CELIUM

The aesthetic of electronic dance music in a band setting.

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1.0 Introduction

Through the course of this research, I will document and reflect upon a process of creating music that transfers the aesthetic of electronic dance music to a live band-setting. Together with my band Celium I will attempt to develop a style of interplay that would allow us to play a set of music in a EDM DJ-like manner.

The process I will describe took place between the fall of 2021 and spring of 2023 the result of this process is a 40-minute concert which took place on February 4th at Kick Scene in Kristiansand.

The idea for this research came from my interest in combining acoustic and electronic sounds and the concept of reverse engineering. In a TED Talk titled "Exploring the distance between 0 and 1", Swiss drummer, Jojo Mayer discusses how the introduction of electronic genres "jungle" and "drum 'n' bass" introduced a new drumming vocabulary that surpasses the vocabulary of real drummer.

"I became completely obsessed with the idea to reverse-engineer those electronic drumbeats and play them live on an acoustic instrument. And mainly I did it because I love those beats so much that I was trying to find an opportunity to kind of consume them physically" (TEDx Talks, 2011, 8,02).

In the process of learning this new approach to his instrument, he gained not only the technical understanding, but also what he calls a stylistical abstraction, that made it possible for him to create an illusion that he could play like a machine, despite the human limitation, this music would challenge him with.

Mayer is most known for his reverse engineering of genres "jungle" and "drum 'n' bass". These genres are part of electronic dance music, however electronic dance music (or EDM) is an umbrella term which describes a variety of genres. In this research, I focus on what Ragnhild Solberg describes as "four on the floor" genres. These are characterized by the bass drum marking every beat in the 4/4 measure. These are genres such as House and Techno (Solberg, 2018, p.27)

1.1 Research questions

This dissertation is an endeavor in artistic research. Through the course of this research, I will document and reflect upon a process of creating music that transfers the aesthetic of electronic dance music to a live band-setting. In light of this process, I will attempt to answer these three questions.

- How to develop a sound for a band playing music inspired by the "4 on the floor" genres?
- How does my signature playing style adapt to the music of Celium?
- How does this artistic work connect to research and discourses on music experience?

I will reflect upon the artistic process of this research and supplement my reflection with relevant theories. I will also present an overview of my artistic background. Later I will reflect on how my playing style works in Celium and how I adapted it to the context of this research. I will present a theory from the field of EDM-music theory and discuss it in the context of my drumming style. I will also present different concepts and ideas from relevant drummers and reflect on how these reflect in my playing.

To answer the last question "How does this artistic work connect to research and discourses on music experience?", I will present theories and discourses on music experience. I chose to focus on the concept of pleasure in repetition, and music experience in context of EDM. I will the try to attempt to discuss how the artistic work in this research connects to these theories and discourses.

2.0 Methodological framework

2.1 Artistic Research

One of the earliest references for Artistic Research is Christopher Frayling's distinction between research into art, research through art and research for art (Frayling, 1993/1994). Frayling states that research *into* art is understood as theoretical research. Research *for* art as technical development work in materials and tools. In research *through* art, it is the artists distinctive experience and reflection that is communicated.

Henk Borgdorff writes about three important aspects that are present when conducting artistic research through the art.

The experimentation, meaning that the research unfolds in artistic practice. This suggests that the objective of the experimentation is to convey content, rather than test something. The involvement of persons performing the research is another important aspect. And the third aspect Borgdorff describes, is the analysis and interpretation of the research findings (Borgdorff, H., Peters, P. & T. Pinch, 2020, p.4).

This element of analysis is important, and it articulates the research. The distinction between the artwork and the analysis/reflection might imply that the investigating element of the research lies in the written analysis and interpretation of the findings. Here Borgdorff presents the idea that in artistic research, theory and practice are intertwined.

"If we acknowledge the agency of material practices and things, and if we stress the importance of studio-based, practice-based methods, and if we furthermore acknowledge that cognition is embodied, embedded, and enacted in material practices, then we should not hesitate to conclude that the reasoning is also located in those material practices" (Borgdorff, H., Peters, P. & T. Pinch, 2020, p.4).

In this research I will attempt to answer research questions presented above through artistic practice and reflection based on the practice and theory from the field.

For this research I used Research Catalouge as a tool for creating multimedia exposition/web page. This will give a clearer way of navigating through the research. The reason for publishing this thesis as a web page is the intertwinement of sound, video, and text (Borgdorff, 2020; Haaland, 2020)

In chapter *3.0 Celium,* I used this combination of sound and text. I believe that the artistic product in form of a concert recording in combination with rehearsal recordings, supplemented with written reflection and theory will answer my research questions.

2.2 My artistic background

This research is conducted through my own perspective as a bandleader, drummer, and artist. To answer the research questions and give context to the reflection part I believe it is relevant to give a review of my artistic background and pinpoint the elements that influenced my playing style and artistic values.

As a teenager I would spend a lot of time in my basement behind my drumkit, figuring out how I can create the sounds that I felt sounded like something I would hear on a Drum and Bass or techno track. Since the early years of my drumming career, I would intuitively gravitate to playing rhythms reminding of rhythms found in electronic music.

In High School I got interested in Jazz-music and started to practice jazz-drumming. Later I continued to explore new music. One of the things I got interested in at the time was the fusion of jazz music and electronica. The polish duo Skalpel and their releases; "Skalpel" (Skalpel,2004), "Konfusion" (Skalpel,2005) and "Transit" (Skalpel, 2014) introduced me to mixing acoustic and electronic sounds in a way that resonated with me. This directly connects to my band Celium and this research. Another artist that influenced my playing style and approach to music was Jojo Mayer and his band NERVE.

During my years as music student at University of Agder, I discovered Krautrock and bands like NEU and CAN. These bands introduced me to repetitive and minimalistic grooves.
I also discovered afrobeat music and legendary drummer Tony Allen which was a big influence my playing style. At the same time, my interest for electronic music got bigger and I continued to explore new genres and artists.
Other influential artists and bands I would like to mention; Four Tet, Battles and Fela Kuti.
Drummers; Zach Danziger, Erland Dahlen, Questlove.

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4.0 Reflection

For this dissertation I attempted to develop a style of interplay that would allow my band Celium to play a set of music in an Electronic Dance Music (EDM) DJ-like manner. I will now reflect upon this process in light of these three research questions.

- How to develop a sound for a band playing music inspired by the "4 on the floor" genres?
- How does my signature playing style adapt to the music of Celium?
- How does this artistic work connect to research and discourses on music experience?

My focus areas are playing with the band as well as my own role as the leader and drummer of the band, and these reflections are based on my experience as a musician and bandleader in the process.

4.1 Interplay

Whenever we play together, we enter a process of *musicking*. It is a term coined by Christopher Small. By his definition, *to music* refers to taking part in a musical performance in any form and capacity. This can be musician, both performing and rehearsing, listener or dancer (Small, 1998, p.9). In Celium, we want to engage in the musicking process together with the audience, by reacting to audience, we can alter the music played and collectively change the pace of the performance.

To answer the question "How to develop a sound for a band playing music inspired by the "4 on the floor" genres?" and "How does my signature playing style adapt to the music of Celium?" I wanted to approach the interplay as if the band was a single DJ playing a set of music live in a club. The challenge was that instead of one person mixing music live, we were a 4-piece band, where all members have their own approaches to music.

To organize the band in a way where we could function as one organism, we chose to rely on improvisation, and for the concert, we used the setlist as a map of the performance.

Improvisation is not the first thing that comes to mind, when we think of House and Techno, however through the process I learned that improvisation could free us from following a structure and allow us to focus on being in the music together and creating the Techno-like

soundscape. Most of the improvised music we played was restricted by the frameworks of House and Techno. We have also collectively learned additional frameworks through the process. By improvising together, we learned how to interact with each other musically, got better at following each other's ideas and gained a better understanding of which direction our music wants to go sound-wise. In the recording of the live performance, the sound of the band is clear and the whole 40-minutes set sounds coherent.

During the rehearsal process we had to remind ourselves to give space to each other. We practiced that by repeating short ideas over a longer period and slowly introduce small, improvised variations. We were forced to listen to each other and give space to variations coming from other bandmembers. This exercise became then the starting point for what became a type of workflow. Most of the music played in the concert are small ideas being repeated and gradually reworked with some elements being constant.

During my time as a music student, I played in an improvisational ensemble lead by Professor Jan Bang. From him I learned about what he calls transport stages in improvisation. These are places in improvisation when the ensemble goes out of one "room" or energy into an open space when there are none coherent elements. In this space musicians try to find ideas they can develop into new "rooms". These "transport stages" are important in an improvising space, however, in our practice we wanted to play continuous set of music and minimize the transport stages. As the result we worked out a combination of fully improvised pieces, tracks with a pre-planned structure and elements and parts where the only planned element was the musical key, we played in. The pre-planned elements created a sense of security in that, we had something to "fall back on", but there were also a lot of room for the music to evolve and for us to match the energy of the audience.

In John Sloboda's book Generative Processes in Music: The Psychology of Performance, Improvisation, and Composition (1988), researcher Jeff Pressing describes the concept of "perceptual traces". These represent intended movements established by practice. He suggests that with increasing experience, an improvising musician will refine his/hers "perceptual traces" and the performance will get largely automatized (Pressing J, 1988).

In Celium, we practice by improvising together. Through improvising we find movements and musical patterns that we like and that fit well in the music. These movements become perceptual traces and may lead to partially automatizing the performance. During our concert I observed that despite being free to improvise with pre-planned grooves, my brain chose to

play patterns I used multiple times during rehearsals, and I had to work through this urge to play something "safe" and try to take more radical and free musical choices.

Earlier in this research I quoted Paul Berliner and his definition of improvisation. He states that *"Improvisation involves reworking pre-composed material and designs in relation to unanticipated ideas conceived, shaped, and transformed under the special conditions of performance…(Berliner,1994, p.241)"*

In his book *Jan Garbarek, Det åpne roms estetikk (Dybo, 1996),* Tor Dybo writes that about the differences between long-term and short-term memory in a jazz improvisation context. The term long-term memory connects to musicians' skill and personal experience and are permanent. These experiences play a role in development of personal sound and are used in improvisation. On the other hand, short-term memory refers to how a musician evolves his/hers ideas and adapts them to given musical situation. It connects to the musical interaction between improvising musicians (Dybo, 1996, p.67).

This idea adds to Berliners definition where pre-composed designs can be understood as what musician already learned through practice and experience. These designs are then transformed into musical ideas which later get transformed under the musical interaction with other musicians.

In our band, each member has their own background, set of skills and personal experiences. These elements play an important role in how we improvise together. Each bandmember also has their own understanding of electronic music. Through the process I introduced the band to artist and bands from the realm of House and Techno that I enjoy. This helped to define a musical direction for the band. Artist such as Photek, Burial and Four Tet were a big inspiration for me when exploring electronic music, and their signature sound resonates with me. There are also bands that play House and Techno live in a similar way as Celium that we listened to during the process. I will present some of them later in the chapter 4.5.

I quickly realized that distribution of roles in the band can help us to create a clearer idea of how to play together. In a more traditional band setting, the instruments have their own specific roles. The drums and bass are responsible for laying a groove and keeping time, the piano plays harmonies and in some instances, melodies. In jazz a horn is often the soloist and play the lead melody as well as improvises around the form of a tune. How do you specify roles for a band that plays music that would usually be performed by one person? The way we layed out the roles in Celium is like that of a jazz band. Drums and bass are responsible for

laying the groove and keeping the forward motion, me, and Noah focus on creating dynamic forward motion and creating additional textures on top of the groove.

The trumpet and keys have a similar role, they both operate in the same frequency spectrum and can play both harmonies and melodies. Anders uses his Ableton Live setup to create pads and other effects while Harsha uses his synthesizer and electric piano for the same purposes. They also use their instruments to create textures and effects.

Improvisation and role distribution are elements that connect to interplay and the way we interact with each other during performance. I will now address more genre-specific aspects of our music and process.

4.2 Genre-specific elements

In her article titled "Waiting for the bass to drop", Ragnhild Solberg writes about repetitive structures in EDM. In EDM, musical structures are often highly repetitive. A basic loop of 2 or 4 bars is repeated and developed through the course of a track.

"The groove consequently expands in textural density rather than length. With its repetitive grooves consisting of a complex web of rhythmic and melodic structures-built layer upon layer with variation, but not too much, one experiences how one can evolve with the groove and inside the groove" (Solberg, 2014, p.66).

Repetition plays an important role in Celium's music. It creates a trance-like space where both the band and audience can be in the music together. Repetition in our music creates a direct link to the "four on the floor" genres and in combination with the acoustic and live aspects of the band, creates an unusual and interesting soundscape. Repetition has also a narrative role.

Luis Manuel Garcia suggests that "most EDM tracks offer many perceptual 'points of attention,' whether implied in minimalist textures or fully fleshed out in thicker ones (Garcia, 2005, p.8)".

Repetition allows the listener to create pathways between these points, and as he puts it "mapping out a landscape of shifting creation pleasure while prolonging the process pleasure of an ever-changing same (Garcia, 2005, p.8)".

He builds this idea on the works of Mark Spicer and Mark Butler. In their works they present the term "loop" and use it for describing repetitive musical patterns.

In his article on accumulative form, Mark Spicer defines this form as the technique of building up a groove gradually. He "defines 'groove' as "a tapestry of riffs" and defines 'riffs' as atomic musical ideas that normally repeat (Garcia, 2005, p.7).

Mark Butler discusses the importance of looping and argues that cyclical repetition allows for the perceptual separation of EDM's complex timbral and rhythmic layers.

The repetitive nature of Celium's music offers a wide array of those points of attention. All the band members contribute to this by introducing musical and textural variations that repeat. It might be changing the pattern played on hihat-cymbals, adding ring-modulator on bass to take the bassline to a higher intensity level or introducing a new melodic motif on the piano. The difference between playing a pre-programmed repetitive pattern on a machine and the pattern being played on live instruments, is that we have to physically play each repetition on our instruments. That being said we do not to play like a machine and rather use the fact that we play live, and we allow ourselves to make variations and adding/subtracting elements more freely.

Here I would like to refer to Jojo Mayer's TED Talk that has been important for the creation of this research and that I presented in the introduction part of this dissertation.

Mayer discusses how drum machines and computers compute tasks by deciding between "yes" and "no" which relate to "0" and "1" in digital language. While producing a piece of electronic music, the speed of decision we make does not have an outcome on quality of the finalized product. On the other side, when playing music in real time, and especially when we improvise, the decision-making process gets sped up and we enter a zone whereas Jojo Mayer explains "it goes beyond "yes" or "no". This is a zone that a machine cannot compute yet (TEDx Talks, 2011, 10.45). He later describes this "zone" as an out-of-body experience, where it's possible to surrender our intentions and let intuition take over.

This connects to how we make musical decisions while playing and how we react to each other's musical ideas when improvising.

One could argue that with the technological tools available, we may achieve a point where the distinction between machine and a musician will be close to none. The popularity and advancements of the AI technology may even speed up this process. This opens for new and relevant discussion in the world of art.

Playing repetitive music on instruments presents its own set of challenges. Even though repetition gives us more time to decide where to go next musically, it also demands a certain technical surplus and a high level of immersion. It is technically difficult to maintain a forward motion when elements are repeated for extended periods of time. However, by embracing the human element and not playing like a machine, we can maintain the forward motion more easily.

Another element that connects our music to the electronic four on the floor genres is the "drop". In EDM, the technique of "drop" is used to shape musical expectation and intense reaction.

A drop can be broken into three sections. Breakdown, buildup and drop. The breakdown breaks the groove and the intensity of the track down. This section can be characterized by the texture of the track becoming thinner or entirely changed. Here, the bass drum and bass might stop playing. The buildup section builds up to peak where the bass and bass drum are re-introduced, and the intensity reaches a new high. This peak where the bass and bass drum come back is described as a "drop" (Solberg, 2014, s.67).

We use this technique to create tension in our music, it can be pre-planned or fully improvised. When playing a pre-planned drop section, we can use it as a musical cue that in addition to engaging the audience, helps us to navigate in the music. When we play freely, I can initiate the breakdown section by subtracting the bass drum or giving a cue to Noah and subtract both the bass drum and bass guitar. We collectively continue to the buildup section, and then I have the responsibility to cue the band for the drop section. The band will often pick up on the cue and add another element to create more intensity in the drop.

4.3 Drumming style

My drumming style in Celium is a combination of elements borrowed from electronic music as well as other elements from other genres that I practiced and worked on through my years as a musician. Firstly, I want to discuss the role of my drum-setup in the context of my drumming style. It is a hybrid drum setup, meaning it combines electronic and acoustic elements and sounds. As mentioned earlier, my main goal was to combine triggers and electronics with acoustic drums and maintaining my freedom around the drumkit. I wanted to have the possibility to use the techniques from the realm of acoustic drums, but also compliment these techniques with electronic sounds. From a technical perspective, the placement and use of triggers allows me to play the electronic sounds as if they were acoustic instruments. I could incorporate use of audio effects that I could modulate while playing to create even more complex sounds, however I chose to keep it simple and minimize the use of electronics to simple triggers. In the four on the floor genres, the bass drum plays a central role in the music, that's why I chose to use a single bass drum trigger to play purely electronic bass drum sounds. This bass drum sound anchors my overall drum sound in the realm of electronic music. Another aspect of my setup that is worth mentioning is a technique I borrowed from Jojo Mayer which I described in the chapter 3.3. The cymbal-stack with a contact microphone trigger placed above my snare drum is used for a clap sound. Because of the placement of the cymbal, I can choose to either strike the cymbal/trigger itself or hit both the cymbal and the rim of my snare drum at the same time. This connects to the idea of complimenting techniques from acoustic drumming with electronic sounds.

As mentioned earlier, the rhythmic and melodic structures in EDM are built layer upon layer. Katharina Ernst is a Berlin based artist and drummer. During the event "Loop summit 2015" she took part in a drummers panel where the theme was acoustic drummers and electronic music. Ernst is known for her minimalistic and pattern-oriented playing style. During the panel she talked about how she approaches drumming in her project VENTIL. She mentions that the complexity in her drumming does not refer to level of virtuosity, but rather the complexity in terms of "layering different patterns and constructing in a three-dimensional way of thinking (Ableton, 2016, 2:30)"

The idea of layering patterns is central in my drumming for Celium. Through the process presented in this research I managed to internalize this concept and it can be heard in the music of Celium. This idea also refers to the way we layer elements as a band.

According to Peter Valsamis, we can distinguish three different modes of drumming that emerged from the advent of electronic musical devices.

Physical drumming which takes place in real time and requires a physical connection between musician and the sounding body.

Synthetic drumming where use of mechanized or electronic instrument creates a rhythmic pattern and does not involve a live human performance. Valsamis presents metronome and a step sequencer as examples of simple synthetic drums.

 The third mode that Valsamis presents is *fixed drumming*. This mode includes drumming event that exist at another time and space. Exampled used here are a recording of a drummer on jazz record but also a sample of a drum. Both examples can be considered as *fixed* (Valsamis, 2001, p.62).

When playing with Celium I combine electronic and acoustic sounds, all the sounds are played by me physically hitting the instrument (this also applies to the electronic sounds played by hitting a trigger). To put it in the context of Valsamis' drumming modes, I execute physical drumming. Use of synthetic drumming in this project could be for instance to play with a drum sequencer or pre-programmed tracks. However, I did not use any of synthetic elements. What is interesting is the third mode that Valsamis present. The fixed drumming that refers to a recording or a sample. The idea of this mode is that a sound is in a way frozen in time. On a sample of a drum recording, we can not only hear what is being played, but also the acoustics of the room, the energy encapsulated in the recording and the "uncontrollable" by-products of musician's mind and muscular activity.

In my playing I use one-shot sounds like for instance a clap sound. These sounds are short, processed and do not contain a lot of musical information. I do not use any form of longer pre-recorded loops, but the idea of sampling is present when I am playing. Thinking like a sampler is something I try to be aware of in my playing. It is not about trying to be a sample of a drummer, but rather trying to create an illusion that what I play on drums is a loop that

has a clear point when it repeats itself. Since I physically play the instrument, the loop won't be the same each time, but the feeling of it being looped is something I try to achieve. The fluctuations of physical drumming make the drum patterns more alive. I can also alter the expectations of the audience by playing ahead or behind of the beat, this is another concept that makes the patterns feel more alive (Valsamis, 2001, p.64).

According to the book "Musikk og Hjernen", our perception of rhythm is affected by our native language. In the book, Are Brean and Geir Olve Skeie explain that the first language we learn affects our perception of rhythm. They use Czech composer Leos Janacek as an example. Rhythms in his music have a lot of commonalties with the Czech language (Brean & Skeie, 2019, p.82). I was born and raised in Poland and did not move to Norway until I was 14 years old. Therefore, my perception of rhythm is affected by the sound and rhythm of the Polish language. This also connects to the rest of the band. Harsha's native tongue is Sinhala, and Noah, although he says that Norwegian language was dominating in his upbringing, he also got exposed to a lot of Thai and English through his family.

4.4 From rehearsal room to live result.

In this chapter I would like to reflect upon the live performance and discuss the challenges we experienced when performing the music live.

After the performance I realized how big of a factor nervousness can be. As a musician I experienced performance-related nerves multiple times, but for this performance the nerves might have been at a higher level, because of my personal attachment to this project. One of the performance elements affected by stress was the length of the pieces. We planned to play for 60-minutes, but the outcome was a 40-minute concert. In the rehearsal we managed to stay in a "room" of energy for 15-20 minutes without feeling the need to go to another "room", during the performance the length was affected by nerves and feeling that the audience may be bored. Based on the feedback received after the concert I learned that the audience could handle more repetition and stay in one "room" for a longer period. We will take that into consideration for future performances.

Another aspect of performing that we became aware of during the performance was communication on stage. With in-ear monitoring and the loudness of the music, it was

difficult to get the attention of the band at times. When rehearsing I would yell loudly to cue the band in. This worked well for timing musical drops and transitions. During the performance however, we could not hear clearly what was happening on the stage. Visual cues such as waving or raising hand were also difficult to execute because of the way I play the drums in Celium. Most of the drumbeats played are busy and build on a lot of subdivisions. All my limbs were engaged in the playing so giving cues with my hands was not something I could do easily.

We had some pre-planned musical cues that worked well for maintaining the flow in the performance. On the setlist I put initials of musicians who would initiate a piece. The setlist also included which parts of the set would be cued by me. An example of a musical cue is the bassline in the last part of the concert. The bassline is introduced around 31:10 on the concert recording. This bassline cues the last piece titled "Hyphae Jive". Due to miscommunication however, it did not go as planned. I had to visually cue the band with my hand to start the music again.

The communication issue is something that we need to solve for our future performances. Some of the solutions that could be relevant can be having a microphone that can be used to communicating on stage or creating a cue system for the band. I also believe that by practice and being aware of this issue we can learn to be more attentive and look around more to communicate.

The communication between the band and audience was also difficult to achieve. Through the in-ear monitors, we only heard the instruments. It separated the band from the audience and felt like we were being in our own bubble that the audience observed. It was not optimal for the way we intended to perform. As mentioned in chapter *3.1*, Celium wants to interact with both music and the audience to match the performance to the atmosphere and energy of the room.

Christopher Small mentions the role of the listener in a musical performance.

"…There may not even be any fixed and stable musical work, so the performer creates as he or she performs while the listeners, should there be any apart from the performers, have an important and acknowledged creative role to play in the performance through the energy they feed (or fail to feed), selectively and with discrimination, back to the performers" (Small, 1998, p.8).

Putting the band in the in-ear monitor bubble made it difficult to connect with audience's energy. For future performances I would like to try placing a microphone directed towards the audience. This will allow us to hear the reactions and make it easier to reflect their energy.

Last aspect of live performing I would like to discuss is how much risk are willing to take live and in rehearsal. As an improvising band we encourage each other to take risks, initiative and radical choices while playing. It plays an important role in the way we want to perform and how the interplay works and makes the music more exciting and unpredictable. During the performance however, it was more difficult to let go of comfortable patterns that we know fit in the soundscape. It might be caused by nerves and communication issues.

In the future, I will be more aware of this challenge and try to avoid this problem in future performances.

4.5 Music of Celium in a broader context.

The idea of combining elements of electronic and acoustic music has been around for quite a long time. In 1992 Miles Davis released his final studio album "Doo-Bop" (Miles Davis, 1992). This album combined Davis' frenetic improvisation with tight hip-hop loops.

In Norway in the 1990´s, artist such as Nils Petter Molvær and Audun Kleive were pioneering the blend of electronic and acoustic music. The 1998 album "Khmer" (Nils Petter Molvær, 1998) exists in a borderland somewhere between jazz, ambient, techno and trance with elements of world music. Another album by Molvær, "Solid Ether" (Nils Petter Molvær, 2000) further expands the concepts from "Khmer" and continues to blend the electronic sounds and textures with acoustic instruments.

Audun Kleive's album "Bitt" (Audun Kleive, 1997) is another example of this genre-combining realm of Norwegian music, where Kleive in collaboration with Bugge Wesseltoft play with the ideas form the world of jazz, drum 'n bass and hip-hop.

In the 1960´s and 70´s the Krautrock-movement emerged in Western-Germany. It introduced a plethora of new sounds and approaches to art. Bands like CAN and NEU! Were known for their collective improvisation and repetitive music. On the track "Hallogallo" form their debut-album "NEU!" (NEU!, 1972) creates a minimalistic and repetitive soundscape. NEU's drummer Klaus Dinger is considered to be the pioneer of the repetitive "Motorik" pattern which in "Hallogallo" creates a feeling of never stopping forward motion. Both CAN and NEU! Introduced monotonous and repetitive drumming style. In the 2009 documentary

"Krautrock: The Rebirth of Germany", CAN's drummer Jaki Liebezeit talks about how he discovered his monotonous and repetitive approach to drumming.

"…A guy came to me and said, "you must play monotonous". He said it with a voice and an expression, so I was impressed. I don't know if he was a kind of freak. Maybe he had taken LSD trip or something. He was completely stranger...so I started to repeat things (Whalley, 2009)".

These artists and bands all connect to Celium and create a historical framework for our music to exist in. I already mentioned NERVE and Jojo Mayer as a direct link to creation of Celium. Combining the DJ-set approach connects Celium's work to other similar projects from the newer times. Elektro Guzzi is an Austrian trio playing analog techno-music. Their band setup differs from Celium. Their band consist of guitar, bass, and drums. Their sound is more focused on the German rigid techno music whereas Celium is more open in terms of genres and how strict we are with the repetition Elektro Guzzi's sound can be perceived as more aggressive and industrial. Another similar band are Klangphonics and Japanese trio Nisennenmondai.

4.6 Research and discourses

In this chapter I will present how this research connects to the broader research field of music experience. I will present some theories and pinpoint relevant perspectives on the discourse. I would like to start with the research on peak experience and how it corelates with Celium.

The term *peak experience* can be defined as "the most wonderful experience of your life…" (Maslow,1999 p.83). According to Maslow's findings, these experiences were most easily achieved through music and sex. In her doctoral dissertation, Ragnhild Solberg discusses the interrelation between bodily and affective engagement and its relevance to understanding of pleasure in music (Solberg, 2018, p.2). She explains that research into peak experiences in music often focus on qualitative material, where individuals describe their experience with music (Solberg, 2018, p.18). In her studies on Peak-pleasurable experiences, Solberg among other things, focuses on how the musical pleasure relates to structural moments in EDM, such as the break routine. Her finds include that peak-pleasurable experience is expressed in people's movements. Another study she conducted, indicates that in a listening setting this experience coincides with participants subjective feeling of pleasure and desire to dance.

Another element that connects to research on peak experience is pleasure. The research in pleasure and music is a prominent subject in the discourse on the embodied experience in music. Maria Witek is one of the researchers in the field of psychology, cognitive neuroscience, and philosophy of musical experience. In her doctoral thesis she studies the relationship between body-movement, pleasure, and groove, she also focuses on rhythmic complexity in form of syncopation and how its contribution to groove experience (Witek, 2013, p.36-37).

Luis Manuel Garcia is another researcher in the field of EDM experience. In his article from 2005 which I presented earlier, he writes about pleasure and repetition. He builds off Karl Bühlers tripartite system of pleasure, which consists of three types of pleasure; satiation pleasure, function pleasure (which Garcia calls for process-pleasure) and the pleasure of creative mastery (which Garcia calls creation-pleasure). He suggests that process pleasure connects to repetition in that repetition functions as a process in itself. His understanding of function pleasure (process-pleasure) connects to both performer and the listener/dancer (Garcia, 2005).

This artistic research connects to the research and discourse on embodied experience in EDM. Garcia's theory of pleasure in repetition connects directly to Celium. In our research project, we attempt to use repetition as a medium for creating points of attention in the repetitive pattern.

Another relevant perspective on music experience is the technological perspective. Here, the focus area is the role of technology in shaping the music experience.

Mark Butler is one of the researchers that focus on music technology, structural and technological aspects of EDM. His book "Unlocking the Groove" is an academic work dealing with the subject of EDM from technological and theoretical perspective (Butler, 2006).

As a research project, Celium connects to the technological perspective on music experience. The theories and concepts presented in this research are directly discussing the theoretical aspects of EDM and music performing.

A study conducted by Nikolaus Steinbeis and Stefan Koelsch in 2008, shows that when listening to music composed by a human being, a network in our brain is activated. This network is often associated with "theory of mind" which in the study refers to placing oneself

in another person's place. On the other hand, machine-made music does not activate this network (Steinbeis, Koelsch, 2008). This study is conducted by Max-Planck Institute for Human Cognition and Brain Research. However, it opens for a relevant discussion in the realm of music experience. My research deals with transferring the aesthetic of programmed music into man-made music. It opens for discussion and connects to the discourse on music experience in terms of playing music associated with machines, live on instruments.

5.0 Conclusion

Through this research I discovered that in order to develop a style of interplay, the most important element was the improvisation, and creating optimal space for music to exist in. Together with my band Celium I managed to establish a type of workflow which allowed us to create and perform together with more freedom. The improvisation and workflow were then supplemented with more genre specific elements from the realm of electronic music.

After presenting this research in a context of historical framework and the discourses on music experience, I gained a new perspective on this project. I want to continue working with Celium and experimenting with new approaches to repetition, improvisation and electronic music. The concept of thinking like a sampler that I discussed in the chapter 4.3 is something that I would like to continue working on. It is only the beginning of the journey.

Bibliography

Ableton. (2016, May 20th). *Drummers Panel: Katharina Ernst | Loop* [Video]. Retrieved from https://www.youtube.com/watch?v=GPMhQ38JsEQ&t=3s&ab_channel=Ableton

Alterhaug, B. (2004). *Improvisation on a triple theme: Creativity: Jazz Improvisation and Communication*

Audun Kleive, (1997), *Bitt* [Album], Jazzland Recordings.

Berliner, P. 1994: Thinking in Jazz. University of Chicago Press, Chicago II

Borgdorff, H., Peters, P. & Pinch, T. (2020). Dialogues between Artistic Research and Science and Technology Studies. New York & London: Routledge.

Brean, A & Skeie, G, O. (2019). *Musikk og hjernen: Om musikkens magiske kraft og fantastiske virkning på hjernen*. Cappelen Damm AS.

Butler, M, J. (2006). *Unlocking the Groove: Rhythm, meter, and musical designs in electronic dance music*. Bloomington, Ind.: Indiana University Press.

Dybo, T. (1996). *Jan Garbarek-Det åpne roms estetikk*. Pax Forlag AS.

Frayling, C. (1993/1994). Research in Art and Design. Royal College of Art Research Papers, 1(1), 1-5.

Garcia, L, M (2005) *On and on: Repetition as Process and Pleasure in Electronic Dance Music*. *Music Theory Online*, 11(4).
https://mtosmt.org/issues/mto.05.11.4/mto.05.11.4.garcia.html

Haaland, I (2020). *Intercultural Musical Collaboration: Towards a Global Sound* [Doctoral dissertation, University of Agder] https://globalsoundphd.com/

Maslow, A. H. (1999) *Towards a psychology of being* (3rd ed.). Princeton, NJ: John Wiley and Sons

Miles Davis, (1992), *Doo-Bop* [Album], Warner Bros. Records.

NEU!, (1972), *NEU!* [Album], Brain

Nils Petter Molvær, (1998), *Khmer* [Album], ECM.

Nils Petter Molvær, (2000), *Solid Ether* [Album], ECM.

Pressing, J. (1988). "Improvisation: Methods and Models." In Generative Processes in Music: The Psychology of Performance, Improvisation, and Composition, edited by J. Sloboda, 129–178. Oxford: Clarendon Press.

Schwartzberg, L. (2019). *Fantastic Fungi* [Documentary]. Moving Art.

Skalpel, (2004), *Skalpel* [Album], Ninja Tune.

Skalpel, (2005), *Konfusion* [Album], Ninja Tune.

Skalpel, (2014), *Transitl* [Album], PlugAudio.

Small, C. (1998). Musicking: The Meanings of Performing and Listening. Middletown: Wesleyan University Press.

Solberg, R. (2018), *Experiences with electronic dance music: A Multi-method stud on Associations between Musial Characteristics, Embodiment and Peak-Pleasurable Response* [Doctoral Dissertation, University of Agder],

Solberg, R. (2014), *Waiting for the bass to drop-Correlations between intense emotional experiences and production techniques in build-up and drop sections of electronic dance music. Dancecult: Journal of Electronic Dance Music Culture.* 6(1): 61-82
DOI 10.12801/1947-5403.2014.06.01.04

Steinbeis, N., & Koelsch, S. (2009). Understanding the intentions behind man-made products elicits neural activity in areas dedicated to mental state attribution. *Cerebral cortex (New York, N.Y. : 1991)*, *19*(3), 619–623. https://doi.org/10.1093/cercor/bhn110

TEDx Talks. (2011 November 6th). *Jojo Mayer - Exploring the distance between 0 and 1* [Video]. Retrieved from https://www.youtube.com/watch?v=KExLCJAuTXA&t=705s

Valsamis, P. (2001). Machines Drumming. Convergence, 7(1), 61–73.

Whalley, B. (2009). *Krautrock: The Rebirth of Germany* [Documentary]. BBC.

Witek, M. A. G. (2013). *'…and I feel good!' The Relationship between Body-Movement, Pleasure and Groove Music*. [Doctoral Dissertation, University of Oxford].