Dynamics Control 101

An overview of the basics of dynamic processing, with some examples of usage.

1. Compression

Reduces the dynamic range.

Controls: *Threshold: sets the level above which compression will occur*

Ratio: sets the amount of compression

Make up Gain: used to restore the overall level to that of the input signal.

Attack: the time for the compressor to start compressing

Release: the time for the compressor to stop compressing

Metering: *As well as input and output meters there is a Gain Reduction meter (this gives the input – output level)*

Uses:

i. to control dynamic range; to suit equipment, or fit into a mix
ii. to increase the 'punch' of a sound eg a kik drum

2. Limiting

Similar to compression, but the threshold is set so that it only effects the highest level of signal. The ratio is set very high (between 10 and ∞). The idea is to stop the output level ever exceeding 0dB.

Uses:

i. To stop the signal clipping (by setting the threshold high)
ii. To 'crush' the signal noticeably (by setting the threshold low)

3. De-essing

A combination of a compressor and an equaliser. The EQ is set to boost high frequencies and is inserted into the compressor Sidechain.

Uses:

i. to prevent sibilance

4. **Ducking**

Use of a compressor so that one signal's presence will attenuate another. The controlling signal is split to go to the compressor sidechain input.

Uses:

i. a voice-over will drop the music level
ii. a singer will drop the reverb level

5. **Expansion**

The opposite of Compression, so that dynamic range is increased.

6. **Gating**

The signal will only pass if it is above the threshold.

Controls: *Threshold: sets the level above which the signal will pass through.*

Release: the time for the gate to close

Range: how attenuated the signal is when the gate is shut (∞ is absolute gating)

Key filter: allows 'tuning in' to the wanted signal on the SC

Attack: the time for the gate to open

Hold: the time the gate is held open for after the signal falls below the threshold

Uses:

i. Stopping input noise
ii. Cleaning tracks (eg toms, electric guitar). Gating can sound more natural than cut-editing the audio.

7. **Keyed Gating**

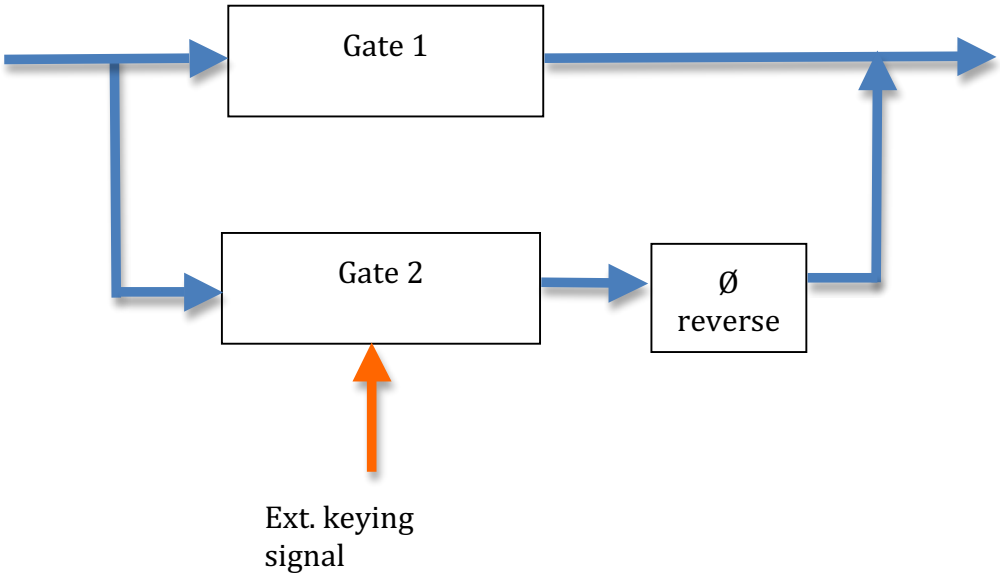
An external signal 'keys' the gated signal.

Uses:

i. a kik drum gates a 40Hz tone, to fatten the kik sound

8. Inverse Gating

Where the output signal is OFF only when the key input is present. This is achieved by gating the same signal twice, and putting one of them out of phase so they cancel out:



Uses:

i. To auto-mute a sound when another sound plays (this might be quicker than writing mute automation, or cutting the audio)