DESN 275 Digital Sound for Week 2

Resources • Read *A Virtual Room with Reverbs* on the Audacity web site. Additional links are found on "web resource links" on drbraukmann. See the section on EQ and Reverb.

Assignment 1: Create a Scene

Using object sounds from the course website, plus music (also available on course website), and short dialog tracks in the assignment files link, create a sound track for the following sound-only scene. You are giving Dr. Braukmann a tour of a building, and he provides comments as you two walk along.

1. Start with typical street ambience. Nothing special or unusual is heard: just typical cars and street sounds. We hear a character's footfalls (for about 10-12 seconds). After about 12 seconds, a door (#1) opens.
2. Footfalls are heard as our walker steps inside a large quiet reflective space, like a small gym. The door closes behind with gentle echos of the door closing. Long reverb time here.
3. Footsteps are heard as we walk slowly through the large room (about 50' square) with hard surfaces such as concrete or hardwood (about 12 seconds total walking time). After about 5 seconds, his voice is heard near the listener (about 5 ft away), and then he speaks again at twice as far away. Then we walk on. The reverb effects on the voice tracks make it seem like we are in this type of room.
4. Then a door (#2) is opened into a wood-paneled and carpeted hallway. Footfalls are heard as the walker moves down the hallway. Dr. Braukmann comments. Very quiet, muted and indistinct music is heard coming from behind a closed door at the other end of the hallway (use EQ). In this hallway, there will be a small amount of first reflections, some short, some longer, and a touch of reverb. The music will gradually become louder as the walker approaches another door.
5. A latch is turned and the door (#3) is opened allowing the music to be heard more clearly as we enter the room. Also we hear the sounds of many people partying (use more than one track). This chamber has mixed hard/soft surfaces (typical acoustic tile ceiling, hard dance floor, etc.) surfaces. People's bodies soak up reverberation sound. So it has a *little* reverb, and a little quick early delay (almost so little you don't notice it.) The people's voices further away have less low and high frequencies than the people close to walker (use EQ). Dr. Braukmann asks a question, and then we through the club for about 10-12 seconds.
6. Another latch is turned and a door (#4) opens out into the street. The sound of music and the party folks is diminished as the door (#4) closes behind the walker. The muted sounds of the music then die away completely as the footsteps of the walker proceed down the street. (About 8 seconds)
7. The same ambience is heard as in the opening of the scene. The street ambience continues for about 5 seconds until it fades.

Craft requirements for Assignment 1:

• Avoid footfall sounds that have a “built-in” room sound. Don't create unrealistically loud footfalls.

• Reverb needs time to complete the envelope. You may have to insert ("Generate" in Audacity) some silence right after the foot falls, *before* you apply the reverb, in order for the reverb not to be cut off too soon. An easy way might be to lay out all the footfalls in one track, and then Track > Mix and Render that track, before applying reverb.

• Estimate for a large room about 50ft. by 50ft. Use reverb, delay, and possibly EQ.

• As doors close, the acoustics change. The door slam is being heard in the new space. So put the door closing sound in the new space.

• "Muted and indistinct" music would be dramatically limited in frequency range, especially lacking upper frequencies, because it is heard through a closed door.

• Always use short fades on all sound elements, even if the fades must be very quick.

• A "softer" room such as the carpeted hallway would not have nearly as much delay or reverb.

• Don't rush the transitions. Take a few seconds to set the scene. It takes time to open and walk through a door.

Assignment 2: You are given two Robert Goulet songs that your grandparents like. They sound very different in frequency balance. Use EQ to make them sound as much the same as possible. Especially try to make Robert's voice sound the similar in both. Yes, it can't be perfect because the voice is mixed in with the instruments. But sound jobs are seldom ideal. Change both songs. Make the first sound like the second, and then make the second sound like the original first. Turn in one mp3 track that has about 10 seconds of each song in *this order*: song 1 original, song 1 changed, song 2 original, song 2 changed.

Study Questions EQ

What is a plug-in?

What extension does a Mac plug-in file have?

What is actually happening when a sound is equalized?

What are common uses for EQ in our mixes?

If you are increasing the Q of an equalizer band, what are you actually affecting?

What is a shelf in an EQ?

What exactly does a low-cut filter do?

What exactly does a high-cut filter do?

How can you best use an EQ to create a clear, more-defined mix? A: *Use subtractive EQ on what you <u>don't</u> need to hear, rather than boosting everything you do want to stand out*.

Which frequencies generally apply to the following adjectives? (Answers given)

Airy – breathy – Chimey - 10K Hz
Bigger – fatter – 100 Hz
Boxy – hollow – 300-700 Hz
In your face – 1000 Hz
Muddy – Boomy 100-300 Hz
Muffled – too much 100-250 Hz
Nasally – too much 500-3K Hz
Sibilance – 4K-10K Hz
Thin – too much above 4K Hz
Tinny – too much 2K-7K Hz
Warm – abundant 100 – 400 Hz

What are the three stages of a sound in a space?

Sketch an envelop of a sound in a space. Where would you mark "direct sound", "first reflections" and "reverberation"?

Describe *Reverb time*.

Describe *Early reflections*.

Describe *Damping*.

Describe *Delay*.

Describe *Bandwidth*.

Describe *Dry – Wet balance*.

Describe *Hall, room, plate reverb types*.

Describe *Echo*.

What physical characteristics of a room affect reverb time?

How would you describe the reflections/reverb for a small room? A large room? A room with hard surfaces? With soft surfaces?

Why might you want to EQ the *reverb*?

Does reverb change the original sound? Explain

Study Questions from Audacity Guide – Reverb

What is an "early reflection"?

How should Reverb Time be set for a small room?

Which size rooms need a bigger pre-delay, large or small? A: *Large because the reverb doesn't start until the first delay or echo makes it back to our ears.*

What does a *dampen* parameter do?
A: *Reduces the high frequencies in the reverb.*

What do Wet and Dry refer to?

When using reverb in Audacity, why does the author advise putting a 100% wet reverb on it's own track? How do you do that?
A: *On it's own track, the level can always be readjusted. First duplicate the track you want to add reverb to. Then add the reverb to the duplicated track at 100% wet.*

Questions *on Psychoacoustics and dB*

What options would make a particular sound seem loud to a listener?

What options do you have to fix sound masking in a mix?

Why do we use dB to measure loudness?

What is the smallest dB change in loudness that a person can generally detect?

How many dB decrease would make a sound seem like it is coming from twice as far away?

How many dB boost would make a sound seem twice as loud?

What is the useful (to you) difference between a meter showing RMA levels, or one showing Peak levels?

What are the four parts of a sound envelope called?