The Basics of Figures

WHO SHOULD STUDY THIS LESSON

The following suggestions for how to interpret the figures of a figured bass are directed toward beginners. If you are already advanced enough to realize a figured bass, then you should proceed to a lesson on the Rule of the Octave or cadences, or you might begin a book of Rules (*Regole*).

WHAT YOU SHOULD PROBABLY FORGET

If you have taken one or more courses in harmony, much of what you learned will unfortunately get in your way as you begin to practice partimenti. Harmony courses were designed in the nineteenth century for middle-class amateurs who wanted a course "about" music, but who did not want to spend the years of apprenticeship required to become a professional musician. Believe it or not, thousands of fine composers like Bach, Mozart, Beethoven, Schumann, Brahms, Debussy, Ravel, Stravinsky would have failed a modern collegiate examination in "Harmony 101." They had a sophisticated knowledge of harmony but they never experienced the draconian simplifications of real music that make harmony courses possible (e.g., roman numerals, harmonic functions, etc.). If you can leave those concepts behind, then the world of figured basses will be much easier to understand.

WHAT YOU SHOULD HAVE STUDIED FIRST

You should know the rudiments of music. That includes key signatures, major and minor scales, accidentals, clefs, and intervals. If you are not comfortable with these fundamentals, the lessons on this website may be too difficult.

WHY FIGURES?

In the sixteenth century many cathedrals in Europe would have an organist accompany the choir. Because full scores were vary rare before about 1600, the organist would need to look at the individual partbooks of a composition (i.e., the soprano's part, then the alto's parts, etc.). As the number of voices increased from three or four (ca. 1500) to six or eight (ca. 1600), the organist's task became increasingly difficult. To take the extreme case of a twelve-voice piece set up as three four-voice choirs, the organist could not take any one of the low voices as a foundation because that voice might rest for dozens of measures as the other choirs took the spotlight.

As a first step toward making the job of accompanying easier, the organist might write out a new bass that copied the lowest voice at each moment of a composition, regardless of which of the many parts was singing it. This new bass was nearly continuous and so in Italian it was called a *basso continuo.* The French called it a *basse continue,* the Germans called it a *Generalbass* and the English a *thoroughbass* (meaning the bass continues "throughout" the composition). With a basso continuo as a reliable foundation, the organist could add numbers or "figures" to the bass to help him or her guess which tones were being sung by the choir. A basso continuo with added numerical figures is called a figured bass.

COMPLETE FIGURES VS SHORTHAND FIGURES

Imagine a six-voice composition for which you have written out a basso continuo. Let us further assume that there are 300 notes in that bass. If all six voices sing all of the time there will be five intervals above each tone in the bass. To completely figure this basso continuo you would need to write down 1500 figures (300 x 5). That would be almost as much work as writing out a full score.

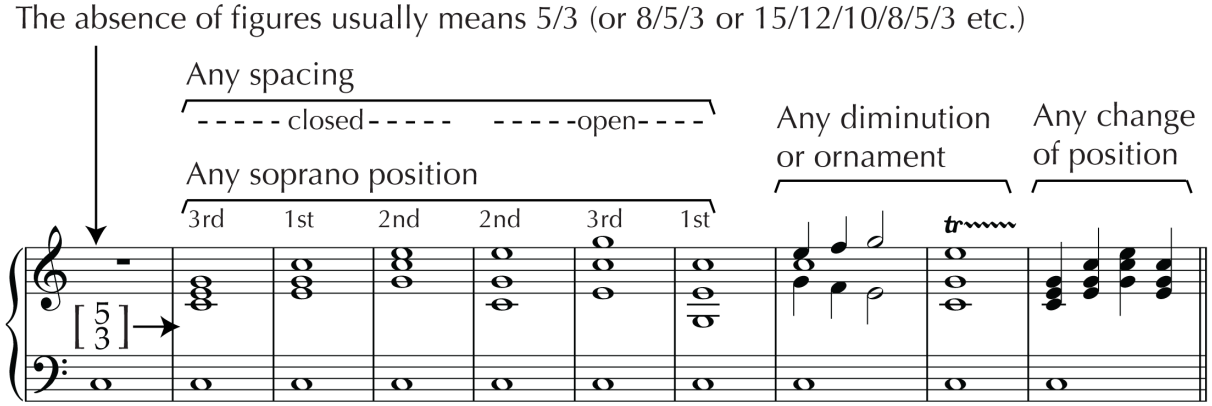
In the world of business, before the advent of recording devices, secretaries "took dictation," meaning that they wrote down documents spoken to them by management. The managers spoke at a normal speed, so it was nearly impossible to write out fully every word. Instead the secretaries learned "shorthand," meaning a system of abbreviating words and leaving out things that could be filled in later from the context. For example, instead of writing three letters for the word "the," one could just make a short curved line. The most common words and the most common spoken sounds were represented by the simplest lines, curves, or special marks.

Organists and other accompanyists did much the same thing with the figures of basso continuo. The most common chord above a bass had the intervals 3, 5, 8 or their octave equivalents (10=3, 12=5, 15 = 8, etc.). Instead of writing 8/5/3 or 3/5/8 above such a common chord the accompanyists agreed to write nothing at all. The next most common chord had the intervals 3, 6, 8. Since that chord differs from the more common 8/5/3 chord only in having a 6 in place of a 5, the accompanyists wrote only a "6" to stand for 3/6/8 or /8/6/3. To further simplify matters, some accompanyists only arranged figures vertically from small to large (e.g., 3/5/8) while others did the opposite (e.g., 8/5/3).

CONVERTING A FIGURE INTO SOUND

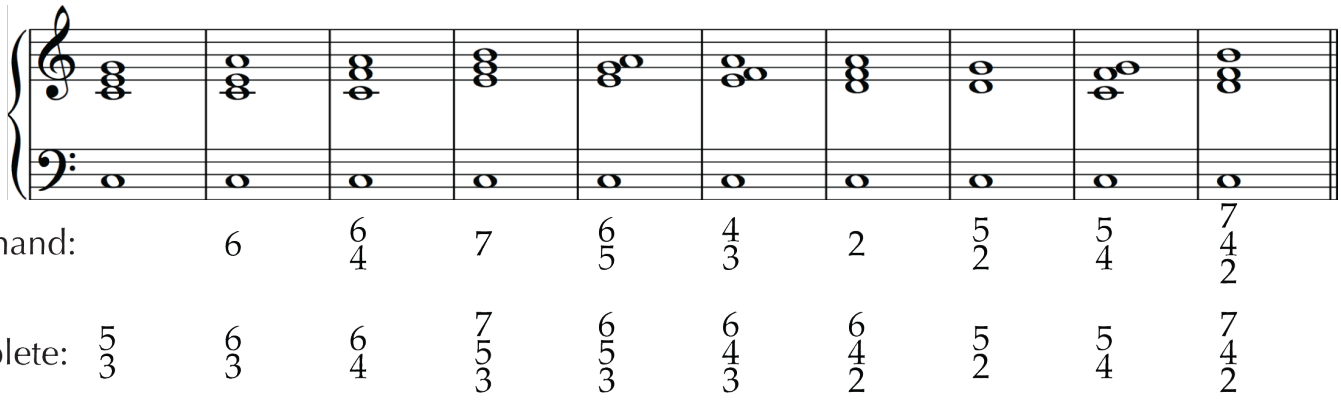
When a beginner sees a figure or several figures, he or she often thinks of single tones in a one-to-one relationship with the specified interval(s). A "5," for example, might refer to a tone a perfect fifth above the tone in the bass. An experienced accompanyist, by contrast, sees a cue to a broad category of possible sounds. Example 1 below shows how the lack of a figure (meas. 1) usually means a "5/3" chord, which can be translated into sound in a host of different ways, depending on the musical style and the immediate context into which those sounds will be placed. Chords can be voiced in an endless array of positions and spacings, subsidiary tones can "diminish" or ornament the chord, and at the keyboard a player can freely change positions, add voices, or subtract them.

Example 1



Example 2 shows how the most common figures are usually an abbreviation or a shorthand of the complete figures. A relatively rare figure like 7/4/2 is usually not abbreviated (see Ex. 2, last measure).

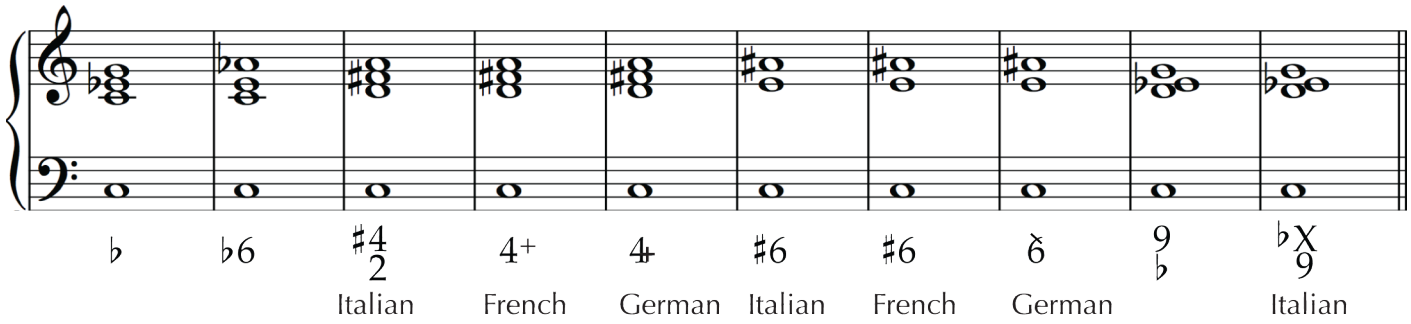
Example 2



Note that all the dissonances in Example 2 are figured even in the shorthand version. Not only are the obvious dissonant intervals of 2, 4, and 7 figured, but also the clashes between upper voices a second or seventh apart, as in 6/5 and 4/3.

Accidentals, as the name implied, may not be predictable and so, at least on their first appearance, must be included in the figures. Example 3 shows many of the shorthand conventions. Obviously an accidental before a number affects that tone in any octave. So a ♯6 raises the tones corresponding to the "6." Less obvious is the rule that an accidental without a following number applies to "3." Thirds (in any octave) are so common above a bass tone that they are usually not figured.

Example 3



French basses, as seen in the fourth measure of Example 3, often indicate a sharp by a plus sign ("+") **when** that tone is the leading tone (❼) in the local key. So a "4+" referring to an F♯ means that the F♯ is ❼ in the key of G. The A♯ in measure seven is not a leading tone, so the plus sign is not used.

German basses often replace the sharp sign with either a vertical line through the horizontal line of a "4," thus creating a type of cross, or with a slanted line through the ascender on a "6."

The next to last measure of Example 3 shows that figures may be written in ascending numerical order (here "9" above the implied flat "3") even when the tones are not in that order (the "9" is lower in

pitch than the "3"). And the final measure of Example 3 shows that Italian basses sometimes write an "X" (meaning the roman numeral "10") above a "9." This brings out the fact that 9s are usually better understood as "2"s (e.g., 10/9) or "7"s between upper voices.

HORIZONTAL LINES

In more complex figures you may sometimes see horizontal lines. These lines refer to an individual part or voice. For instance, "4 — 3" means that a dissonant fourth should resolve to a consonant third within the same voice. Any upper voice will do. But if that voice is the alto, then both the "4" and "3" should be given to the alto and not be separated between different voices. A long horizontal line, one not leading to another figure, means "hold that tone." For instance, "5 ———" means "hold the fifth even as other chords may come and go." One will stop holding that tone at the end of the horizontal line.

SUPERFLUOUS FIGURES

You may remember that a figure like "5" means "play a tone a fifth above the bass or play that tone in any higher octave. So if the bass is a "C," then "5" means a "G" in any octave above the bass. Note that it can also mean more than one "G," which we term a "doubling." When a three-tone chord (e.g., C, E, G) is sung or played in four voices (e.g., bass, tenor, alto, soprano), one of the three tones will always need to be doubled to give a tone to all four voices.

Because octave doublings are always a possibility, you will rarely see the figure "8." That figure would literally mean "double the bass tone so that it also sounds in a higher octave," which does not need to be said because it is always an option.

Sometimes, however, you will see an "8" even though it is superfluous. A superfluous figure (usually an "8," "5," or "3") can be a signal or caution. Here are some common meanings:

1. The superfluous tone overrides what an experienced player might wrongly guess. For instance, a superfluous "5" could mean "From the context, you might think that a 6/3 chord belongs here, but play a 5/3 chord instead."

2. The superfluous tone indicates the preparation for a suspension (i.e., a tied tone that will become a dissonance at the next strong beat). In other words, the superfluous tone is marked because it needs to be present in an upper voice to set up an upcoming event.

3. The superfluous tone indicates the interval at which to begin a melodic motive or subject. This is common in partimento fugues, where the same melodic subject appears in various upper voices.

A FINAL NOTE

If you play from old manuscripts or old editions, do not be surprized if some of the figures are wrong. Music copyists and printers had to work very quickly to meet the demand for new music. They wrote in ink and mistakes were difficult to correct. Yet even if old figures may have mistakes, performers can correct the mistakes if they have a good knowledge of the rules, the local context, and the style. If something sounds wrong, it probably *is* wrong. So don't be afraid to fix it.