Preface

Compression is the most complex of all audio effects or processes available to the modern audio engineer, even more than EQ, reverb, or delay.

The choices available when designing a compressor (the topology, signal flow, gain computer, etc.) provide near-infinite permutations, which is why every compressor behaves and sounds distinctive from one to another, and why specific compressors have become time-tested favorites for their unique controls and desirable sonic characteristics.

There is a common misconception that compressors are automatic volume faders. This notion is entirely wrong. Compressors *change* the frequency content of an audio signal due to the fundamental parameters at the heart of a compressor's circuit (e.g., ratio, attack, release, etc.).

In short: compressors alter the sound. Faders do not change the sound, just the volume.

While there is undoubtedly an artistic approach to compression, it remains a highly technical process and, therefore, can and should be explained with a modicum of empiricism. Objective truth exists in qualitative audio. However one chooses to access that truth can be through a variety of methods: your auditory system, digital metering, or sometimes a text or email thread. Ultimately, you need to finish the task at hand and move on.

I've had the pleasure (and pain) of listening to (and applying) compression in a wide variety of recording studios and concert venues. After decades of dialing, I can attest there is no single, definitive way to approach compression. Feel free to interpret this book's concepts, settings, and templates as a starting point for exploring the world of compression for yourself.

Kev

tion with five compressors—and on the extra bus. Vocals and spatial elements aside, the sound of Brauerizing is primarily a result of serial compression techniques. In most cases, signals routed to the A, B, C, or D buses are not sent to the others.

Multibus Parallel

"The psychology of music has, since its beginnings, been plagued by three interrelated errors: hedonism, atomism, and universalism."[21]

Leonard B. Meyer, philosopher

I've spent the last decade mixing with a method inspired by the Brauerize method. For purposes of discussion, let's call it *multibus parallel.* It's basically an expansion of the Brauerize concept (four primary mix groups) with the additional option of parallel processing on the buses.

See *Appendix A* (page 107) for mix diagrams detailing my routing templates for various genres.

EXTERNAL SIDECHAIN AND DE-ESSING

External sidechain simply uses a separate audio signal to trigger the gain reduction instead of the program material. A *de-esser* is a form of compressor that acts only on the specific frequency range where sibilance occurs in the human voice.

External Sidechain

An external sidechain is helpful for stereo bus compression, in which a high-pass filter is inserted on the sidechain to prevent low-end sounds from triggering the gain reduction.

Daft Punk's "One More Time" is a popular example of external sidechain compression on the entire mix triggered by the kick drum.

Another use of external sidechain compression has been made popular by the EDM genre (i.e., the aggressive sidechain compression of nearly all elements from the kick). In these mixes, a bus of tracks (perhaps everything but the kick drum itself) is passed through a compressor, with the kick track acting as the external sidechain, resulting in a noticeable "pumping" sound in the final mix.

De-Essing

De-essing (also known as desibilizing) is the process of reducing or eliminating the excessive prominence of sibilant consonants, such as the sounds in English "s," "z," "ch," "j," and "sh." Depending on the voice, sibilance occurs somewhere between 2 and 10 kHz.

While most often utilized on vocals, de-essing can also be applied to electric guitars, synthesizers, and entire mixes.

Compression, microphone selection, vocal technique, and even a person's unique mouth architecture, can contribute to excessive sibilance. Sibilant sound frequencies can cause sonic irritation, especially when wearing headphones or earbuds, and they can ruin an otherwise well-engineered and enjoyable recording.

De-essing is a dynamic audio process that functions when the signal's sibilant range level rises above a set threshold. When a sibilant sound is present, de-essing momentarily lowers the amount of high-frequency material in the audio signal. The range of 4 to 8 kHz contains the most audible sibilance. Some plug-ins will modify the compressor's ratio and time constants to produce a more transparent effect.

Introduced in 1979, the Orban 526A was a dedicated de-esser hardware processor with a fast attack (1 ms) and release (10 ms), utilized on Michael Jackson's Thriller album.

Dedicated hardware de-essers have been available since the late 1970s. Today, specialized de-esser plug-ins are the most widely used tool for addressing sibilance and are optimized for the vocal range.

The dbx 900 system introduced in 1983 included the 902 de-esser module, the gold standard for hardware de-essers.

While de-essing can sometimes be achieved with a precise EQ, or simply by muting parts of a sibilant recording, a properly configured de-esser is the best solution in most cases. De-essers can also be used in mastering to tame other harsh sounds, such as sizzling hi-hats.

Beware, excessive de-essing can cause transients to be overly manipulated, resulting in decreased vocal intelligibility (e.g., consonants softening or distorting).

"If you have an acoustic guitar that is real spiky and stringy in certain areas, a de-esser can really help tuck those places in."[22]

Bob Power, engineer for A Tribe Called Quest's The Low End Theory