

## 025:250 COMPOSITION: ELECTRONIC MEDIA I

Fall 2012

### Long Sounds

1. Consider the following long sounds produced on acoustic musical instruments.
  - a. In electronic music, students have a tendency to use very long sounds. In acoustic music, long sounds are actually relatively short, as shown below.
  - b. At mm. = 60, one bow stroke at forte comfortably lasts 4 beats, or 4 seconds.
  - c. At mm. = 60, breath of a wind or brass instrument comfortably lasts 6 beats, or 6 seconds.
  - d. At mm. = 60, a piano note in the lowest register at forte decays to almost silence over 12 beats, or 12 seconds.
  - e. The note C1 played fortissimo on the piano decays to 50% of its original loudness in 1.0 seconds, 25% in 1.5 seconds, and 10% in 3.0 seconds.
  - f. The note C2 played fortissimo on the piano decays to 50% of its original loudness in 0.7 seconds, 25% in 1.2 seconds, and 10% in 2.0 seconds.
  - g. The note C3 played fortissimo on the piano decays to 50% of its original loudness in 0.3 seconds, 25% in 0.7 seconds, and 10% in 1.5 seconds.
  - h. Some guitar players on electrics use a variety of methods to sustain the length of a held note, as discussed in class. Topics of this discussion include the structure of the guitar, design of amplifiers, overall loudness, vibrato produced by pushing and pulling a string so that it rubs against a fret, similar to a violin bowing motion, compressors, gainy amp settings, bloom and note-flipping in some circuits, feedback, violin bow, and E-Bow.
2. In electronic music, long sounds exert a great deal of expressive force, which can create compositional problems, discussed below.
  - a. The expressiveness of a long sound of a certain pitch, loudness, and timbre, will tend to dominate the emotional structure of the passage in which it occurs.
  - b. To lessen the emotional domination by a long sound, try the following:
    - i. Keep the sound as short as necessary. A long sound should generally not exceed 4-5 seconds, except in exceptional circumstances, such as in the music of Lamont Young and other drone minimalists.
    - ii. Keep the sound as soft as possible. Generally, after 1-2 seconds, consider reducing the volume to 25-50%. This will keep the sound from masking other sounds in the passage.
    - iii. Vary the loudness and pitch of a long sound, to keep it alive sounding. Automated volume is useful, as is using the pitch graphing feature of Serato Pitch n' Time.
    - iv. Consider cross-fading two or more sounds of the same pitch, but of a different timbre, to prevent the sound from seeming mechanical.
    - v. Consider combining 2 or more sounds of different pitch to create a harmonious or chordal effect.
    - vi. Consider combining 2 or more sounds of slightly different pitch (+/- 3-8 cents) to create a chorus effect, as heard in a choir or string section.
3. Techniques for creating long sounds.
  - a. Record a long sound, or download one from the internet, especially the University of Iowa Musical Instrument Samples.
  - b. Time expand a short sound, either by keeping the original pitch, or by using a varispeed transformation, which lengthens a sound while lower its pitch.
  - c. When keeping the original pitch, use Serato Pitch n' Time Pro to expand the length of a region at any desired pitch.
  - d. When using the varispeed method, consider using an extreme high pass filter to reduce or eliminate low frequencies that naturally occur in varispeed downward pitch shifts.
  - e. Make several non-literal copies of a shorter sound and crossfade it using 2 or more tracks.
  - f. Apply a very long reverb to a shorter sound.
4. The techniques above will be demonstrated in class.