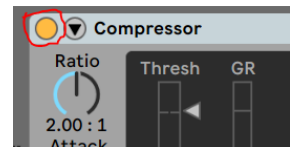


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Recording and Mixing PART 3:
Compression

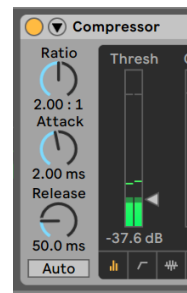
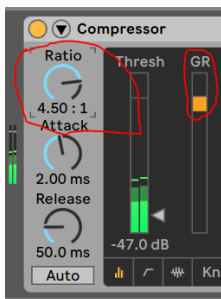
COMPRESSION

The main use of compression is to **constrain the dynamic range** of an audio signal. You probably found that on most of the tracks in the session, finding a perfect static fader position was impossible. There were moments where something was too soft or too loud. Compression can be a useful tool to level out these issues - literally! **Note:** be sure to read the chapter on compression in your book before beginning this process.

1. Please **load** your completed PART 2 assignment. Continue from your Ableton session to complete this assignment.
2. First go to the file menu and “Save as” to create a new project file for “PART 3.”
3. Let’s begin with the **drums**. Using the Ableton browser, add the **Compressor plugin** to the **DRUMBUS** channel.
4. Explore some of the compression **presets** like “Brute Compression” or, “Flattener” (**careful, this one is LOUD!**). After loading various presets, you may need to **lower the threshold setting** to get the plugin to activate. Later, once you get the hang of using the compressor you might choose to use compressors on the individual drum tracks.
5. In the browser, double-click the root Compressor folder to reload the Compressor’s **default setting**. Using **Mixing Secrets of the Small Studio** (MSFTSS) Chapter 9 for reference, explore **Threshold, Ratio, and Makeup Gain**. For each adjustment you make, it is important to bypass the plugin and listen carefully to how the compression is changing the sound. It is just as important to adjust the Make Up Gain to level match the compressor with the unprocessed sound.
6. First **pull down the Threshold** so it crosses the peak amplitude on your DRUMBUS. Whenever the incoming signal crosses above the threshold, the compressor “activates” and reduces the gain.



7. Next adjust the **Ratio**. The higher the ratio, the more the gain is reduced **downward towards the Threshold setting**. The **GR (gain reduction) meter** gives you visual feedback, showing you exactly when the gain is being reduced. Note when the incoming signal passes back below the Threshold, the gain stops being reduced. This all happens very quickly, up and down, based on the amplitude of the incoming DRUMBUS.



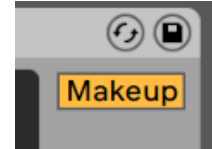
Think about when you are driving a car, or watching Netflix. You may turn the volume down when the show gets too loud, and back up when the volume gets soft again. The compressor works the same way, on a micro level, adjusting the volume up and down very quickly based on your settings.

The result is a more “even,” less dynamic, volume output.

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8. By now you are probably wondering, why is the output getting louder when I lower the Threshold and increase the Ratio? “I thought I was turning the volume **DOWN??**”

Most compressors have something called **makeup gain**, which **automatically increases the final output** the more you compress the signal.



Since the compressor **lowers the volume on only the “loud” parts of our signal**, the overall output level is both lower and more even (it has less dynamic range). The makeup gain uses this newly available headroom to raise the overall output.

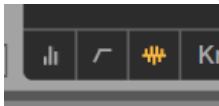
Try turning off the makeup gain to hear the signal with only the compressor’s gain reduction; the signal should be much quieter. I would recommend leaving this off and adjust the makeup gain manually, so that the level is matched when you toggle the Compressor’s **Bypass** button. This will produce more accurate results and avoid the “louder is better” bias that can occur when comparing two signals.

Often times the goal of bus, or group compression is to glue together a bunch of sounds, which can have the effect of making a group of individually miked sources feel more cohesive.

9. Next explore how you can use **Attack, Release, and Knee** to further control the result. The **Attack** value lets you control **how fast** the compressor reduces the volume towards the Threshold value based on the Ratio setting. The **Release** value lets you control **how fast** the compressor increases the volume back to normal when the incoming signal passes below the threshold.
10. Go through sections 9.2.4 & 9.2.5 and experiment with the settings described in the book.
11. Next try **parallel compression** as described in section 9.3. You can do this by using the Mix knob in the Compressor plugin.



12. Experiment until you feel that the settings sound right for your mix! Also check out the other views built into Ableton’s compressor, which give you different visual output.



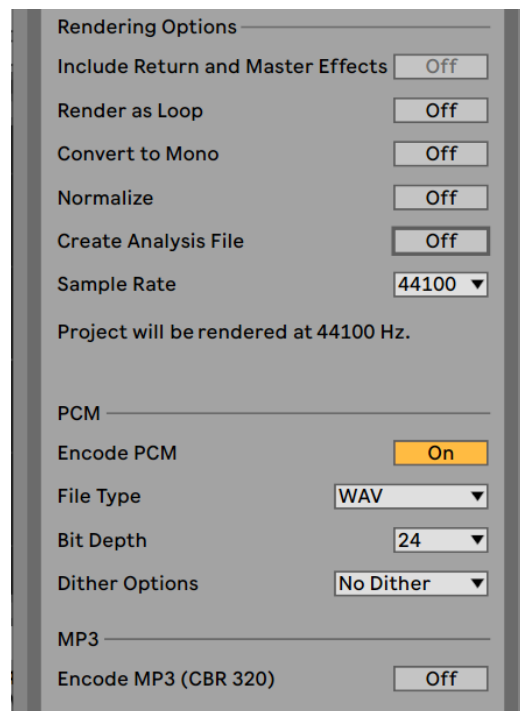
Now let’s try the **Vocals**.

1. Refer to the process on page 183 in MSFTSS, for Lead Vocals. Generally, the goal with compressing lead vocals is to make each line clear so the singer can be understood. It can also be distracting if the vocals are leaping out of the speakers one moment, and then hiding behind the rest of the music. Let’s begin with the lead vocal in the final chorus. Add the Compression Plugin after the Townsend Plugin and any HP Filtering EQ’s you have added.

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2. As you work, manually adjust the **Makeup Gain** to level balance the processed sound with the unprocessed sound. It is difficult to know if your settings are improving the mix, as we are generally biased towards the louder sound! Experiment until you feel that the settings sound right for your mix.
3. Follow Steps 5-9, as outlined above for the drum section, to find an appropriate setting for the vocal compression. The goal should be to improve the dynamics so the vocal feels better balanced against the other instruments, while maintaining a good clean sound and avoiding any negative compression artifacts.
4. Continue this process for any remaining tracks that feel too dynamic for the mix. Remember, dynamics are an important part of music and not every track calls for compression! We are mainly looking for tracks where an overly dynamic performance interferes with the instrument being heard properly/musically within the composition.

Now that you have explored compression, please “bounce” your mix down to a stereo wav file to submit. Use the Ableton file menu → “Export Audio/Video” to create a **44100Khz, 24 bit bounce**, using the same settings as PART 2:



Please name your bounced file **“yourname_PART3.”**

Before submitting, LISTEN through your ENTIRE BOUNCE file to check for any problems!

UPLOAD your wav file to the Dropbox link on the assignment page.