

## Composition: Electronic Media I

Fall 2010

### Actions on Sound-classes and gestures

1. Consider a gesture made of sound-classes Q, R, S, T, U, V, W.
  - a. These sound-classes may overlap or sometimes sound simultaneously.
  - b. For the sake of this discussion, assume that Q begins before R, R begins before S, etc.
  - c. The gesture may be varied by changing its pitch by 3 semitones, resulting in Q+3, R+3, S+3, T+3,...
  - d. When each sound-class is transposed by the same number of semitones, this is called a *rigid* transformation.
  - e. Transpositions in 12-tone music are rigid (in pitch-class space, not pitch space, as will be discussed in class).
  - f. Rigid transformations are often used to preserve the musical character of a motive or phrase.
  
2. The transformation shown in Item 1c, above, can be viewed in two ways.
  - a. First, the transposition +3 can be understood to act on each sound-class Q, R, S, ...
  - b. Second, the transposition +3 can be understood to act on the gesture  $A = Q, R, S, \dots$
  - c. The action of transposing individual sound-class independently often results in a *non-rigid* transformation.
  - d. An example of a non-rigid transformation is Q +1, R-2, S+0, T+2, ...
  
3. Non-rigid transformations of a gesture permit inversions and multiplicative transformations to occur, as shown below.
  - a. The inversion of a non-rigid transposition is given by changing the + sign to -, and the - sign to plus.
  - b. Q +1, R-2, S+0, T+2, ...  
12-1, 12+2, S-0, T-2,...

conditions for inversion to occur.