Order vs. “Octave”

(a note about why I write the word octave in quotes)

Pitches which stand in the ratio of 2:1 are generally called “octaves.” The word “octave” literally means “eighth.“ An “octave” is only literally an “eighth“ interval in the context of a seven tone musical structure such as the Western diatonic scale. Research in ethnomusicology has proven that this paradigm does not apply to the majority of the world’s music. Moreover, it is obvious from everyday experience that there need not be seven fixed pitches; there may be any number of pitches, and this number need not be fixed. Some instruments are in fact built to produce seven fixed pitches, but almost all conventional Western musical instruments are built to play twelve pitches within one “octave,” which shows that the term “octave” is in fact somewhat inconsistent with modern Western musical practice.

I propose that the term “octave” should be restricted to discussions of music specifically involving a seven tone paradigm. This would include all pitch systems which maintain the seven letter model for naming pitches. For musical discussion pertaining to pitches in general, especially large numbers of pitches outside of a letter naming system involving the seven letter model, a general term referring to pitches standing in the relation of 2:1 should be used.

What term can be used instead of "octave"?

The term *diapason* is an obvious choice, because it has been used historically to represent 2:1 and is in fact still in limited use today among organists. However, this term is unlikely to be generally accepted for the simple fact that *diapason* has four syllables while “octave” has only two. Because it is longer and more difficult to spell and pronounce, though trivially so, there is no hope of *diapason* becoming standard terminology for the interval 2:1.

I propose a term which is as simple to use as “octave” and stresses the psychological effect of the interval 2:1. This term is **order**. The interval 2:1 defines the fundamental cyclic ordering property of pitch, against which all other intervals are measured; therefore 2:1 can be called the order by which all pitches are defined. It follows that wherever the term “octave” is currently used, it can replaced with the term order.[1] Thus, a pitch occurs within a given order. Likewise an instance of 2:1 is an order, etc.

The term order for 2:1 facilitates discussion of harmonics as higher or lower order, which is a turn of phrase already in use. For example, 3 is lower order harmonic than 13. A harmonic series begins with a zeroth order harmonic at 2 (simply called the order) and proceeds into infinity. 3 is the only first order harmonic, 7 is one of the two second order harmonics, 13 is one of the four third order harmonics, and so on. Each harmonic order **y** contains $\mathbf{2^y}$ harmonics. The idea that every harmonic has a *place* within an *order* as a means of discussing all pitches is developed in my 1999 paper *A Theory of Infinite Harmonics*.

back to ideas

[1] It is of course entirely appropriate to use the term “octave” when referring to Western music composed within the historical context of the octave; however, the term is neither appropriate to the discussion of nonwestern musics, nor is it appropriate to the general discussion of pitches and intervals.