

MU301 • Materials and Techniques of Post-Tonal Music

Atonal analysis/Set theory

There are five beginning steps to analyzing music in free atonal style:

- 1) **SEGMENTATION** This refers to the process of breaking down the composition into groups of notes that will be analyzed. Look for logical groups of notes: voicings that seem to be consistently used, melodic ideas and intervallic patterns that recur, and so forth. Segmentation can be a trial and error process. For our purposes you should **use your musical intuition** to make decisions about logical groups of pitches that might prove to be important in the design of the piece.
 - 2) **NORMAL ORDER** Using staff paper, place the segmented notes into a “scale” structure with the first and last notes the same. Remember you will eventually discard any repeated notes in the set. Analyze each interval between the successive notes of the scale. The top note of the largest interval is the first note of the normal order. If there are two intervals that are largest, then the normal order will be the sequence of pitches with the smaller interval between the first and next-to-last pitches. Look for “scrunched” arrangements of pitches. Tighter “scrunchiness” is the criteria for determining normal order. Get in the habit of also analyzing the set’s inversion. To do so, leave the first and last notes the same **but reverse the order of intervals** in the internal notes, then apply the “scrunchiness” test.
 - 3) **INTERVAL VECTOR** - (Interval class vector) The IV is a numerical description (in mathematical terms, an array) of the interval content of the set. Use the six interval classes to determine this. Determine the intervals between the first pitch and all others. Determine the intervals between the 2nd pitch and all others, and so forth. Tally the intervals in this order: ic1 = m2 & M7, ic2 = M2 & m7, ic3 = m3 & M6, ic4 = M3 & m6, ic5 = P4 & P5, ic6 = tritones.
- To be sure that you have accounted for all the intervals of the set, use the algebraic formula $N = (n^2 - n) / 2$, where N = the number of intervals and n = the number of notes in the set.
- 4) **PRIME FORM** Transpose the best normal order so that the first pitch is C. Think carefully here.
 - 5) **FORTE CODE** Use the chart in the textbook to find the prime form and interval vector. If the set has 5 pitches, for example, the Forte code will label the set 5-x. Circle the set on the score and label it by the code.