

Composition: Electronic Media II

February 13, 2008

Recording and Manipulating Instrument Recordings

1. String instrument body taps:
 - a. Location on body: head, neck, fingerboard, top of body, side of body, back of body.
 - b. Force applied by: fleshy part of fingertips, outer side of thumb, knuckles; bow is a possibility, but may damage the body.
 - c. Responds well to varispeed pitch shift up and down.
 - d. Highpass filter will bring out high resonances.
 - e. In Pro Tools, edit into sweeping lines, moving up and down in register as part of overall ascent or descent.
 - f. Organize into quasi-drumsets, with each hit acting the role of a bass drum, high-hat, snare, etc.
 - g. Creates excellent long reverb tail.
 - h. Too short and indistinct in pitch to be very useful as source or impulse in convolution. However, an extremely resonant hit might be a good impulse if you wish to pass through a wide range of instrument source sounds. This would act to unify these sounds.
2. String instrument pizzes:
 - a. Experiment with different types and locations on string.
 - b. Pizz followed by gliss is very effective.
 - c. Tremolo pizzes.
 - d. Chord pizzes.
 - e. Responds well to varispeed pitch shift up and down.
 - f. Highpass filter will bring out high resonances.
 - g. In Pro Tools, edit into sweeping lines, moving up and down in register as part of overall ascent or descent.
3. String glisses:
 - a. Arco and pizz
 - b. Give player specific intervals (they tend to end on octaves).
 - c. Experiment with speed and contour of speed.
 - d. Double-stop glisses.
 - e. Varispeed will sound fine at low speeds; at medium high speeds, effect can awkward; at very high speeds takes on birdlike character.
 - f. Glisses make very good sound masses.
4. Bow effects:
 - a. Tremolo sounds best on double stops—tend to be thin and weak on single notes.
 - b. Bouncing, sliding, and other types of motion are very effective.
 - c. Battuto col legno (hitting with the wood) sounds great, but may damage the bow.
 - d. Pencils can be used for Battuto col legno.
 - e. Highpass filter can remove unwanted low thumpiness.
 - f. Varispeed up acts to unify discrete attacks; varispeed down becomes rhythmic—highpass filter needed on low varispeed bow effects.
5. Vocalizing:
 - a. Sing into body on fixed pitch to find resonances.
 - b. Sing glisses into body to create fixed filter effects.
 - c. Sympathetic string vibration—try using chords.
 - d. In Pro Tools, try to minimize sound of voice—usually not as interesting as the resonances are.
6. Wind instrument multiphonics:
 - a. Responds well to varispeed. Low playback bring upper overtones down into the audible range. Apply a high pass filter to those.
 - b. Stack several multiphonics together like a chord.
 - c. Crossfade between several sustained multiphonics.
 - d. Multiphonics make excellent percussive hits. Short the length and do a very quick fade out. Sharpen the attack.
 - e. Use a slice of a multiphonic as an impulse for convolution.
7. Key clicks:
 - a. With and without breath.
 - b. A jumble of clicks is useful.
 - c. Single clicks should be recorded one at a time, with the mic volume high enough to capture the sound.
 - d. See the section on string pizzes for processing and mixing

8. Breath, reed, and tonguing:
 - a. Flutter tongue
 - b. Squeaks, honks, pops
 - c. Attacks of pitched notes
 - d. Adjust the recording level to capture all of the nuances of these effects.
 - e. These will be very useful as attacks in shading sounds in Pro Tools
 - f. The white noise component needs to be attended to, since white noise can mask other sounds. Low pass filter will help focus these sounds.

10. Pitched sounds:
 - a. Glisses and bends.
 - b. Finger tremolos.

11. Percussion instruments:
 - a. See the sections on body taps, pizzes, and key clicks.
 - b. Loud attacks produce very different sounds than soft attacks, so watch the mic level.
 - c. Percussion surfaces sound produce distinctly different sounds in the center of the surface than on the edge. Attend to nodes that will occur in geometrical patterns. Playing on the node will be dead, so try to play between nodes.
 - d. Mallets, mallets, mallets.
 - e. Rolls, fast, slow, speed contours.
 - f. In Pro Tools, smoothing over an attack by fading in will produce a novel effect.

12. Brass instruments: see woodwinds.
 - a. Lip and mouthpiece effects.
 - b. Glisses

13. General considerations:
 - a. Control rhythm by having musicians play in metrically related ways.
 - b. Control pitch by:
 - i. writing out passages
 - ii. instructing them to play freely using a given set of notes, a scale, or by leaving out certain notes
 - iii. write out contours, indicating up and down over time, starting note, ending note, high and low notes.
 - c. Encourage gestural playing that smears notes together; these sounds are difficult to create from single-note recordings.

14. If your material can be described in html text, consider putting your samples on the EMS website. The sounds need to be clearly identified.

15. Other techniques not described above:

Selected readings in instrumental performance techniques, notation, and acoustics.

Backus, John. *The Acoustical Foundations of Music*. New York: Norton, 1977. ML3805.B245 A3 1977

Bartolozzi, Bruno. *New Sounds for Woodwind*. London; New York: Oxford University Press, 1982.
MT339.B29 N5 1980

Dick, Robert. *The Other Flute: a Performance Manual of Contemporary Techniques*.
New York, N.Y.: Multiple Breath Music Co., 1989. MT340 .D48 1989

Karkoschka, Erhard. *Notation in New Music; a Critical Guide to Interpretation and Realisation*.
New York: Praeger, 1972. FOLIO MT35.K185 S313

Olson, Harry F. *Music, Physics and Engineering*. New York: Dover, 1967.
Permanent Reserve ML3807 .O4 1967.

Risatti, Howard Anthony. *New Music Vocabulary: a Guide to Notational Signs for Contemporary Music*.
Urbana: University of Illinois Press, 1975. ML431 .R6

Rossing, Thomas D. *The Science of Sound: Musical, Electronic, and Environmental*.
Reading, Mass.: Addison-Wesley Pub. Co., 1982. PHYSICS Library QC225 .R67
ML1092 .S84 1983

Strange, Patricia. *The Contemporary Violin: Extended Performance Techniques*. Berkeley: University of
California Press, 2001. ML857 .S77 2001

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