

PODCAST #13: VOICE LEADING

Hello. This is the thirteenth in a series of podcasts dealing with different elements of music composition and the first of three podcasts about harmony. Today our subject is voice-leading and I confess that I have been driven to make this podcast by necessity. I have spent so much time in recent years trying to help composition students in this area that I felt compelled to try to deal with the subject in a podcast. Will this end my having to work on voice-leading with composition students? I doubt it. Might it help some young composers and teachers understand the principles of voice-leading and the acoustic and historic reasons for them so they can write and teach more successfully in the future? I sure hope so.

First, a few definitions. Voice-leading is the relationship among various lines in a multi-part harmonic piece of music that is how the voices lead from chord to chord. There are four possible types of motion between any two voices: similar motion, in which two parts go in the same direction but not by the same interval (PLAY SIMILAR MOTION BARS 12-13); parallel motion, in which two voices move in the same direction by the same interval (PLAY PARALLEL MOTION OF A THIRD, BARS 14-15, VLA AND VC PARTS ONLY); oblique motion, in which one voice moves and one remains stationary (PLAY OBLIQUE MOTION BAR 11); and contrary motion, in which voices move in opposite directions (PLAY CONTRARY MOTION BAR 12). Harmony which is effective uses all types of motion as the music progresses.

Next, some history. Today's instruments and most music of the world, past and present, derive from an acoustical phenomenon known as the natural overtone series. Said to have been discovered by the Chinese as much as 3,000 years ago, this series was first noted in the West by the Greek mathematician Pythagoras over 2500 years ago in his experiments with strings and blacksmith's hammers. Simply stated, when an object like a string or a column of air as in a flute or some other instrument is put in motion, we don't hear only the single pitch we think is sounding. In fact, we not only hear the loudest pitch, known as the fundamental, but also overtones, softer pitches which range above the fundamental in a fixed order. The first overtone is a perfect octave above the fundamental, then comes a perfect fifth higher than the previous overtone, then a fourth, then a major third, a minor third, and so on. Not only does the distance between the overtones shrink as the frequency gets higher, the sounds also become softer. Thus the lowest overtones, particularly the octave and fifth, are the strongest.

This is very important for us because it didn't take long for composers to notice something which guided their choices in how to deal with sounds that were played or sung at the same time. Very early Western music of which we have a record, mainly sacred chant, is monophonic, that is, only a single line of music is sung. There is a joke that multi-part singing developed because some monks couldn't match the pitch of the rest and invented a new line by accident. Whatever the reason, early two-voice music began to make its appearance around the 9th or 10th century and it didn't take long for composers to make a fundamental discovery: namely that when two voices sang not just in unison, but in octaves or perfect fifths, the acoustic relationship between the sounds, in accordance with the natural overtone series, caused the sounds to "lock in". As shown earlier, octaves, unisons and fifths are very strong intervals with a close acoustic relationship and composers soon learned that if they created parallel motion between two voices at the interval of an octave or perfect fifth, the two voices no longer sounded as such but the upper voice sounded like an overtone of the lower voice. As a result, from sometime in the 12th century right up to the present, whenever composers have written multi-part music, they have tried to avoid writing parallel motion at the unison, perfect fifth or octave as it destroys a sense of the independence of parts. This is true in 14th century polyphony and music of Schoenberg in the 20th century, vocal music by Mozart and piano music by Chopin. And it's the rock of parallel motion at these intervals upon which many an inexperienced composer's ship runs aground.

Three clarifying points and then to some real music for examples. First, please note that I never said to avoid ALL parallel motion, just that of unisons, octaves and perfect fifths. We hear parallel motion of 3rds and 6ths all the time, but these are acoustically much weaker intervals and don't lock together in the same way as the stronger intervals. Second, don't confuse the idea of parallel octaves or unisons with the idea of doubling a melodic line. In the latter case the composer WANTS a single line for emphasis, whereas with parallel octaves we get a single line without wanting to do so, often to the detriment of the piece. Finally, please remember that I'm talking about parallel MOTION at the unison, perfect fifth or octave, that is, in Chord A two voices are say an octave apart and then they move in the same direction, up or down, by the same interval so that in Chord B they're STILL an octave apart. I'm not advocating never using unisons, perfect fifths or octaves (they're the most powerful intervals we have), just avoiding consecutive parallel use of them.

I discovered today's example somewhat by accident. It's the opening movement from Franz Joseph Haydn's Mass in D minor, the so-called "Nelson Mass", written in 1798 and named soon thereafter for the British Admiral famed for his victory at Trafalgar in the Napoleonic Wars. I've known and loved this work for many years and was looking for an example of oblique motion when I opened the score and found examples of all four types of motion in the first 14 bars. It's not surprising. What is surprising is how a composer who virtually invented so many of the classical music forms in use today from the piano sonata and piano trio to the string quartet (he wrote dozens), the symphony (he composed over a hundred) and sonata form could be undervalued, but today Haydn stands in the shadow of his younger proteges Mozart and Beethoven. Perhaps it's because he was more modest, both personally and in his musical aspirations, than the other two giants. His symphonies aren't generally as long as either Mozart's or Beethoven's, but he is a great example to young composers of how to say a lot while still being economical. His compositional craft is awe-inspiring and his music is often full of humor or in the case of today's example, drama.

So let's examine a couple of samples of his voice-leading. The opening movement of the mass, the Kyrie, uses the simplest possible melodic motif, an octave leap, along with a D minor arpeggio, as its main thematic material. Combining that with an orchestra which consists only of 3 trumpets, organ, timpani and strings where there is a repeated D which sounds in the bass or (briefly) another middle voice for the entire first 25 bars sounds like a recipe for some pretty boring music, right? Wrong! Listen. (PLAY OPENING 50") Of particular interest to us are bars 11-15 where Haydn moves away from block chords, the pedal D and the arpeggio motif to give us some real counterpoint. (PLAY 19"-26"). Did you hear the different kinds of motion? Here's oblique motion in bar 11 (PLAY OBLIQUE MOTION SAMPLE), contrary motion in bar 12 (PLAY CONTRARY MOTION BAR 12 SAMPLE), similar motion (PLAY SIMILAR MOTION BARS 12-13 SAMPLE) and parallel motion (PLAY PARALLEL MOTION OF A THIRD BARS 14-15, ALL PARTS). Notice how smooth and effective it all is? Haydn's such a master he doesn't even break a sweat combining all these different types of motion in five bars of $\frac{3}{4}$ meter. Now to show you how ineffective using strong intervals in parallel motion can be, let's listen to bars 14 and 15 rewritten. Listen especially to the lower two parts, the viola and cello. Here's the bottom two voices in the original (PLAY PARALLEL MOTION OF A THIRD BARS 14-15, VLA & VC ONLY). Now here it is with the original thirds replaced by fifths. (PLAY PARALLEL MOTION OF A FIFTH BARS 14-15, VLA & VC ONLY) and now by octaves (PLAY PARALLEL MOTION OF AN OCTAVE BARS 14-15, VLA & VC ONLY). Now here are the three examples with all voices (PLAY PARALLEL MOTION OF A THIRD BARS 14-15, ALL PARTS; PLAY PARALLEL MOTION OF A FIFTH BARS 14-15, ALL PARTS; PLAY PARALLEL MOTION OF AN OCTAVE BARS 14-15, ALL PARTS). Notice how in the bottom two parts, the viola is now locked to the cello and sounds like an upper overtone when the interval between them is a fifth and both parts sound like a single voice just doubled when it's an octave? With the original third the two voices moved together but because thirds are relatively weak intervals the effect isn't detrimental to independence of the voices as it is with stronger intervals. In four-part harmony each line is precious

as the notes have to make sense as parts of chords but still possess integrity as a line with some sense of independence of motion. Parallel motion at strong intervals, simply put, destroys such independence. But don't take my word for it. Check the harmonic music of masters from Bach to Bartok, Mozart to Mahler and you'll see my point through the almost total absence of the use of parallel unisons and octaves (except to double a line) and perfect fifths.

One other aspect of voice-leading deserves mention. Given that one ideal of voice-leading is smooth, almost seamless changes of harmony, it's important to work to use small intervals going from chord to chord in each voice except when aiming for something dramatic. There are two reasons for this. First, moving by step or small skip from note to note is easier to sing or play than moving by large leap. Second, the more often one leaps from note to note, the more disjointed the music sounds and the more any dramatic effect is lost through overuse. Let's look at the Kyrie once more. Here's the drama of large leap (an octave) in bars 16-21. (PLAY 27"-35") Immediately following that, though, Haydn builds tension in another way, by moving the soprano line slowly upwards chromatically while changing harmony. (PLAY 36"-50") Note how smooth the voice-leading is. Other than the lower three voices leaping up either a third or a fourth from bar 24 to bar 25, every voice moves no more than a step from chord to chord in the entire six-bar sequence. And the drama is reinforced by keeping the pedal D in bass and timpani going. Let's listen again. (PLAY 36"-50" AGAIN)

I just can't let this piece go without playing the climax of the movement. After the section we've just heard Haydn gradually moves into the relative major key with a soprano solo and chorus for the more lyrical middle section of the movement. He then gradually drives the music slowly upward voice by voice and step by step to arrive at D minor for a stirring choral climax of six bars. He then returns to the opening choral octave leap, but this time he ramps up the tension by including a dramatic soprano line soaring above the chorus. In this climactic section Haydn uses so many of the techniques we've discussed in previous podcasts it's hard to enumerate them all, but here are a few of them: modified and imitative use of the original rhythmic motif, use of sequences and a strong bass line to make the harmony progress. In terms of voice-leading, note how he gives the impression of similar motion when imitative voices enter above the existing voice. In fact, once the new voice enters there's little motion of any kind except contrary motion. Haydn saves similar and parallel motion for a time when the music has already arrived at D minor. Let's listen now to the climax of the Kyrie from Joseph Haydn's Mass in D minor with Felicity Lott, soprano solo, the English Concert and English Concert Chorus all under the direction of Trevor Pinnock. (PLAY 2'21"-3'10") I don't know about you, but I get goose bumps every time I hear that.

So let's review what's important about voice-leading. The idea is to get from chord to chord smoothly, saving big leaps for dramatic moments, while maintaining each individual part's independence. This means creating a strong bass line, using mainly steps and small skips in each line and mixing the four types of motion: similar, parallel, oblique and contrary. The most dynamic and powerful type of motion is contrary, the least powerful is parallel. Avoid parallel octaves, unisons and perfect fifths because they weaken or destroy the sense of independence of the individual lines by locking two parts together acoustically so they sound like a single part. The ideal of multi-part writing is to create a texture which expands and contracts, like a person moving and breathing. We can make out the individual features of the face and body but know it all belongs to a single living being. That's what's important and at the same time so difficult about creating multi-part harmonic music: it needs to make sense as a set of independent lines while it makes sense vertically as chords at the same time. Is it hard to do successfully? Sure, but no one said composing was easy. However, with practice and always keeping the above principles well in mind, you too can create dynamic and exciting harmonic music. Next time we'll continue our exploration of harmony with the idea of some dos and don'ts about using chords and their inversions. I hope you can join me.