

What Makes Music Sound Good? (Tymoczko)

Intuitively, some combinations of notes sound better than others. What's the difference between good-sounding and bad-sounding combinations? While we cannot answer this question absolutely (since there's no accounting for taste), we can identify five different properties that are common to a very wide range of styles, from early Medieval music to contemporary popular music. They are:

1. *Conjunct melodic motion*. Melodies tend to move by short distances from note to note. Large leaps sound inherently unmelodic.
2. *Harmonic consistency*. The chords in a passage of music, whatever they may be, tend to be structurally similar to one another.
3. *Acoustic consonance*. Some chords sound intrinsically good or pleasing. These are said to be *consonant*.
4. *Scales*. Over small spans of musical time (say 30 seconds or so), most musical styles tend to use just a few types of notes, between 5 to 8.
5. *Centricity*. Over moderate spans of musical time, one *tonic* note is heard as being more prominent than the others, appearing more frequently and serving as a goal of musical motion.

These five properties make an enormous difference to our immediate experience; in fact, you can take completely random notes and make them sound reasonably musical, simply by forcing them to conform to these requirements.

In this class, we'll think about two different sorts of questions. First, how *in principle* can these various properties be combined? For example, if you want to combine the first two properties (short melodies and chords that sound similar) what sorts of chords should you use? And second, how have previous composers used these different features? We will see that different styles (including Renaissance music, classical music, Romantic music, jazz and rock) all involve slightly different ways of deploying the same basic properties. Thus when you dig deep enough, it turns out that all these different styles exhibit the same basic structure.

There's a reason for this: the five properties constrain each other in interesting ways. Intuitively, you might think that the five constraints could be satisfied in unimaginably many ways, just as you might intuitively think that the universe was filled with habitable planets. But in fact the situation is more interesting than that: the procedures of Western music are much closer to being unique solutions to the basic musical problem of combining the five properties. (Similarly, it turns out that the universe may not contain so many planets that can sustain life, much to the disappointment of science fiction authors.) For instance, if you want to combine conjunct melodic motion with harmonic consistency, it turns out you need to use the acoustically consonant chords of traditional Western music: major triads, dominant seventh chords, and so on.

For essentially similar reasons, much Western music has a kind of hierarchical self-similarity, with the behavior of scales mirroring that of chords. In many Western styles, it is common to switch scales—for instance, the opening section of a piece might use the white notes C-D-E-F-G-A-B while the next section uses the G major scale G-A-B-C-D-E-F#. We can understand this process by saying that the note F *moves up* to F# by a short distance. This is basically the same thing that happens when one chord moves to another, though now on the level of the scale rather than the chord.