http://cnx.org/content/m10943/latest/>
[37]"Octaves and the Major-Minor Tonal System" <http://cnx.org/content/m10862/latest/>
[38]See the file at <http://cnx.org/content/m10867/latest/P8.mp3>
[39]See the file at <http://cnx.org/content/m10867/latest/P4.mp3>
[40]See the file at <http://cnx.org/content/m10867/latest/P5.mp3>

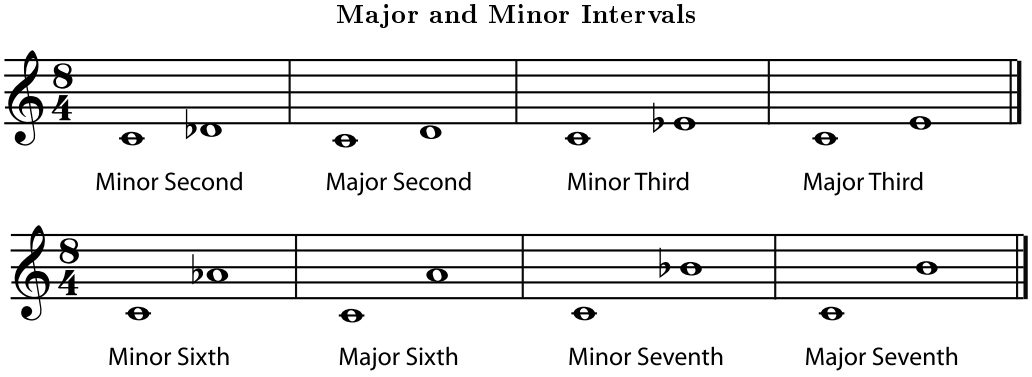

Figure 1.8

Listen to the minor second[41], major second[42], minor third[43], major third[44], minor sixth[45], major sixth[46], minor seventh[47], and major seventh[48].

Exercise 1.3 *(Solution on p. 13.)*

Give the complete name for each interval.

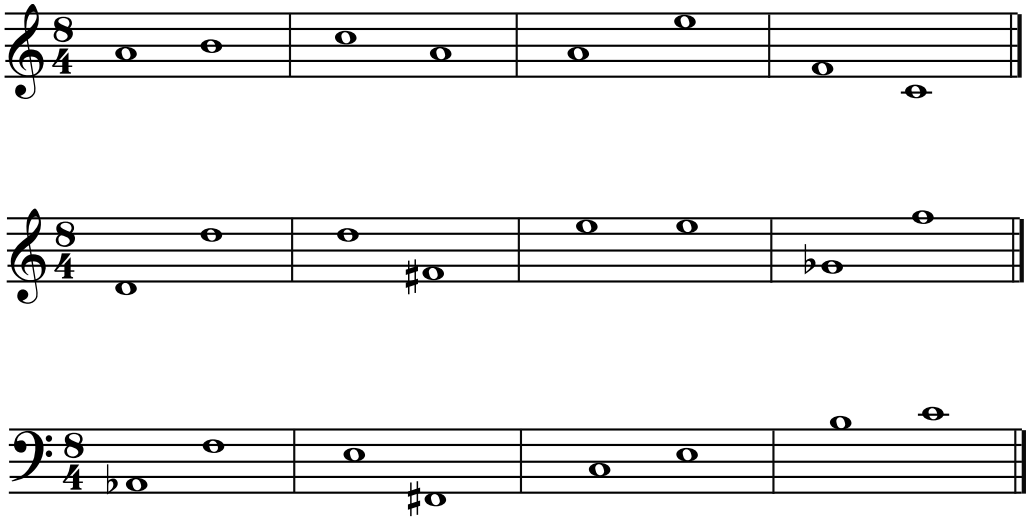

Figure 1.9

[41] See the file at <http://cnx.org/content/m10867/latest/min2.mp3>
[42] See the file at <http://cnx.org/content/m10867/latest/M2.mp3>
[43] See the file at <http://cnx.org/content/m10867/latest/min3.mp3>
[44] See the file at <http://cnx.org/content/m10867/latest/M3.mp3>
[45] See the file at <http://cnx.org/content/m10867/latest/min6.mp3>
[46] See the file at <http://cnx.org/content/m10867/latest/M6.mp3>
[47] See the file at <http://cnx.org/content/m10867/latest/min7.mp3>
[48] See the file at <http://cnx.org/content/m10867/latest/M7.mp3>

Exercise 1.4 *(Solution on p. 14.)*

Fill in the second note of the interval given.

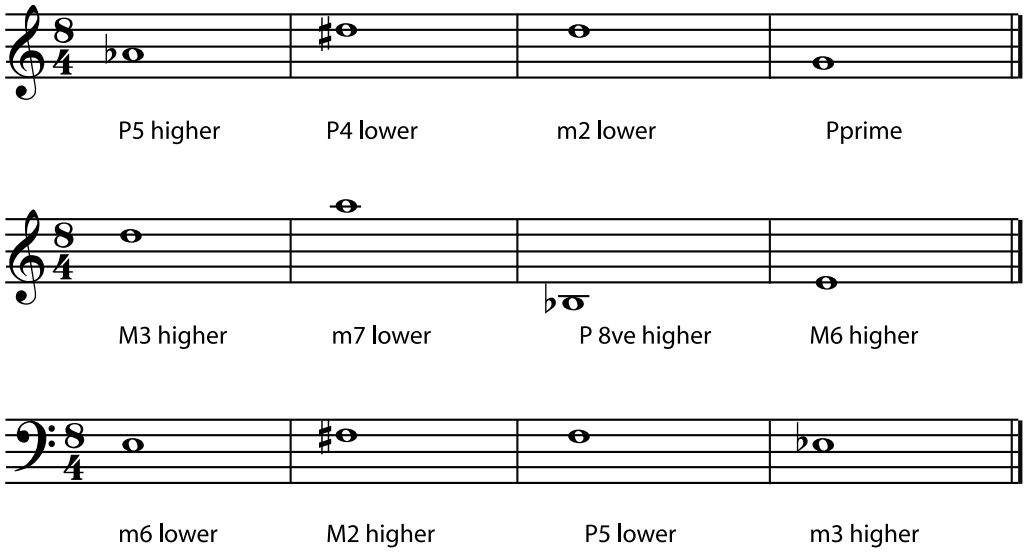

Figure 1.10

1.3.3 Augmented and Diminished Intervals

If an interval is a half-step larger than a perfect or a major interval, it is called **augmented**. An interval that is a half-step smaller than a perfect or a minor interval is called **diminished**. A double sharp[49] or double flat[50] is sometimes needed to write an augmented or diminished interval correctly. Always remember, though, that it is the actual distance in half steps between the notes that determines the type of interval, not whether the notes are written as natural, sharp, or double-sharp.

Example 1.4

[49] "Pitch: Sharp, Flat, and Natural Notes" <http://cnx.org/content/m10943/latest/#p0f>
[50] "Pitch: Sharp, Flat, and Natural Notes" <http://cnx.org/content/m10943/latest/#p0f>

Some Diminished and Augmented Intervals

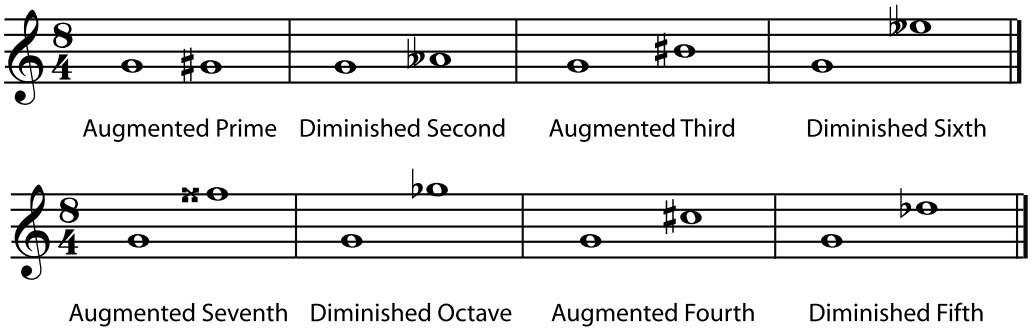

Figure 1.11

Listen to the augmented prime[51], diminished second[52], augmented third[53], diminished sixth[54], augmented seventh[55], diminished octave[56], augmented fourth[57], and diminished fifth[58]. Are you surprised that the augmented fourth and diminished fifth sound the same?

Exercise 1.5 ***(Solution on p. 14.)***

Write a note that will give the named interval.

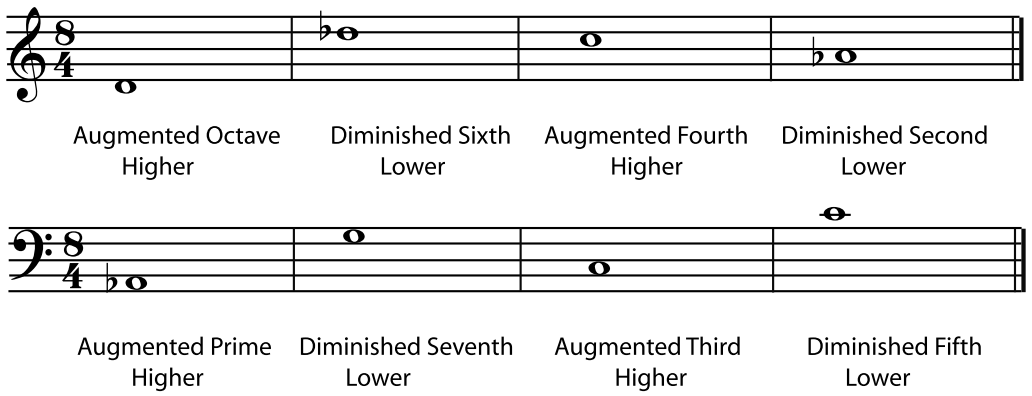

Figure 1.12

As mentioned above, the diminished fifth and augmented fourth sound the same. Both are six half-steps, or **three whole tones**, so another term for this interval is a **tritone**. In Western Music[59], this unique interval,

[51] See the file at <http://cnx.org/content/m10867/latest/aug1.mid>
[52] See the file at <http://cnx.org/content/m10867/latest/dim2.mid>
[53] See the file at <http://cnx.org/content/m10867/latest/aug3.mid>
[54] See the file at <http://cnx.org/content/m10867/latest/dim6.mid>
[55] See the file at <http://cnx.org/content/m10867/latest/aug7.mid>
[56] See the file at <http://cnx.org/content/m10867/latest/dim8.mid>
[57] See the file at <http://cnx.org/content/m10867/latest/aug4.mid>
[58] See the file at <http://cnx.org/content/m10867/latest/dim5.mid>
[59] "What Kind of Music is That?" <http://cnx.org/content/m11421/latest/>

which cannot be spelled as a major, minor, or perfect interval, is considered unusually dissonant (Chapter 3) and unstable (tending to want to resolve (p. 24) to another interval).

You have probably noticed by now that the tritone is not the only interval that can be "spelled" in more than one way. In fact, because of enharmonic spellings[60], the interval for any two pitches can be written in various ways. A major third could be written as a diminished fourth, for example, or a minor second as an augmented prime. **Always classify the interval as it is written; the composer had a reason for writing it that way.** That reason sometimes has to do with subtle differences in the way different written notes will be interpreted by performers, but it is mostly a matter of placing the notes correctly in the context of the key[61], the chord[62], and the evolving harmony[63]. (Please see Beginning Harmonic Analysis[64] for more on that subject.)

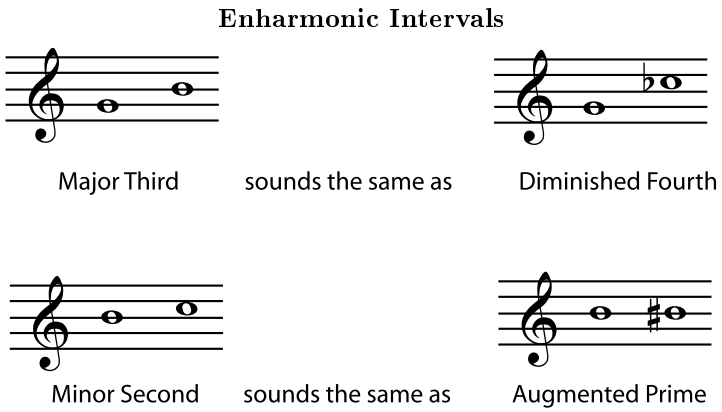

Figure 1.13: Any interval can be written in a variety of ways using enharmonic[65] spelling. Always classify the interval as it is written.

1.4 Inverting Intervals

To **invert** any interval, simply imagine that one of the notes has moved one octave, so that the higher note has become the lower and vice-versa. Because inverting an interval only involves moving one note by an octave (it is still essentially the "same" note in the tonal system), intervals that are **inversions** of each other have a very close relationship in the tonal[66] system.

[60] "Enharmonic Spelling" <http://cnx.org/content/m11641/latest/>
[61] "Major Keys and Scales" <http://cnx.org/content/m10851/latest/>
[62] "Harmony": Chords <http://cnx.org/content/m11654/latest/#l0b>
[63] "Harmony" <http://cnx.org/content/m11654/latest/>
[64] "Beginning Harmonic Analysis" <http://cnx.org/content/m11643/latest/>
[65] "Enharmonic Spelling" <http://cnx.org/content/m11641/latest/>
[66] "Octaves and the Major-Minor Tonal System" <http://cnx.org/content/m10862/latest/>

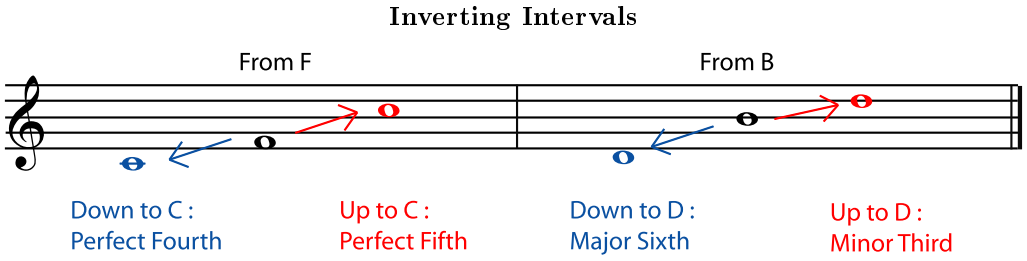

Figure 1.14

To find the inversion of an interval

1. To name the new interval, subtract the name of the old interval from 9.
2. The inversion of a perfect interval is still perfect.
3. The inversion of a major interval is minor, and of a minor interval is major.
4. The inversion of an augmented interval is diminished and of a diminished interval is augmented.

Example 1.5

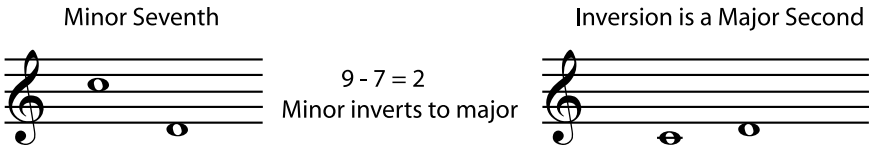

Figure 1.15

Exercise 1.6 *(Solution on p. 15.)*

What are the inversions of the following intervals?

1. Augmented third
2. Perfect fifth
3. Diminished fifth
4. Major seventh
5. Minor sixth

1.5 Summary

Here is a quick summary of the above information, for reference.

Number of half steps	Common Spelling	Example, from C	Alternate Spelling	Example, from C	Inversion
0	Perfect Unison (P1)	C	Diminished Second	D double flat	Octave (P8)
1	Minor Second (m2)	D flat	Augmented Unison	C sharp	Major Seventh (M7)
2	Major Second (M2)	D	Diminished Third	E double flat	Minor Seventh (m7)
3	Minor Third (m3)	E flat	Augmented Second	D sharp	Major Sixth (M6)
4	Major Third (M3)	E	Diminished Fourth	F flat	Minor Sixth (m6)
5	Perfect Fourth (P4)	F	Augmented Third	E sharp	Perfect Fifth (P5)
6	Tritone (TT)	F sharp or G flat	Augmented Fourth or Diminished Fifth	F sharp or G flat	Tritone (TT)
7	Perfect Fifth (P5)	G	Diminished Sixth	A double flat	Perfect Fourth (P4)
8	Minor Sixth (m6)	A flat	Augmented Fifth	G sharp	Major Third (M3)
9	Major Sixth (M6)	A	Diminished Seventh	B double flat	Minor Third (m3)
10	Minor Seventh (m7)	B flat	Augmented Sixth	A sharp	Major Second (M2)
11	Major Seventh (M7)	B	Diminished Octave	C' flat	Minor Second (m2)
12	Perfect Octave (P8)	C'	Augmented Seventh	B sharp	Perfect Unison (P1)

Table 1.1: The examples given name the note reached if one starts on C, and goes up the named interval.

Summary Notes: Perfect Intervals

- A perfect prime is often called a unison. It is two notes of the same pitch.
- A perfect octave is often simply called an octave. It is the next "note with the same name".
- Perfect intervals - unison, fourth, fifth, and octave - are never called major or minor

Summary Notes: Augmented and Diminished Intervals

- An augmented interval is one half step larger than the perfect or major interval.
- A diminished interval is one half step smaller than the perfect or minor interval.

Summary Notes: Inversions of Intervals

- To find the inversion's number name, subtract the interval number name from 9.
- Inversions of perfect intervals are perfect.

- Inversions of major intervals are minor, and inversions of minor intervals are major.
- Inversions of augmented intervals are diminished, and inversions of diminished intervals are augmented.

NOTE: Thanks to everyone who participated in the survey! It was very useful to me, both as a researcher and as an author, to get a better picture of my readers' goals and needs. I hope to begin updating the survey results module[67] in April. I will also soon begin making some of the suggested additions, and emailed comments are still welcome as always.

[67] "A Survey of Users of Connexions Music Modules" <http://cnx.org/content/m34234/latest/>

Solutions to Exercises in Chapter 1

Solution to Exercise 1.1 (p. 3)

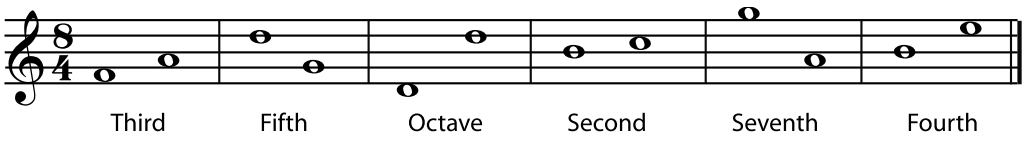

Figure 1.16

Solution to Exercise 1.2 (p. 3)

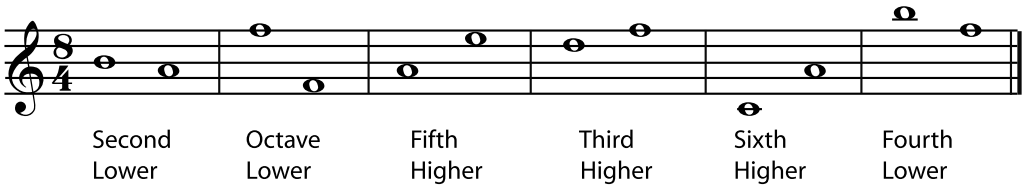

Figure 1.17

Solution to Exercise 1.3 (p. 6)

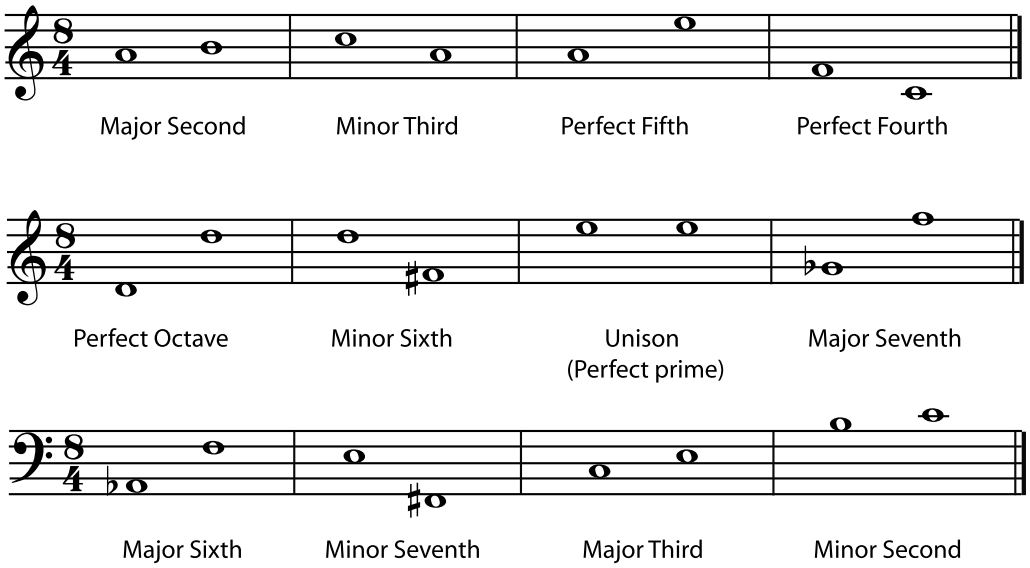

Figure 1.18

Solution to Exercise 1.4 (p. 7)

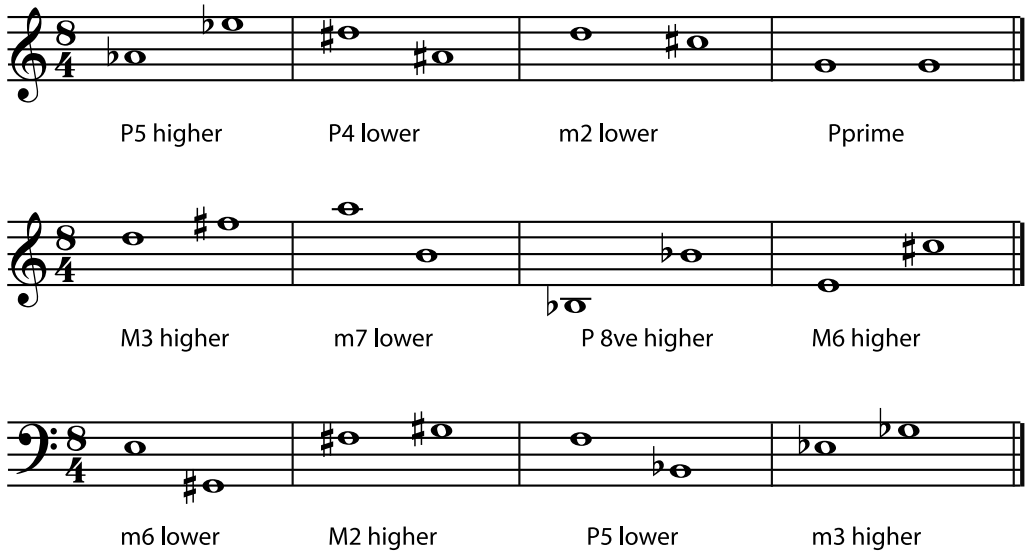

Figure 1.19

Solution to Exercise 1.5 (p. 8)

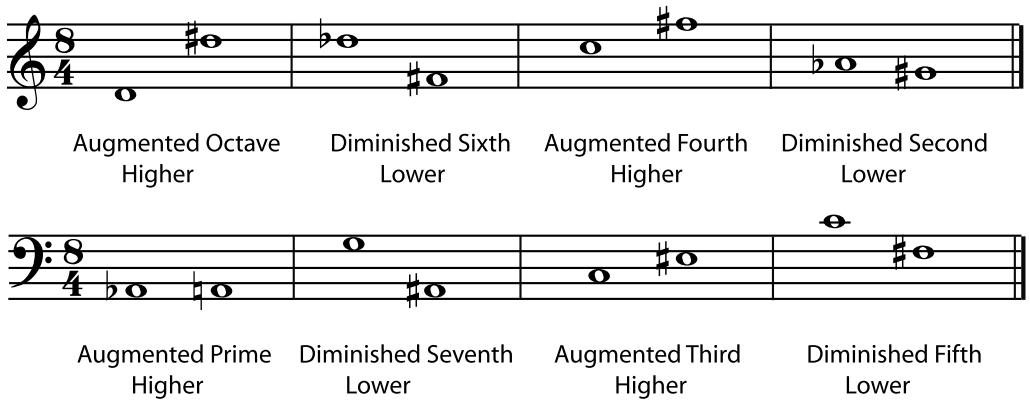

Figure 1.20

Solution to Exercise 1.6 (p. 10)

1. Diminished sixth
2. Perfect fourth
3. Augmented fourth
4. Minor second
5. Major third

Chapter 2

Quickly Recognizing Simple Intervals[1]

Musicians need to be able to quickly recognize intervals in printed music. Counting intervals by half steps is often too slow, particularly with intervals greater than thirds. This module introduces a method that can greatly increase facility with interval recognition.

(This module assumes that you understand how to assign interval numbers and quality. Please see "Interval" by Katherine Schmidt-Jones, module m10867 (Chapter 1), for further reference)

A thorough knowledge of major scales is central to rapid identification of intervals. The quality of the interval between each scale step and the tonic is either major or perfect (Figure 1)

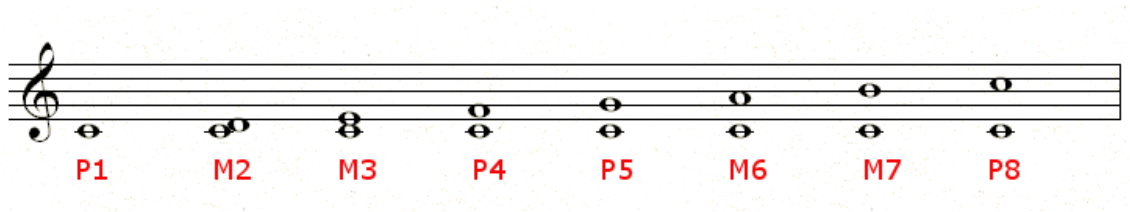

Figure 2.1

In particular, intervals up to a perfect 5^{th} can be quickly recognized through knowledge of the major scales. Scale steps are used as quick reference points with which to compare the intervals. Let's look at some examples to explain how this works.

In Figure 2, consider the lowest pitch the tonic note of B major. Knowing that B major has a C# in the scale indicates to us that C natural is not a major 2^{nd} above B. Since C is a half step below C# the interval is therefore a minor 2^{nd}.

[1] This content is available online at <http://cnx.org/content/m25138/1.2/>.

Figure 2.2

In Figure 3, a D major scale has two sharps, one of which is F#. Since F natural is half a step below F# it must be a minor third above D.

Figure 2.3

In Figure 4, A major has F#, C#, and G# but no D#. D natural is a perfect 4^{th} above A; therefore D# must be an augmented 4^{th} above A.

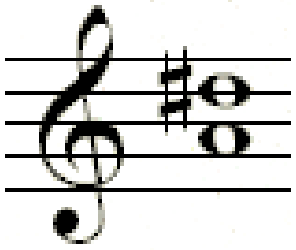

Figure 2.4

In Figure 5, F major has one flat-Bb. Bb is therefore a perfect fourth above F.

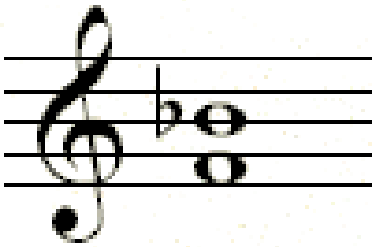

Figure 2.5

In Figure 6, a B major scale requires an F#. F natural, being half a step lower, is a diminished fifth above B.

Figure 2.6

Other "Tricks'

I find classifying intervals of sixths or sevenths more problematic with scales. I often double check my answers by inverting the intervals. For instance in Figure 7, it is not easy for me to quickly recognize the interval D# to B, but B to D# can be quickly recognized. Rules of inversion indicate that a major 3^{rd} inverts to a minor 6^{th}.

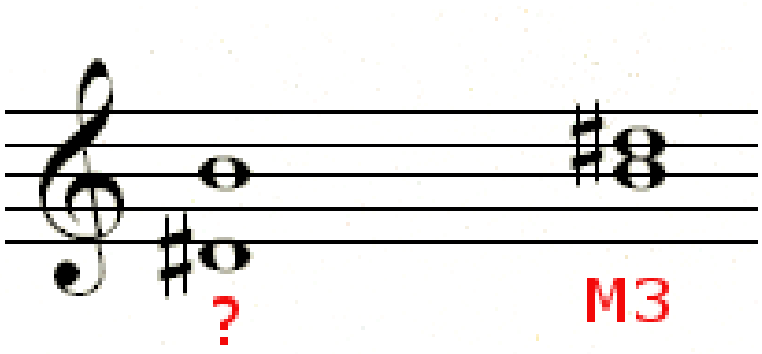

Figure 2.7

Likewise the seventh in Figure 8 is easier to recognize as a second:

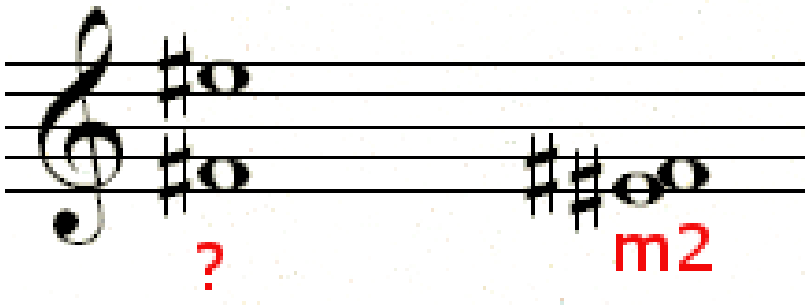

Figure 2.8

Figure 8 illustrates a further "trick." Since both notes are preceded by sharps, one can ignore the sharps and consider the interval to be the same as E to F. This is easier to recognize E to F as a minor second than E# to F#. One may do the same operation if both notes bear flats; consider the interval without the flats present.

Chapter 3

Consonance and Dissonance[1]

Notes that sound good together when played at the same time are called **consonant**. Chords built only of consonances sound pleasant and "stable"; you can listen to one for a long time without feeling that the music needs to change to a different chord. Notes that are **dissonant** can sound harsh or unpleasant when played at the same time. Or they may simply feel "unstable"; if you hear a chord with a dissonance in it, you may feel that the music is pulling you towards the chord that **resolves** the dissonance. Obviously, what seems pleasant or unpleasant is partly a matter of opinion. This discussion only covers consonance and dissonance in Western[2] music.

> NOTE: For activities that introduce these concepts to young students, please see Consonance and Dissonance Activities[3].

Of course, if there are problems with tuning, the notes will not sound good together, but this is not what consonance and dissonance are about. (Please note, though, that the choice of tuning system can greatly affect which intervals sound consonant and which sound dissonant! Please see Tuning Systems[4] for more about this.)

Consonance and dissonance refer to intervals (Chapter 1) and chords[5]. The **interval** between two notes is the number of half steps[6] between them, and all intervals have a name that musicians commonly use, like major third (Major and Minor Intervals, p. 5) (which is 4 half steps), perfect fifth (p. 5) (7 half steps), or octave[7]. (See Interval (Chapter 1) to learn how to determine and name the interval between any two notes.)

An interval is measured between two notes. When there are more than two notes sounding at the same time, that's a **chord**. (See Triads[8], Naming Triads[9], and Beyond Triads[10] for some basics on chords.) Of course, you can still talk about the interval between any two of the notes in a chord.

The simple intervals (p. 2) that are considered to be consonant are the minor third[11], major third[12], perfect fourth[13], perfect fifth[14], minor sixth[15], major sixth[16], and the octave[17].

[1] This content is available online at <http://cnx.org/content/m11953/1.12/>.
[2] "What Kind of Music is That?" <http://cnx.org/content/m11421/latest/>
[3] "Consonance and Dissonance Activities" <http://cnx.org/content/m11999/latest/>
[4] "Tuning Systems" <http://cnx.org/content/m11639/latest/#p11e>
[5] "Harmony": Chords <http://cnx.org/content/m11654/latest/#l0b>
[6] "Half Steps and Whole Steps" <http://cnx.org/content/m10866/latest/>
[7] "Octaves and the Major-Minor Tonal System" <http://cnx.org/content/m10862/latest/>
[8] "Triads" <http://cnx.org/content/m10877/latest/>
[9] "Naming Triads" <http://cnx.org/content/m10890/latest/>
[10] "Beyond Triads: Naming Other Chords" <http://cnx.org/content/m11995/latest/>
[11] See the file at <http://cnx.org/content/m11953/latest/minorthird.mid>
[12] See the file at <http://cnx.org/content/m11953/latest/majorthird.mid>
[13] See the file at <http://cnx.org/content/m11953/latest/fourth.mid>
[14] See the file at <http://cnx.org/content/m11953/latest/fifth.mid>
[15] See the file at <http://cnx.org/content/m11953/latest/minorsixth.mid>
[16] See the file at <http://cnx.org/content/m11953/latest/majorsixth.mid>
[17] See the file at <http://cnx.org/content/m11953/latest/octave.mid>

Consonant Intervals

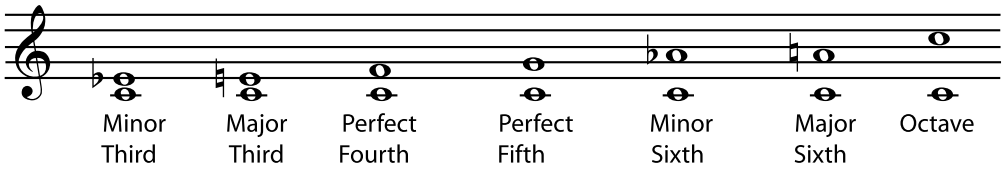

Figure 3.1

In modern Western Music[18], all of these intervals are considered to be pleasing to the ear. Chords that contain only these intervals are considered to be "stable", restful chords that don't need to be resolved (p. 24). When we hear them, we don't feel a need for them to go to other chords.

The intervals that are considered to be dissonant are the minor second[19], the major second[20], the minor seventh[21], the major seventh[22], and particularly the tritone[23], which is the interval in between the perfect fourth and perfect fifth.

Dissonant Intervals

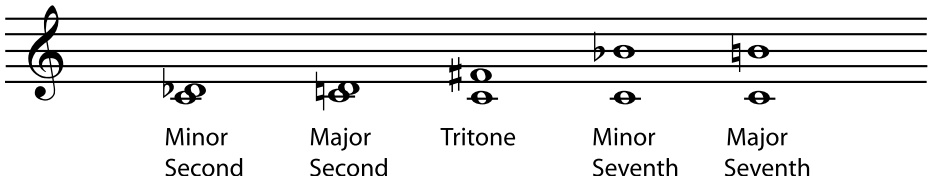

Figure 3.2

These intervals are all considered to be somewhat unpleasant or tension-producing. In tonal music[24], chords containing dissonances are considered "unstable"; when we hear them, we expect them to move on to a more stable chord. Moving from a dissonance to the consonance that is expected to follow it is called **resolution**, or **resolving** the dissonance. The pattern of tension and release created by resolved dissonances is part of what makes a piece of music exciting and interesting. Music that contains no dissonances can tend to seem simplistic or boring. On the other hand, music that contains a lot of dissonances that are never resolved (for example, much of twentieth-century "classical" or "art" music) can be difficult for some people to listen to, because of the unreleased tension.

[18] "What Kind of Music is That?" <http://cnx.org/content/m11421/latest/>
[19] See the file at <http://cnx.org/content/m11953/latest/minorsecond.mid>
[20] See the file at <http://cnx.org/content/m11953/latest/majorsecond.mid>
[21] See the file at <http://cnx.org/content/m11953/latest/minorseventh.mid>
[22] See the file at <http://cnx.org/content/m11953/latest/majorseventh.mid>
[23] See the file at <http://cnx.org/content/m11953/latest/tritone.mid>
[24] "What Kind of Music is That?" <http://cnx.org/content/m11421/latest/#p7d>

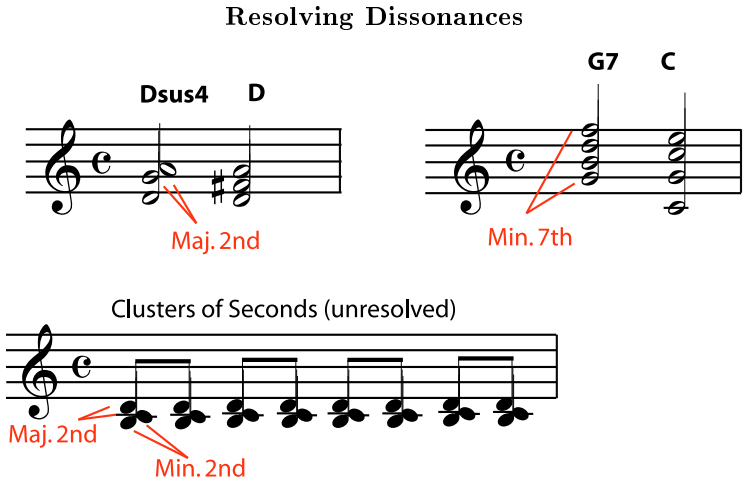

Figure 3.3: In most music a dissonance will resolve; it will be followed by a consonant chord that it naturally leads to, for example a G seventh chord resolves to a C major chord[25], and a D suspended fourth resolves to a D major chord[26]. A series of unresolved dissonances[27], on the other hand, can produce a sense of unresolved tension.

Why are some note combinations consonant and some dissonant? Preferences for certain sounds is partly cultural; that's one of the reasons why the traditional musics of various cultures can sound so different from each other. Even within the tradition of Western music[28], opinions about what is unpleasantly dissonant have changed a great deal over the centuries. But consonance and dissonance do also have a strong physical basis in nature.

In simplest terms, the sound waves of consonant notes "fit" together much better than the sound waves of dissonant notes. For example, if two notes are an octave apart, there will be exactly two waves of one note for every one wave of the other note. If there are two and a tenth waves or eleven twelfths of a wave of one note for every wave of another note, they don't fit together as well. For much more about the physical basis of consonance and dissonance, see Acoustics for Music Theory[29], Harmonic Series[30], and Tuning Systems[31].

NOTE: Thanks to everyone who participated in the survey! It was very useful to me, both as a researcher and as an author, to get a better picture of my readers' goals and needs. I hope to begin updating the survey results module[32] in April. I will also soon begin making some of the suggested additions, and emailed comments are still welcome as always.

[25] See the file at <http://cnx.org/content/m11953/latest/GseventhC.mid>
[26] See the file at <http://cnx.org/content/m11953/latest/DsusD.mid>
[27] See the file at <http://cnx.org/content/m11953/latest/dissonant.mid>
[28] "What Kind of Music is That?" <http://cnx.org/content/m11421/latest/>
[29] "Acoustics for Music Theory" <http://cnx.org/content/m13246/latest/>
[30] "Harmonic Series" <http://cnx.org/content/m11118/latest/>
[31] "Tuning Systems" <http://cnx.org/content/m11639/latest/>
[32] "A Survey of Users of Connexions Music Modules" <http://cnx.org/content/m34234/latest/>

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