

DESN 275 Digital Sound Week 3

Linked Reading: Noise Reduction Tools and Techniques. Also on "web resource links," watch the videos of Adobe Audition noise reduction tools.

Also there are several good links to vocal or voice recording that will answer the study questions and improve your recordings.

The first two activities below can be done either with Audacity or with Adobe Audition. The Audition software is available in the lab, and for your own computer through EWU. (Enquire at the help desk)

Since there are a number of files to turn in this week, please include your name and a clear indication of which assignment number it is. Putting them in a "Week 3" folder as some of you are already doing, would be a good idea.

Assignment 1: Remove a furnace noise

Use Audacity or Adobe Audition to remove the sound of the furnace from the background of the first 25 seconds or so of the guitar track. Try not to diminish the sound of the guitar. Turn it in as an MP3.

Assignment 2a and 2b: Fix a sound file

Reduce/Remove the fan noise from the waitress scene dialog track. This will be worth the most points because the track has serious problems.

As discussed in class there are a number of tools that might work, and often can be used together, including:

- 1 • Simply reducing the level of noise between blocks of dialog, section by section with Effect > Amplify with -dB settings.
- 2 • Finding a narrow band of frequencies to cut with EQ.
- 3 • Using the Effect > Noise Reduction tool.

Turn in two versions, one that emphasizes noise reduction (but still with acceptable *intelligible* dialog), and a second one that maximizes dialog quality while achieving noticeable noise reduction. Trim away the long pauses and directors instructions, leaving about 20 to 30 seconds with all the important dialog. Put "mostReduction" and "bestDialog" in the file names and turn in as MP3s.

Assignment 3: Remove unwanted noises from a guitar concert track

Use Adobe Audition to remove the sound of the thump and cough in the background of the track. Turn it in as an MP3.

Assignment 4: Remove a latch noise

Use Adobe Audition to remove the sound of the squeaky door in the background of the track. Turn it in as an MP3.

Assignment 5: Prepare dialog for an ad. You are given a rough section of dialog that must be edited. It needs to have:

- Unnecessary parts cut out, (engineer's interruption, repeated dialog, etc)
- Any unnaturally long pauses shortened,
- Any quiet parts boosted so all the phrases seem to be all at an even level.

- Then add a little compression, about 3 dB reduction, to the whole dialog.

Try these compression settings:

Threshold -28 dB, Noise Floor -65 dB

Ratio: 2:4, Attack .2 sec, Release 1 sec

Turn OFF Make-up gain for 0 dB

- Bring the level back up to about 60% (Normalize)
- Finally, make it fit into a 30 sec (exactly) spot.

In Audacity, you will use Select > At Zero Crossings, Edit > Cut and Paste, Effects > Amplify, Effects > Change Tempo, Effects > Compressor, and if you think it needs it, Effects > Equalization. Turn it in as an MP3.

Assignment 6: Record (We may postpone this)

Get your recording system up and running on your own computer. (Please avoid the mistake of accidentally using the computer's built-in mic!) Record a 20 second interview avoiding plosive pops, clipping, or room reflections.

Questions from Linked Reading

Noise-reduction Tools and Techniques

Gates are only really effective on what kinds of noise problems?

When is the complete removal of noise counter-productive?

Masking works only when the frequency range of unwanted noise matches what?

Wednesday, January 12, 2011

A usb mic (microphone)

What typical problems come up when using noise "fingerprints" or "prints" to guide digital noise reduction software?

A narrow filter can be used to cut unwanted hum frequencies. Why is a "narrow" filter best?

Why is "amp buzz" not a simple EQ problem?

What are the basic pieces of advice given at the end of the article?

What does a spectral Frequency Display show?

How does Audition's Auto Heal work?

What is a noise print?

Why would you want to record a few minutes of "no dialog" while recording dialog in the field?

Digital Recording Signal Flow

What are typical options for using a microphone to record on a computer?

What happens when a signal level is set too high?

How can you "see" if the level is too high?

When setting levels, what is "headroom"?

What does each of these do?

A preamp

An analog-to-Digital converter

An audio Interface

A mixer

* What do you have to do to get a computer to record with an audio interface? This is not an exact list for every situation, but all these steps are done sooner or later.)

1 Turn on the computer and audio interface

2 Open the software app

3 Check or set the session parameters, bit depth, sample rate (44.1K for most audio, and 48K for film) Does the interface support your choices?

4 Create a new track and name it.

5 Put the track into "record pause" by clicking the red button (also called "arming it").

6 Make certain the correct input is selected

7 Plug a mic into the interface and adjust the preamp gain. If it is a condenser mic, turn on phantom power after connecting the mic.

8 Make certain the level isn't set too high (clipping) or too low (noise)

9 Press the record button and record the track.

10 Unarm the track.

11 Listen to the track. If you cannot hear it, change the app or the computer preference to the correct output.

13 Adjust the monitor or output volume (usually found on the interface)

What is the difference between peak and RMS recording level meters?

How can you tell if a cable is balanced?

Why do you want to use balanced cables?

What is a boundary microphone? What are the advantages?

How do you decide how close a microphone should be to the talent?

What is a shock mount good for?

What are a couple ways to reduce plosive pops?

What does normalization mean?