

University Of Wales Trinity Saint David

Tileyard Education

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Introduction

This paper is going to present the three different genres/styles, each represented by a song or an album, that have been analyzed through research and first-hand experience, and their original-material counterpart, that is based on the aforementioned analysis and the application of production techniques that were used in the realization of the reference tracks and other techniques that served the purpose of the assignment.

The production of the three original songs was completed with little involvement of outside musicians, no budget, and basic equipment, other than some high-quality microphones for recording vocals, and Universal Audio Apollo interfaces for recording drums and vocals.

Analysis and Production

1. The Chainsmokers - Paris

Original Track: Alessandro Favero - Getaway

Reference Track

Artist: The Chainsmokers

Song: Paris

Producer: The Chainsmokers

Genre: EDM / Pop Crossover

Similar Artists: Lost Frequency

Commercial value data:

Paris 655 Million streams (Spotify, end 2018)

Closer - 1.4 Billion streams (Spotify, end 2018)

Don't Let Me Down - 1.1 Billion streams (Spotify, end 2018)

Something Just Like This - 938 Million streams (Spotify, end 2018)

The Chainsmokers are defined as an EDM/Pop Crossover Duo (McIntyre, 2016). EDM stands for electronic dance music: a range of genres of electronic music often played in nightclubs and characterized by a strong danceable beat (dictionary.com). It is “a term that didn't really exist until a few years ago and is used to describe a genre that's been popular around the world for decades, [and] would have a tough time staying within a narrow set of parameters.” (O'Malley Greenburg, 2013).

On the other hand, Pop is wider and not necessarily characterized by a style or sound: “According to Frith, characteristics of pop music include an aim of appealing to a general audience, rather than to a particular sub-culture or ideology, and an emphasis on craftsmanship rather than formal “artistic” qualities. Music scholar Timothy Warner said it typically has an emphasis on recording, production, and technology, rather than live performance; a tendency to reflect existing trends rather than progressive developments; and aims to encourage dancing or uses dance-oriented rhythms. [...] The main medium of

pop music is the song, often between two and a half and three and a half minutes in length, generally marked by a consistent and noticeable rhythmic element, a mainstream style and a simple traditional structure. Common variants include the verse-chorus form and the thirty-two-bar form, with a focus on melodies and catchy hooks, and a chorus that contrasts melodically, rhythmically and harmonically with the verse. The beat and the melodies tend to be simple, with limited harmonic accompaniment. The lyrics of modern pop songs typically focus on simple themes – often love and romantic relationships – although there are notable exceptions.” (En.Wikipedia.org)

As for the Chainsmokers, The writing of the song is essential to the genre in this case as it determines the structure: the chorus that falls into an instrumental drop is typical of EDM, but is in this case mixed with the structure of a pop song, with the main verse-to-drop section repeated and then a quieter moment that drops into a final chorus. (Supplemental Figure 1)

In style with EDM and modern Pop, which is largely influenced by Dance music itself, in Paris electronic drums are the main rhythmic element. They are synthesized and/or processed, not recognizable as classic drum machines, as opposed to EDM of the past decades, like Linn Drum, Roland TR-808/909, Oberheim DMX, Akai MPC (Wilson, 2016). The Chainsmokers themselves talk about using sounds from digital-download sample packs from Beatport, searching through the latest releases. Sounds from House and its subgenres and Trap and its subgenres are the ones they use the most (top picks by The Chainsmokers on Beatport Sounds).

Also, this style is defined by the inclusion of synthesized sounds emulating real instruments (plucked instruments, finger snaps, claps) plus some real instruments (electric guitars, electric bass, acoustic pianos).

Artist	The Chainsmokers																																							
Title	Paris																																							
BPM	100																																							
Time Signature	4/4																																							
Bar	1	5	9	13	17	21	25	29	33	37	41	45	49	53	57	61	65	69	73	77	81																			
Section	Intro	Verse			Chorus		Post Chorus	Verse 2		Chorus 2		Post Chorus 2	Drop		Chorus 3		M8 BuildUp		Drop		Chorus Drop																			
Kick Drum		x	x	x	x	x		x	x	x	x		x	x	x		x	x	x	x	x	x																		
Snare Drum								x	x	x	x		x	x	x				x	x	x	x																		
Hi-Hat									x	x	x		x	x	x						x	x																		
Percussions				x	x	x						x					x	x				x																		
Piano							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																		
Synth 1	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																		
Synth 2																	x	x	x	x	x	x																		
Bass		x	x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x	x																		
Vocals Male		x	x	x	x	x	x	x	x	x	x		x		x	x	x	x				x																		
Vocals Female												x		x	x	x	x	x				x																		
Vocoder/BG Vox				x	x					x			x		x	x	x	x				x																		
Guitar						x					x	x	x	x			x	x	x	x	x	x																		

Artist	Alessandro Favero																																							
Title																																								
BPM	95																																							
Time Signature	4/4																																							
Bar	1	5	9	13	17	21	25	29	33	37	41	45	49	53	57	61	65	69	73	77	81																			
Section	Intro	Verse			Chorus		Post Chorus	Verse 2		Chorus 2		Post Chorus 2	Drop		Chorus 3		M8 BuildUp		Drop		Chorus Drop																			
Kick Drum		x	x					x	x	x	x		x	x			x	x	x	x	x	x																		
Snare Drum						x	x				x	x	x						x	x	x	x																		
Claps						x	x												x	x	x	x																		
Hi-Hat											x	x	x						x	x	x	x																		
Percussions				x	x	x						x			x	x	x	x				x																		
Piano	x	x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																		
Synth 1	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																		
Synth 2																	x	x	x	x	x	x																		
Synth 3										x	x			x	x		x	x	x	x	x	x																		
Guitar												x	x	x	x		x	x	x	x	x	x																		
Bass		x	x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x	x																		
Vocals Female		x	x	x	x	x	x	x	x	x	x		x		x	x	x	x				x																		
Vocoder/BG Vox						x	x				x				x		x	x				x																		
Vocal Synth						x							x	x			x	x	x	x	x	x																		

Supplemental figure 1. Structure analysis of reference track against original track (larger version in Appendix):

The very first step was finding a chord progression that will work with the sound and the emotions the listener should feel. In this case it is something romantic and a bit melancholic, as those are the feelings that The Chainsmokers go after, especially on the main reference track Paris. The voicing plays an important part in getting the feel right.

The tempo was set to 95, which is the same as Closer, and still close to Paris (100 bpm), and the time signature to 4/4, that is necessary in this genre in order to have a constant pulse, sometimes enhanced by the four-on-the-floor kickdrum pattern. Many tracks of commercial success of the past demonstrates that the four-on-the-floor kickdrum pattern belongs more to the dance scene, EDM in particular when it is synthesized, since Giorgio Moroder started using it constantly in the 70s (Poe, 2014), whereas Pop music is not necessarily based on that. The 2010s are the era where the main influence in commercial pop is EDM (Billboard.com, 2018).

Once the chord progression was in place, the song was written with the help of artist and songwriter Francesca Di Biasi. The melodies are written with a primary focus on using as few notes as possible and making the rhythmic patterns of the melody the main hook element. The productions and arrangements of The Chainsmokers are usually quite repetitive, and it's the vocals that really make those songs stand out. After writing the song a beat foundation was added, and instrumentation, according to the structure and arrangement of the reference track (Supplemental figure 1). The central idea is to have a few instrument parts, and create a song structure by muting and unmuting the different elements in different sections of the song. That creates memorable sounds and a comfortable environment for the listener that can focus on the song, that is enhanced by the general sound of the instrumental. Most of the sounds in the original track come from sample packs on Splice that came out from searching the tag "Chainsmokers" and from sample packs recommended by the Chainsmokers themselves (Beatport, 2018), and synths from Arturia, Logic and Xfer.

The next step was vocal recording and production, and adjustment on the instrumental accordingly. The addition of some electric guitars through a Line 6 Pod XT Pro gave the song some texture and a more familiar vibe, like we can find in The Chainsmokers (Tingen, 2017).

The mix was done so that the vocals are always the centre of the attention and are supported by the beat. The main idea is to have the beat covering the low and high frequency, the bass covering the sub frequency and the piano, guitars and synthesizers covering the mid frequency thus giving all the harmonic information. This is because the harmonic information is much more easily understandable for the human brain in the mids: that is where the song lives as in chords, melody and lyrics (human voice). The low and high end of the spectrum on the other hand give the excitement. Between the two, in pop music the song has a bigger importance and should be heard in any situation, be it small speakers or loud background noise.

2. Mark Ronson - Version (Album)

Original Track: Alessandro Favero - Candy Shop (originally by 50 Cent)

Reference track

Artist: Mark Ronson

Title: Version (Album)

Producer: Mark Ronson

Genre: Motown/STAX ("Mark Ronson – Intro Clip 2". YouTube. Retrieved 27 July 2013.)

Similar Artists: Meghan Trainor, CeeLo Green

Commercial Value Data: Number 2 in UK Album Chart, more than 100,000 copies sold.

Motown is a music genre coming from the Motown label in Detroit, combining rhythm and blues and pop, or gospel rhythms and modern ballad harmony (Collins Dictionary). It is a genre that relies heavily on real instruments played by real musicians: "People would listen to it, and they'd say, 'Aha, they use more bass. Or they use more drums.' Bullshit. When we were first successful with it, people were coming from Germany, France, Italy, Mobile, Alabama. From New York, Chicago, California. From everywhere. Just to record in Detroit. They figured it was in the air, that if they came to Detroit and recorded on the freeway, they'd get the Motown sound. Listen, the Motown sound to me is not an audible sound. It's spiritual, and it comes from the people that make it happen. What other people didn't realize is that we just had one studio there, but we recorded in Chicago, Nashville, New York, L.A.—almost every big city. And we still got the sound." (Justman, 2002)

Mark Ronson's Version is mainly based on breakbeats drums and brass instruments, and, like in Motown, everything revolves around the musicians and the production approach: Homer Steinweiss from the Dap-Kings recorded drums on tape (Doyle, 2007).

Version is a modern record though, and it does not sound exactly like the Motown records. Arranger from the 60s and the 70s like Quincy Jones and Henry Mancini were very influential to Mark Ronson in the concept of the record (Doyle, 2007). Crucial to Version seems to be the idea of approaching already existing songs by doing the opposite in terms of production. Example: Toxic by Britney Spears is modern and synth-based, with pop female vocals. Mark Ronson's version of it is mainly based on real instruments and has rap in it, with lots of male vocals; Oh My God by Kaiser Chiefs is quite edgy and based on electric guitars and Indie, aggressive vocals, whereas the version with Lily Allen is based around sounds from the 70s, with modern delicate vocals by a female pop artist. In the case of the original track produced for this essay, Candy Shop by 50 Cent is a hip hop song that revolves around male vocals doing rap over a looped beat with synthetic sounds. The original revisited version has female vocals, no rap, and instrumentation that reminds of the 70s, and sounds as real as possible (although it is mainly sample-based for logistic reasons). All the instruments have a vintage '70s sound, whereas vocals are contrasting with a modern, bright and compressed tone.

The structure of the song was also modified into a pop structure, with shorter verses and a middle eight that goes into a build up with a solo, and a final double chorus that resembles a band jamming on stage, like in Mark Ronson's Uptown Funk.

Unfortunately it was not possible to have real musicians, instruments and the facilities to make it happen the same way. Not-edited sampled loops were used instead for drums. Horns (Logic Pro's Studio Horns virtual instrument) and keys were then recorded on top of the drums without click track, not using any editing. A funk bassist then played a real electric Fender Precision bass on top of the rest. This way most of the human feel of musicians and interplay between the parts was retained, as everything is played by humans, although is not all analog nor live recording. Since the equipment of the 60s was also crucial to the sound, especially tape, recording to tape was recreated by the use of digital tape emulation plugins.

In order to record everything digitally, the formula would be a 60s drumkit with a mono overhead ribbon mic with some reinforcement microphone on the kickdrum to emphasize the low end, hitting a tape machine with a loud signal, for drums (Carpenter, 2015); then an Acme Audio Motown DI for bass and Wurlitzer, and ribbon or dynamic microphones for the horns, recording the horns section live, all at the same time.

3. Nothing But Thieves - Particles

Original Track: Kite-Eating Tree - Let You Down

Reference Track

Artist: Nothing But Thieves

Title: Particles

Producer: Mike Crossey

Genre: Modern Rock

Similar artists: Royal Blood; Black Keys; Foals

Similar Producers: Rich Costey, Alan Moulder

Nothing But Thieves are a Rock band - Drums, Electric bass, Electric Guitars, Vocals, but with a modern sound, that comes in the form of big compressed drums, mostly triggered with acoustic or electronic samples, and synth-like sounds on guitars and bass, with some additions on synths.

The Collins Cobuild English Dictionary, based on a vast database of British usage, suggests that "rock is a kind of music with simple tunes and a very strong beat that is played and sung, usually loudly, by a small group of people with electric guitars and drums,".

Particles uses a standard modern rock instrumentation: drums (acoustic, played), electric bass, electric guitars, vocals, synths. The band fits the definition of rock music for the instrumentation, the sounds and the meaningful, sometimes political, lyrical content (Dictionary.com).

This genre and style relies on multitrack recording of real instruments, such as acoustic drums, electric bass, electric guitars, and vocals, plus some synthesizers, enhanced by studio techniques based around console routing and audio processors like EQs,

compressors, saturators, reverbs, delays and modulation, and their combinations (Tingen, 2013).

Acoustic drums are what changed the most throughout the history of recorded Rock music, and are probably the most defining element of different decades (Deegan, n.d.). Modern drums, generically speaking after 2000, are defined by a big detailed sound that is augmented and/or changed by drum replacement (or enhancement) (Messitte, 2014) , and in the case of Nothing But Thieves, this often happens with electronic sounds, which give a modern twist to an otherwise quite classic rock sound. The drum sound is also focused on the single elements (i.e. kick drum, snare drum, hi-hat, cymbals, toms) as opposed to the drumkit as a whole instrument, like it was in the past, still it retains the feel of a drumkit played by one single drummer, as opposed to drum machines and edm drum sounds, made of single samples completely sonically independent from one another and played by a machine, usually with no dynamics and no time variations. Guitar sounds are processed through lots of pedals (YouTube, 2017) .

The song is still the main focus of the genre, having structures with verses, choruses, middle-eights and slight variations.

In the original track Let You Down, originally written in 2011 by Faverio's band Kite-Eating Tree, The same approach of recording was used for all the instruments, using virtual instruments and processing that resembled an analog studio:

The drums were recorded with eight microphones, focusing on close mics and overhead to give a picture of the drumkit as a whole, knowing beforehand that they would have been augmented with triggered samples. The tracking was done through a Universal Audio Apollo 8p with Unison technology that was used for preamp coloration.

Channel List for drums recording

Mic 1: Kick Drum (In) - AKG D112 - Unison API Vision Channel Strip

Mic 2: Snare Top - Shure SM57 - Unison API Vision Channel Strip

Mic 3: Rack Tom - Shure SM57 - No preamp emulation

Mic 4: Floor Tom - Aston Origin - No preamp emulation

Mic 5: Hi-hat - Aston Spirit - No preamp emulation

Mic 6 and 7: Overheads - Aston Starlight - Unison Neve 1073 emulation

Mic 8: Mono Room - Aston Spirit - Unison Neve 1073 emulation for distortion and API Vision Channel Strip for compression

Kick triggered sample: Kick drum hit sampled from Trip Switch by Nothing But Thieves.

Analog-emulation plugins were used during the mixing stage such as Waves REDD-17 Console, Slate Digital API eq, Slate Digital Virtual Tape Machines, Slate Digital Focusrite Red bus compressor. The idea was to achieve a dry sound, then recreating the ambience with a Lexicon 480 impulse-response reverb to augment the low end as well. All the analog-emulation plugins were fed with high level signal to add harmonic distortion and tame the transients while retaining punch, in order to make the compressors work more evenly on groups.

Nothing But Thieves also have high dynamic range with respect to many other modern rock records (dr.loudness-war.info), so the amount of compression was limited and automation was used extensively instead.

The bass was a five-strings Sire Marcus Miller V7 Swamp Ash, recorded through a high-impedance input of an Apogee Duet, amped digitally through Softube Bass Amp Room plugin. There are overdubs in the chorus and the last instrumental riff that use slap technique on the lowest B string, in order to achieve a very steady sub-bass 31 Hz, with a first harmonic at 62 Hz, which give the sound a modern depth, again achievable thanks to the subtle and light use of compression (if any). A different, more mid-focused amp setting was used for the part after the first chorus, to give more importance to the bass line and make it clearly audible on smaller speakers.

Guitars were recorded through a Line 6 Helix amp simulator and are layered to achieve a more textured sound. In particular, a cleaner sound on top of a heavily distorted sound is used in order to get more transients from the pick. The guitars play in a different register than the bass does, in most sections: this allows the guitars to be high-passed at a lower point in the spectrum, as they are not fighting against the bass, and obtain a fuller sound.

Keyboards are strictly virtual instruments from Arturia, and play three main roles: as a counterpart for the electric guitars in the riffs, in order to give a more rigid texture to the sound, thus getting a bit closer to the synthetic sound of modern digital records, and a bit further away from classic rock; as a lead instrument for the melodic theme during the heavier instrumental riffs; as a tool to enhance the perception of harmonic content in a controlled way, as opposed to using the mid frequency from the electric guitars, that contain so many harmonics that can get in the way of the vocals. Please note that, in the attempt to recreate an analog-like environment, and in the pursue of personal taste, all the keyboards are digital emulations, for lack of their analog counterparts, of real classic keyboards, and not synthesizers: acoustic grand piano, clavinet, wurlitzer, harpsicord, celesta. Heavily processing classic keyboards to the point where it is hard to recognize them for what they are has always been part of the personal sound taste and research of the author, as a producer and keyboard player.

In the modern age of rock music, vocals seems to be the centre of focus, overpowering electric guitars and other mid-range instruments. Because of this, vocals were tracked with a large-diaphragm condenser (Aston Spirit), which is the type of microphone that retains the widest frequency and dynamic range. In order to give vocals an edge and make them stand out, though, distortion was applied during the mixing stage.

Backing vocals are mainly used to add texture and sometimes to underline individual words or parts of the song, and were recorded with a different microphones (Aston Origin and Audio-Technica 4050), to achieve greater separation from the lead vocals, even before reaching for equalizers.

Conclusions

The commercial songs or album chosen for the assignment used different approaches and techniques, and involved musicians, music production teams, and investments of considerable amounts of money for recording equipment, studio time, and professional help. The original material presented in this paper, on the other hand, was

produced with little involvement of outside music professionals, no money investment, and basic equipment. The main focus of the production was the attitude, the approach, techniques and core concept of the production styles of the reference tracks. Personal taste was included in the decision-making process and the conduction of the project.

Appendix

Artist	The Chainsmokers																				
Title	Paris																				
BPM	100																				
Time Signature	4/4																				
Bar	1	5	9	13	17	21	25	29	33	37	41	45	49	53	57	61	65	69	73	77	81
Section	Intro	Verse	Chorus	Post Chorus	Verse 2	Chorus 2	Post Chorus 2	Drop	Chorus 3	M8 BuildUp	Drop	Chorus Drop									
Kick Drum		x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x	x
Snare Drum					x	x	x	x	x	x	x	x	x			x	x	x	x	x	x
Hi-Hat								x	x	x	x										
Percussions				x		x					x					x	x				
Piano	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Synth 1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Synth 2																					
Synth 3								x	x		x	x				x	x	x	x	x	x
Guitar																					
Bass		x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x	x
Vocals Female		x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x	x
Vocoder/BG Vox				x	x				x	x						x	x	x	x	x	x
Vocal Synth						x						x	x					x	x	x	x

Supplemental figure 1. Structure analysis of reference track (Paris by The Chainsmokers) against original track (Getaway)

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