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INTRODUCTION

The goal of this essay is to assess and analyse various production, sound design and arrangement techniques used in today's commercial music, and explain how I implemented them to create a portfolio of original tracks. The current landscape of popular music proves to be more and more computer driven, with synthesised sounds and sampled drum beats dominating over live recordings (Löf, 2017). I aimed to capture this sound in my portfolio and showcase how electronic elements can be used in a variety of commercial music genres. Knowing that no musical piece exists in isolation (Byrne, 2012), I will be looking at a number of tracks in each genre to obtain an accurate representation of current trends and production methodologies.

HIP HOP

The sound of modern hip hop places focus on hard-hitting drum beats and 808 sub basses. The musical ideas are sparse and serve as a soundscape to upfront vocals and rhythm sections (Pangburn, 2018). Most of today's rap producers go for single-hit drum samples as they provide the most clarity and punch (Houghton, 2018). There is a definite trend for perfectly quantised beats, tight snares and unnaturally busy hi-hat patterns (Tough, 2016). This approach first originated in Atlanta, in the early 2000s, with artists like Gucci Mane pioneering the heavily-synthesised hip hop. This maximalist style of production has dominated the genre ever since, with producers like Lex Luger or Metro Boomin' regularly borrowing from EDM and Pop (Dixon, 2018). Both "SICKO MODE" and my original song showcase many of the techniques listed above.

The kick has to be loud and punchy, while simultaneously allowing the sub bass to carry the low end of the record. Lu Diaz (2019), a multi-platinum mix engineer, underlines the importance of the kick-bass relationship in mixing modern hip hop. Enhancing 808 harmonics, correctly EQ-ing the kick and sidechaining are the three main techniques he uses to achieve commercial sound. Boosting the 5kHz range on the kick drum can provide it with the necessary punch, while carving out a

frequency pocket (around 60-80Hz) in the sub bass allows the kick to blend in seamlessly rather than sit on top of it [see: Fig. 1]. Making sure the sub bass translates to small speakers is also a major consideration. Shaping upper frequency harmonics on the 808 with distortion or Waves' Vitamin plug-in allows the bass to come through on phone speakers and earbuds. Compressors like CLA-2A or CLA-76 help even out the bass sound and add analog excitement to the track (Stein, 2017). Using another, fast attack and fast release, digital compressor for sidechaining makes it easier to accent the transient of the kick without sacrificing the bass response.

Both "SICKO MODE" and my original song present a similar drum sound palette, making use of trap-inspired hi-hats and pitch-shifted snare rolls. The snare and clap sounds are short and tight, sitting perfectly on the grid. As both songs progress, they introduce additional off-beat snares, creating a groove widely popular in today's trap music.

The musical structure of modern hip hop is rather simplistic. Most songs feature chords I, IV, V, vi and occasionally ii. This applies to both "SICKO MODE" (I-ii-IV-vi) and my track (I-V-vi). Such approach allows the listener to focus on the rapid rap delivery rather than the complexity of music. Musical sound selection varies greatly from song to song in this genre. From acoustic guitars, often used by Post Malone, through chopped and screwed samples, in the style of Kanye West, to in-your-face synthesisers, harnessed by Travis Scott. To stay true to my reference, I opted for the electronic sound and blended it with heavily manipulated vocal samples [see: Fig. 2]. Tough (2016) acknowledges this traditional hip hop technique to be very common in today's chart-topping music. As the structure of my song is very dynamic, I aimed for the vocal element to be the glueing factor between the various sections.

The most unusual aspect of "SICKO MODE" is the arrangement, with distinct instrumental, groove and tempo changes. The song starts at 140BPM and transitions to 155BPM for Travis Scott's verse. Using increasing tempo to build momentum is a fantastic technique, although quite unpopular in

commercial music. I decided to implement the same approach but take it even further, using tempo as the key tension-building factor. My song starts at 120BPM, speeds up to 145BPM for the second verse and builds up to 160BPM only to release in a much slower outro at 70BPM [see: Fig. 3]. Such rising suspense leading to a peaceful catharsis is a very popular arc in any storytelling artform (Vogler, 2007). The outro of my song was very much inspired by Kanye West's "New Slaves". On his track, he samples Omega's "Gyöngyhajú Lány", an epic rock anthem, and uses it to bring closure to the record. I created my own short loop with electric guitars, bass, organ and a live drum kit. My aim was to make it sound old and dated, like a vintage sample. To achieve that, I used Waves' Kramer Tape Emulation and heavy distortion on both single tracks and the output of this entire section.

The rap vocal production becomes dryer and dryer each day, as using prominent delays and long reverbs can easily detract from the clarity of the vocals. Overusing these spacial effects can make the words blend together and negatively impact the tangibility of the vocal take (Zorn, 2018). Leslie Brathwaite (2019), one of the world's most renowned mix engineers, lists a number of steps towards achieving a modern vocal sound. Introducing multiple stages of compression can keep the compressor from "choking" and spread out the work evenly. The goal is to obtain the upfront sound without degrading its quality. The popular approach is to use a fast compressor to control the peaks and a slower one to control the dynamics of the entire performance (Gallagher, 2015). One technique I have found useful was boosting the "air" frequencies (around 12kHz) with a vintage EQ (like PuiTeq EQP1-A) and following it up with a De-Esser to tame the resulting sibilance. This gives the vocal the high-end tone without introducing unwanted harshness (Divine, 2017). I have also learned not to be afraid of broad Q-values when mixing as they often sound more musical and natural than narrow, surgical adjustments (Brathwaite, 2019). Vintage, console EQs which would automatically broaden the curve when boosting and narrow it down when subtracting.

COMMERCIAL EDM

The pop-EDM blend is an extremely popular fusion in today's music. Major producers like Martin Garrix, Alan Walker or Major Lazer often take advantage of the classic pop formula and co-sign singers for their drop-focused instrumentals (Strom, 2015). The radio friendly song structure has been very prominent in this genre, with most records rarely exceeding the 3:30 minute mark (Tough, 2016). The drop sections are usually used by producers to show off their production skillset and finesse. They mainly consist of ground-shaking basses, saw wave super synths, vocal chops, punchy kicks and rolling hi-hats. They usually follow the harmonic structure of the previous sections but deploy multiple production techniques like dense layering and complex sound design to capture the listener's attention. Although both "On My Way" and my original "Edge of The World" implement the same structural formula, the drops showcase two different trends in modern EDM. Alan Walker continues with the afro-beat groove in his drop, letting the prominent flute lead carry the track. On "Edge of The World", I switch the beat to a hip-hop-inspired pattern and go for the more classic sound, with ILLENIUM and Martin Garrix-inspired synths and vocal chops.

The foundation of my drop in "Edge of The World" are two saw wave super synths. One plays the chords in a staccato sequence, which I achieved by modulating the filter cutoff frequency and the level of both oscillators with LFO 1. The second LFO modulates the coarse pitch and fine tune of the oscillators. Slowing down the attack on Envelope 1 and assigning Envelope 3 to modulate the rate of LFO 1 created the swelling, rhythmic synth sound I was looking for [see: Fig. 4]. At this point, I have found the drop to sound thin, so I used a second saw wave synth, with 16 voices of unison and slight detune on both oscillators, to fill out the frequency spectrum. I have also introduced different chord voicings between the synths for added harmonics [see: Fig. 5]. Such layering technique is quite common in EDM and can be heard on tracks like "Takeaway" by The Chainsmokers (Dixon, 2018).

Melodic vocal chops have been widely used in commercial EDM throughout the 2010s. Both Strom (2015) and Tough (2016) have listed them as one of the key trends in chart-topping music of that era. There are many sample packs with ready-made vocal chops but I always find that sampling the original lead vocal is more creative, original and suits the tone of the track better. Logic's EXS24 allows for quick sample manipulation by mapping it across the whole keyboard and turning it into a playable instrument.

Both "On My Own" and "Edge of The World" borrow from the dancehall infused rhythm in the verses. This trend comes from the rising popularity of latin music, as reported by the likes of Billboard and Forbes (Benjamin, 2019). The off-beat snare rhythm was popularised by reggaeton and the latin club scene, deriving from their samba and dance-oriented culture (Leight, 2019).

The drum sound selection is quite similar to hip-hop, with punchy kicks and trap-inspired hi-hats. The main difference is the very common use of snaps, woodblocks and other percussion sounds instead of the snare. This can be heard on the tracks like Matoma's "All Night" as well as "Edge of The World". This technique often involves bringing in a very powerful and prominent snare in the drop to make it sound even more impactful in comparison to the verses.

As the nature of EDM is very electronic, many producers go for acoustic instruments, like strings and guitars, in the verses to give their tracks the more organic feel. I used a sampled guitar from Omnisphere 2 to honour Alan Walker's instrumentation choices on "On My Way". Even some more exotic and ethnic instruments, like kalimbas and marimbas, have found their place in the modern commercial EDM scene. They can provide additional texture to the existing arrangement. Interestingly, strings have a very similar frequency response to saw wave synthesisers. Ever since producers like Flume realised that, they have been using them to add warmth and air to their synths (XLNTSOUND, 2019). I implemented this technique on "Edge of The World", with strings

appearing as a synth layer both in the prechorus and the drop. Acoustic piano is also a fantastic layering instrument and can be heard in the drops on my original track.

It is very popular for modern pop-EDM songs to explore the minor keys, as it creates an interesting harmonic contrast between the danceable beat and nostalgic melodies. This is true for both “On My Way” and “Edge of The World”. Although chord progressions are not usually very complex, it is not uncommon for EDM producers to spend hours experimenting with different voicings and inversions to create commercially successful harmonies (Sigala, 2018). Both the reference and my original track are in the key of C#m and use almost the same set of chords (E, B, C#m, A with occasional detours to F#m, G#m and the relative major of G#) but the different order and voicings result in a completely different feel. The saw wave synths in my drop play the more harmonic versions of the main chords (like Badd11) to thicken up the sound.

URBAN POP

The urban pop, or urban contemporary, is a unique blend between modern pop, hip hop, R&B, soul and EDM. The term was first coined by DJ Frankie Crooked in the early 1970s (Britannica, 2000). The most prolific figures in this genre include Chris Brown, Akon, Usher or Rihanna, although many other commercially successful artists borrowed from it on multiple occasions. This style of music is very popular in the modern club scene, especially with the African-American audiences. Keeping that in mind, the records are very danceable and rhythm focused. It is quite common for producers in this genre to base their tracks around a single, instantly recognisable riff. This, once again, comes from the genre’s popularity in the club scene, where the DJ spins different tracks and you want the crowd to immediately get excited once your song starts playing. Such catchy, single instrument melodies can be heard on Jason Derulo’s “Wiggle” or “Swalla”, Ariana Grande’s “Problem” and my original track “Nasty”.

The drop is still often present in this genre, but it serves a different function than in EDM. It is usually a blend of the chorus and a dance break. The vocals are normally present during this section as something easy to sing-along. The use of various shouts, whoops and catchphrases is quite common as they add excitement and energy. There is a difference in instrumentation choices as well. There are no heavy, mid-range synths and big chords as they would clash with the vocals. Sound design is not very prominent in that section as it would be distracting from the main melody. The riff is often reinforced by more present instruments (rich in the 3kHz range) like trap-inspired leads or brass. Tough (2016) admits urban pop has played an important part in the reintroduction of saxophone back into popular music.

The prechorus is often used as a buildup, which is true for Ariana Grande's "Problem" and "Nasty". In my original track, it also serves as a melodic break from the main riff, quite prominent in the verses and choruses. It is the only section with actual chords being played which adds harmonic excitement and value to the track. Similarly to EDM, the drums are quite sparse as they build the tension and increase the impact of the drop. The use of risers and other transition effects is very common.

The vocal processing is very similar to other commercial genres, with the lead being very tight and upfront in the mix. Nowadays, the use of autotune is practically the norm, although making the original vocal take sound as good as possible is a vital part of the process (Zorn, 2018). This is where traditional techniques like comping (glueing together the best parts from multiple takes), manual tuning and time manipulation come in handy. Stripping down the silence between phrases is also crucial to the process, as any noise or unwanted sonic artefacts may become a problem once put through a compressor (Vargo, 2018). One plugin I have found particularly useful is Izotope's Breath Control. It automatically detects and attenuates the breaths, based on set sensitivity. These are all very popular methods of obtaining a clean, modern vocal sound [see: Fig. 6].

CONCLUSION

With critical listening and extensive research I was able to obtain a detailed insight into the key production elements of the analysed genres. The three reference tracks are great examples of current songwriting trends in each of the styles. There is no denying all three are mega-hits in their respective fields with nearly 2 billion combined streams on Spotify. I have also looked into multiple other tracks as a reference, to make sure I am able to accurately identify specific composition techniques and sonic characteristics in a broader context. I did not spend too much time exploring and discussing mixing and engineering approaches as my tracks are still in their demo stage and I wanted to focus more on the intricate production analysis.

It is worth noting there are other, simpler or even drastically different songs in each of the analysed genres which achieved similar levels of success. Although this project provides an overview of the most popular production and songwriting trends, it also reaches an even more important conclusion - there is no one formula for making a hit record.

APPENDIX

Fig. 1



Kick 5kHz punch boost



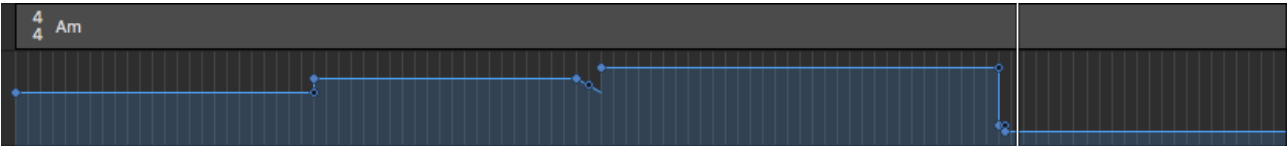
Dynamic sub bass EQ

Fig. 2



Vocal engine

Fig. 3



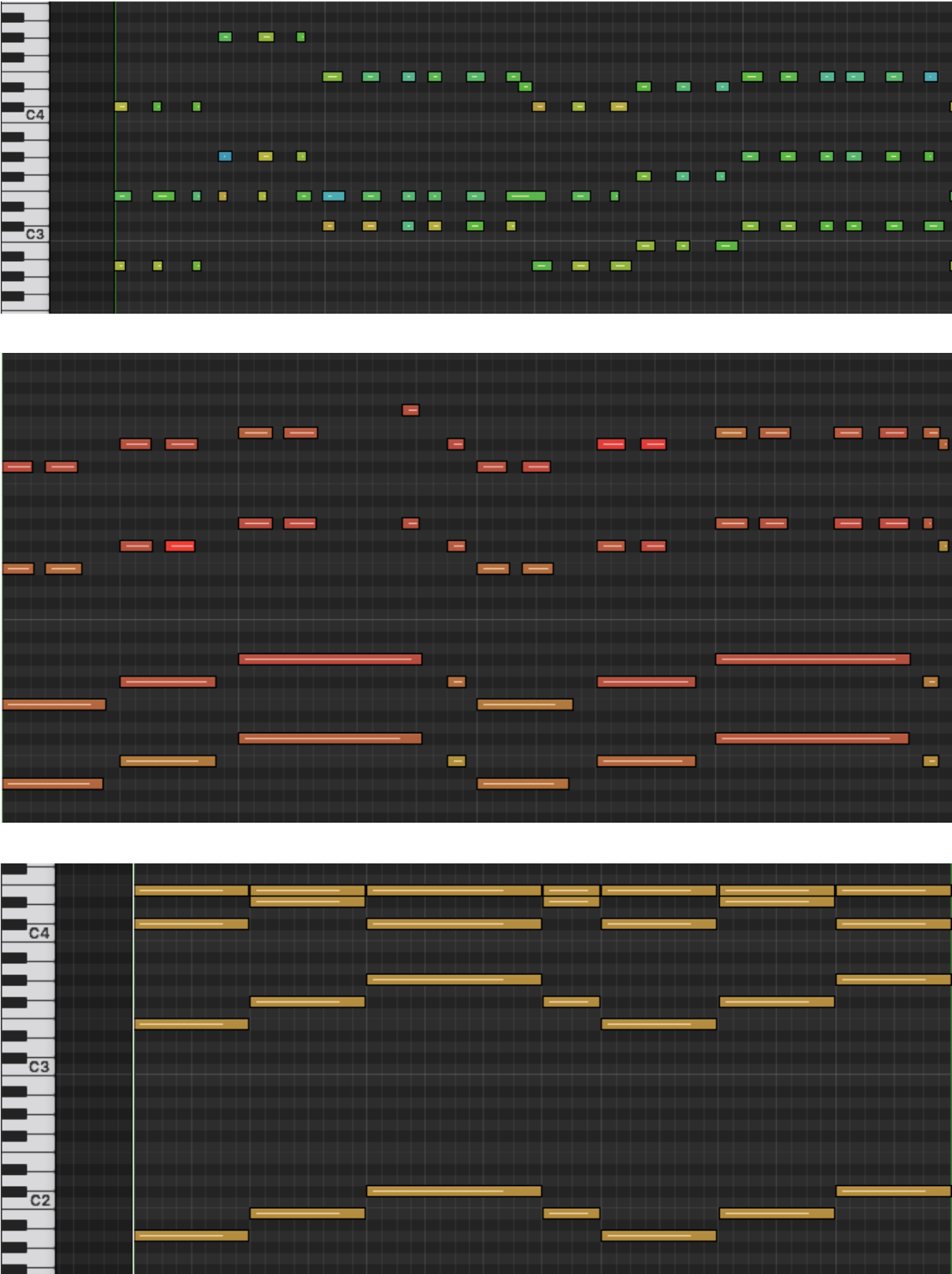
Tempo map changes

Fig. 4



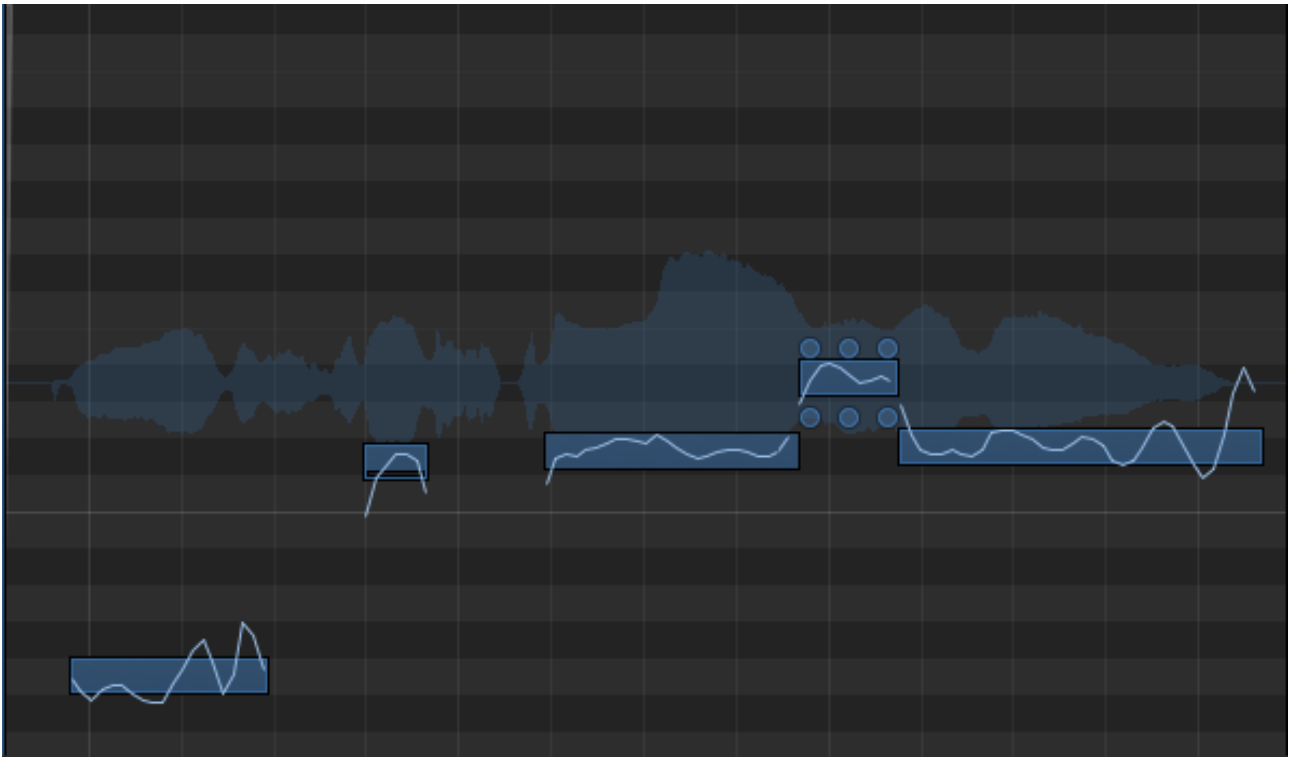
Drop synths sound design

Fig. 5



Synth chord progressions and layers

Fig. 6



Manual vocal tuning and time-stretching



Autotune settings

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