

Mixing

THTR 286 Fall 2024

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What is mixing?

- ▶ Mixing is the process of combining multiple audio tracks into a single track, adjusting levels, panning, and adding effects to create a balanced and cohesive sound
- ▶ Mixing involves fine-tuning elements such as volume, equalization, reverb, and compression to enhance the overall quality and clarity of the audio
- ▶ The goal of mixing to ensure that all elements of the audio blend harmoniously and suit the intended aesthetic or production requirements.

Key Elements for Mixing

▶ Level

- ▶ louder components of the mix grab the listener's attention more than the quieter components. We adjust the levels in the mix to sound cohesive together.



Key Elements for Mixing

▶ Pitch Correction

- ▶ Pitch correction, or vocal tuning, is the process of modifying the original pitch of an instrument to “correct” it and make sure it fits within the key of the song.



Key Elements for Mixing

▶ Sound Field (Panning)

- ▶ Panning refers to the horizontal (left/right) placement of sounds within a stereo mix. By panning one to the left and the other to the right, you can separate the two instruments and reduce the chance of one instrument masking the other, and making it harder to hear.



Key Elements for Mixing

▶ Equalization

- ▶ EQ can be thought of as a more detailed level control that lets us boost and cut levels at specific frequencies. EQ is the easiest way to shape the tracks in your mix so they fit together—and provides a powerful way to add personality and character to the individual tracks.



Key Elements for Mixing

▶ Audio Dynamics

- ▶ Audio dynamics are a major part of mixing that includes a host of processors (compression, expanders, gates) that change the volume of a sound over the course of its lifespan. Dynamics are a huge part of a sound's identity, so having the ability to control dynamics is an invaluable tool for producers and mix engineers.



Key Elements for Mixing

▶ Time-based effects

- ▶ Time-based effects can help form the sensations of depth and space. Time-based effects such as reverb and delay can make an instrument seem further away, or sometimes bigger than a dry instrument. Another factor to consider when mixing is adding creative effects with effect plug-ins to add distortion, create unique textures, or get a vocal to really shine.



Mixing Guidance - Vocal

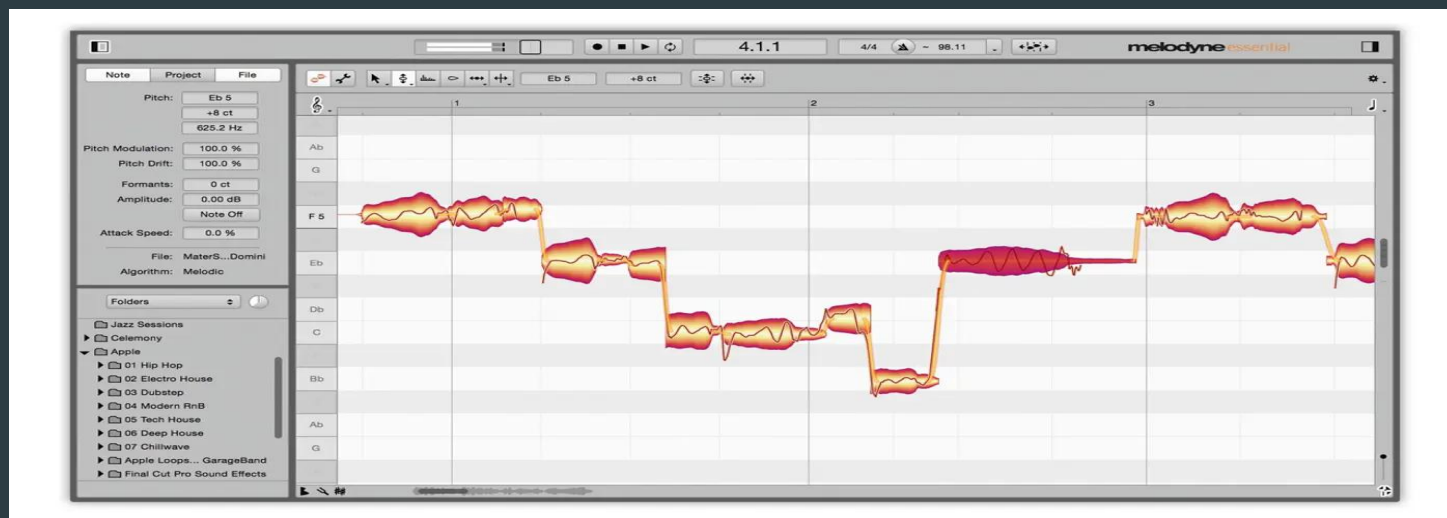
- ▶ **Step 1: Editing**
- ▶ Cut unwanted part
- ▶ Choose best clips to compose from all the takes
- ▶ Connecting all the clips together (fade in/out, crossfades)
- ▶ Dealing with Breaths



Mixing Guidance - Vocal

▶ Step 2: Pitch Correction

- ▶ Imperfections aren't always a bad thing - sometimes they add raw emotion and energy.
- ▶ Tools like Melodyne and Antares Auto-Tune make it easy to add pitch correction that is subtle and unnoticeable.



Mixing Guidance - Vocal

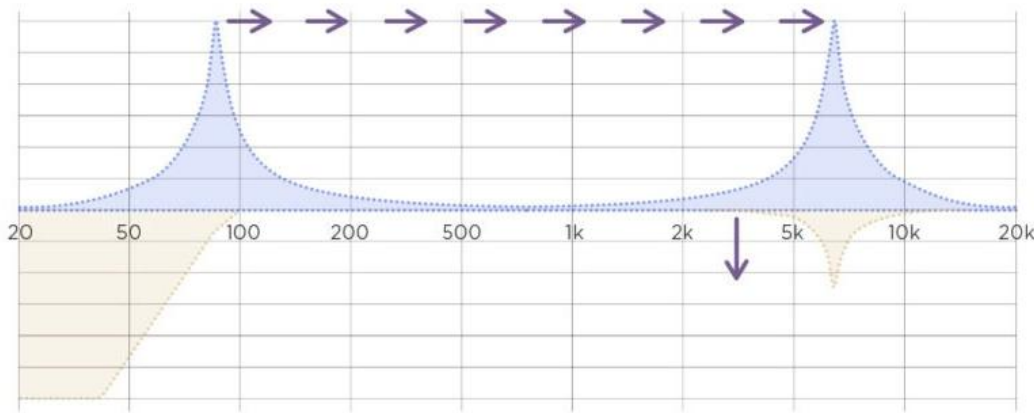
▶ Step 3: Gain Automation

- ▶ A singer can go from a whisper to a shout in seconds.
- ▶ Every word needs to be intelligible and loud.
- ▶ You can turn the volume up and down by ‘riding the fader’ with live automation, or by drawing in lane automation in your DAW



Mixing Guidance - Vocal

► Step 4: Surgical EQ

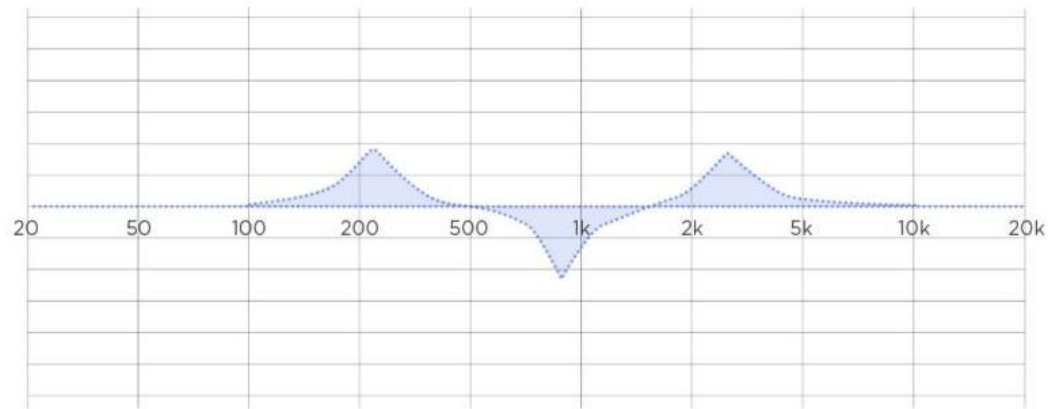


#1 REMOVE THE GROSS STUFF.

- ✓ Use narrow cuts to remove “room resonances.”
 - To find these, use an EQ sweep.
 - Boost a bell all the way with a Q of 1.5 and move it slowly from the left to the right.
 - If a small area gets extra loud or sounds “nasty” to your ears, cut it.
- ✓ Use a high pass filter to remove low end noise (but only when needed).

Mixing Guidance - Vocal

► Step 4: Surgical EQ

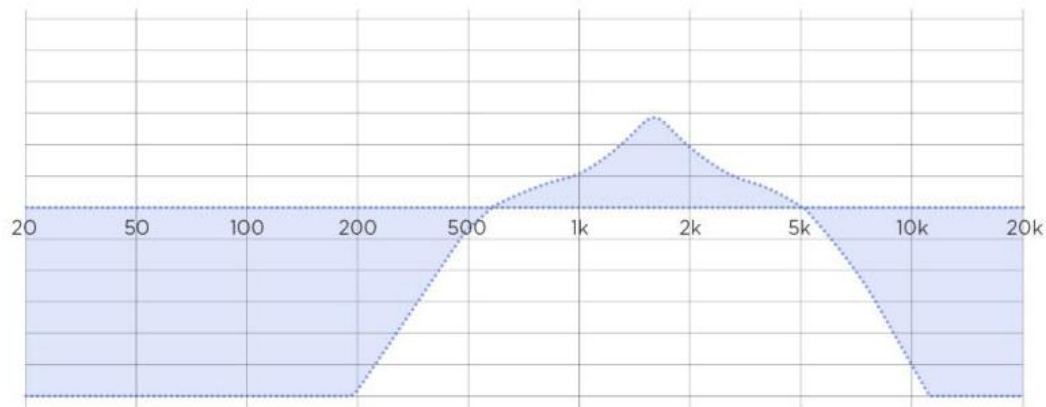


#2 ENHANCE THE GOOD STUFF.

- ✓ Use wider cuts and boosts (0.1-2.0 Q) to shape the tone.
 - Do an EQ sweep to find areas that sound good to your ears, and boost them. Start with around 3dB and tweak to taste.
 - If any areas sound like they're a little overpowering, and cut them. Start with around 3dB and tweak to taste.

Mixing Guidance - Vocal

► Step 4: Surgical EQ

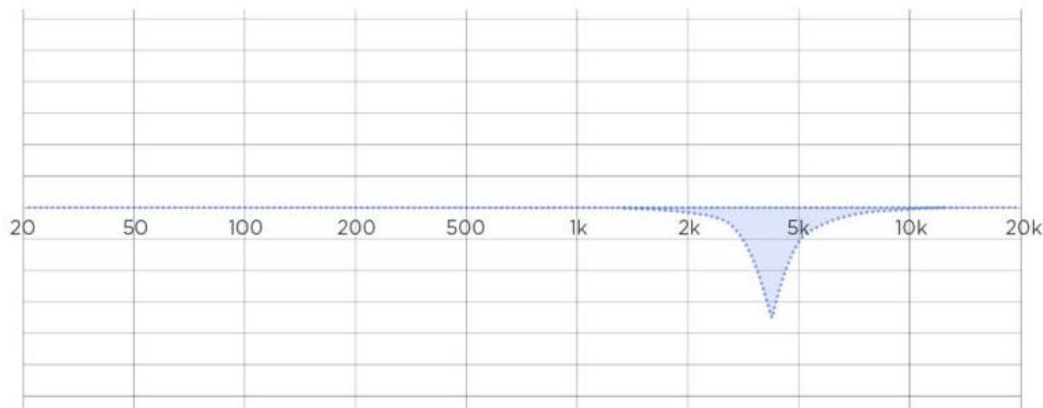


#3 MAKE THINGS SOUND DIFFERENT.

- ✓ For example, filtering the lows and highs and boosting the mids will create the classic megaphone sound on vocals.

Mixing Guidance - Vocal

► Step 4: Surgical EQ



#4 CREATE SPACE IN THE MIX.

- ✓ Carve out space in the spectrum of certain instruments to make space for other, more important instruments.
 - For example, try cutting around 4 kHz in your acoustic guitar to make space for your vocals.

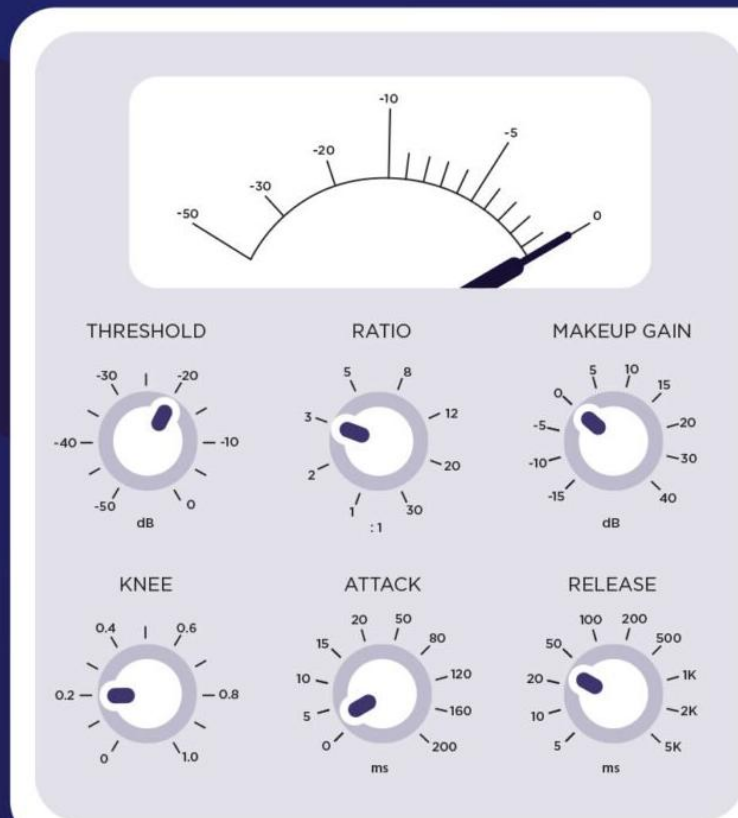
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▶ Step 5: De-Essing (Optional)

- ▶ Sibilance is a super common issue. “S” and “T” can be really harsh.
- ▶ Most de-essers have a ‘listen’ mode that allows you to find the sibilant frequency range. Find the problematic frequencies and turn them down.

Mixing Guidance - Vocal

► Step 6: Dynamic Control (Compression)



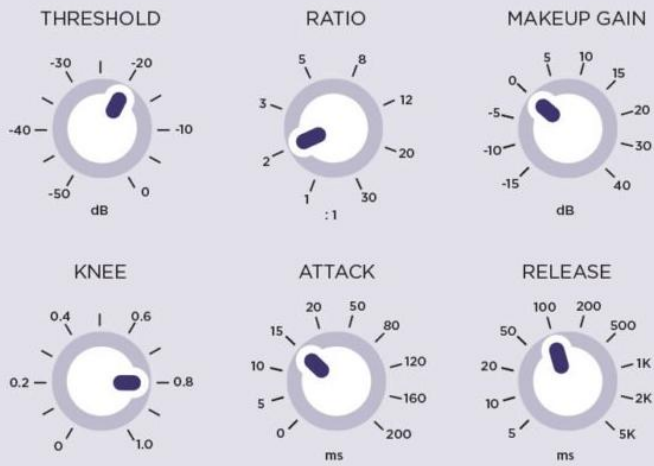
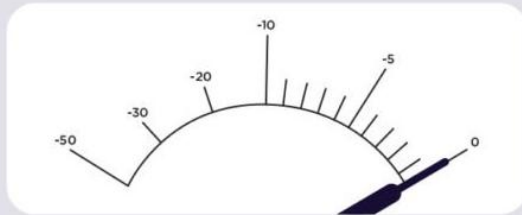
METHOD 1:

TO CONTROL THE DYNAMIC RANGE OF AN INSTRUMENT.

- ✓ Settings:
 - faster attack
 - faster release
 - harder knee
 - higher ratio
- ✓ This is to make the recording more consistent, helping it to sit in the mix

Mixing Guidance - Vocal

► Step 6: Dynamic Control (Compression)



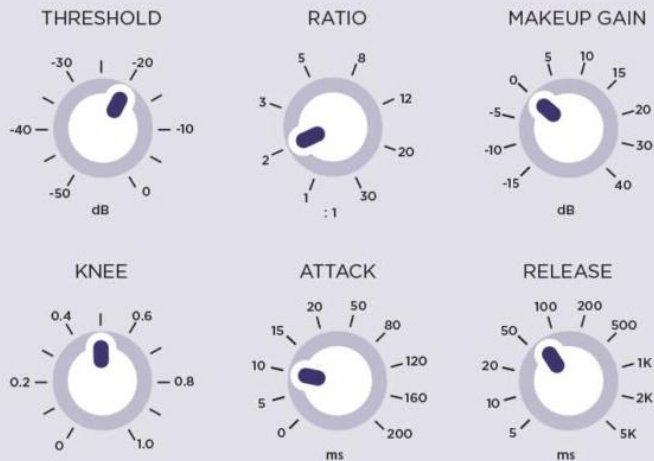
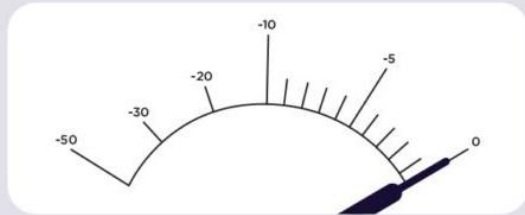
METHOD 2:

TO SHAPE THE SOUND OF AN INSTRUMENT.

- ✓ Settings:
 - slower attack
 - slower release
 - softer knee
 - lower ratio
- ✓ This “colors” the sound of an instrument, giving it more character and excitement.
- ✓ Use an analog compressor if possible.

Mixing Guidance - Vocal

► Step 6: Dynamic Control (Compression)



METHOD 3:

TO “GLUE” INSTRUMENTS TOGETHER.

- ✓ Settings:
 - medium attack
 - medium release
 - medium knee
 - lower ratio
- ✓ Used on instrument buses or the mix bus.
- ✓ Helps to make several instruments feel like they’re all performing together.

Mixing Guidance - Vocal

▶ Step 7: Tonal EQ

- ▶ Start with boosts and cuts of around 3dB or less
- ▶ adding a couple of boosts in the upper mids. This helps the voice cut through.
- ▶ add a small wide cut somewhere around 200-500Hz to cut out muddiness.

Mixing Guidance - Vocal

► Step 8: Saturation

- Adding a small amount of saturation can make a voice brighter and more exciting.
- Sometimes boosting the top end with an EQ just isn't enough, and you need you use saturation processors to create some new harmonics on the top end.



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▶ Step 9: Limiting

- ▶ Even after automation and compression, you can use limiting for extra consistency.
- ▶ Adjust the threshold on the limiter so it only engages on the loudest peaks



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▶ Step 10: Reverb and Delay

- ▶ for atmospheric styles or situations where reverb is used creatively, go crazy.
- ▶ A short stereo reverb can add width and depth
- ▶ You'll push the voice further away and make it less intelligible if using inappropriate reverb.
- ▶ if you want modern, radio-ready vocals, you don't need reverb, you can use delays to add space without pushing it back
- ▶ using different times on the left and right side you add stereo width.

Mixing Guidance - Vocal

▶ Step 11: Range Allocation

- ▶ Cutting out certain frequencies in other instruments, we can make space for the vocal to sit.
- ▶ The best place to start is to cut competing frequencies on the other instrument that you boosted on the vocal.
- ▶ For example, if you boosted the vocal at 130Hz, 2.3kHz, and 4kHz, but the guitar that is still competing with it, cut those frequencies in the guitar.



Mixing Guidance - Guitar

▶ Reference Article:

- ▶ <https://www.izotope.com/en/learn/7-tips-for-mixing-guitars.html>

