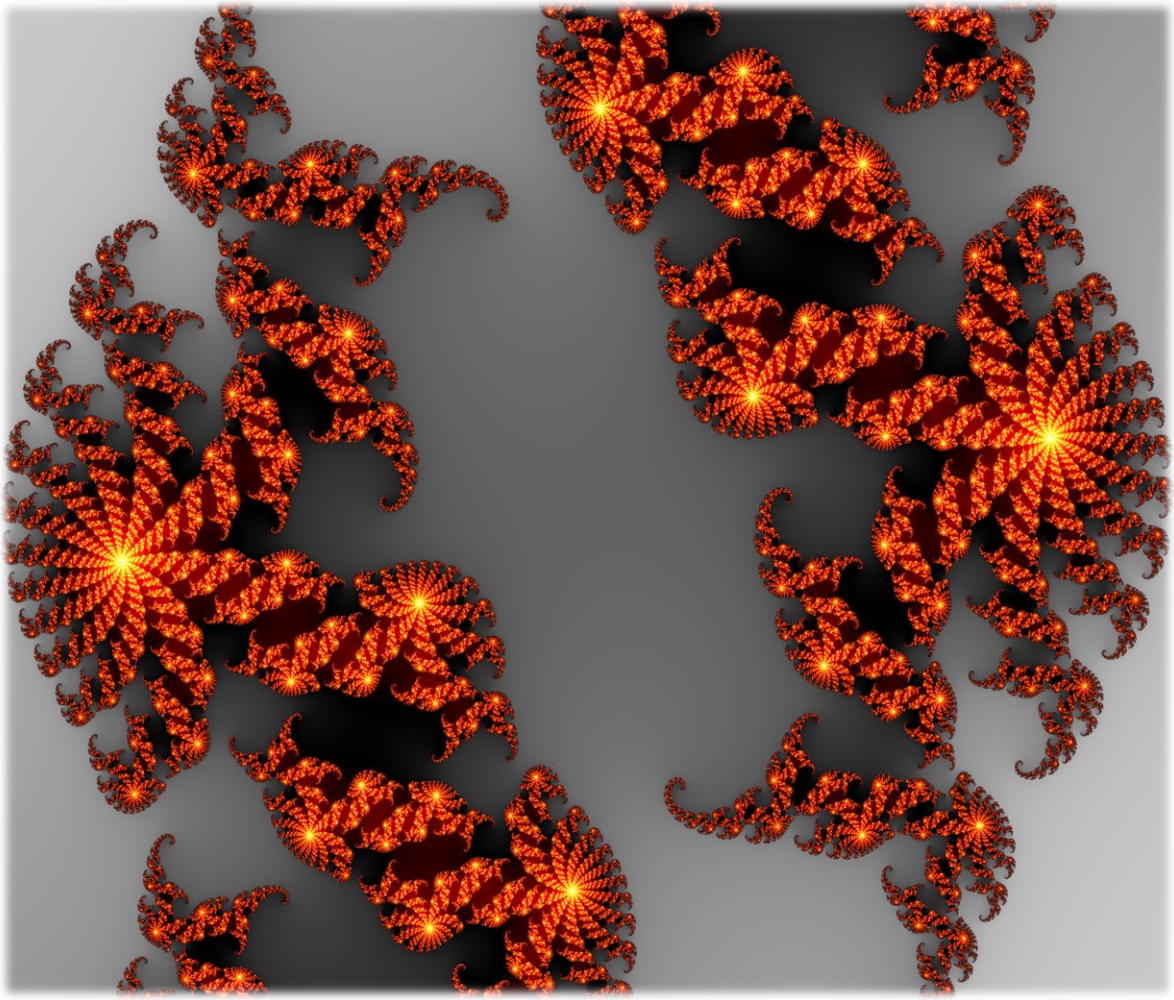

Edge of Chaos

EXEGESIS

Ian McElwaine | Fundamentals of Creative Music Practice | January 2023

Project Summary

The universe is, fundementally, an uncertain and chaotic place (Oppenheim & Wehner, 2010). Fractal patterns, which are an expression of this underlying chaotic principle, are self-similar patterns that contain infinite variation. They appear in nature in ways such as the arrangement of flower petals, and the spiral arms of galaxies (Ball et al. 2014). Fractal patterns also emerge in the creative arts. For example, genres in art and music are a way of grouping self-similar, yet unique works. Cover versions of songs are another example of this. A performer who covers a popular song will often put something of themselves into their performance. This could be a different interpretation of melody, harmony, or by using different instrumentation. The experience for a listener is a familiar, yet unique musical experience.

By researching listening habits on Spotify, I discovered that many people are choosing to listen to chaotic sounds such as white noise or ocean sounds instead of music (Tapper, 2022). This made me wonder if some people were dissatisfied with the current trend of 'impossibly perfect' music production (Rogers, 2019), and 'definitive' recordings of songs. My research also showed that the number of copyright infringement lawsuits in the music industry was having an impact on popular musicians creative output, and was inhibiting the creation of unique, yet similar works (Gardner, 2013).

This project attempts to address both of these trends. Through the production of three musical works entitled: Chaos, Order, and The Edge of Chaos. I explored ways of incorporating chaotic sounds and rhythms while being constrained by sense of musicality, and attempting to evoke a feeling in the listener that corresponds to the title of the work. This license allows other musicians and performers to freely remix, adapt, create derivative works, and unleash a little bit of creative chaos.

Situation of Practice

This project was an opportunity for me to experiment with ways of including chaotic elements in music production. This is not a new idea. People have been exploring the chaotic potential of music in all kinds of ways. This includes:

- Compositional techniques
- Mathematical analysis (Sakharwade & Dasgupta, 2014)
- Algorithmic and AI generated music (Ben-Tal, O. et al. 2021)

As part of my research into chaotic elements in music, I discovered the music genre called 'Lo-Fi'. This genre often has arrhythmic drumbeats, uses low fidelity samples, and/or filtering to give a somewhat 'vinyl' or analogue feel (Neal, 2022). Listening to some music in this genre helped me find more ways to work some musical chaos.

Creative Process/Methodology

The purest sonic expression of chaos is white noise, or 'static', so for the pieces entitled 'Chaos' and 'Edge of Chaos' I was very interested in discovering creative ways to use white noise in music production. I decided to begin by creating a drum rack in Ableton Live based on white noise. I used NCH Tone Generator to generate a sample of brown noise (below), and then used NCH WavePad to manipulate this sample in various ways. I created sounds that are analogous to a kick drum, snare, high-hat, etc, to create a complete drum rack.

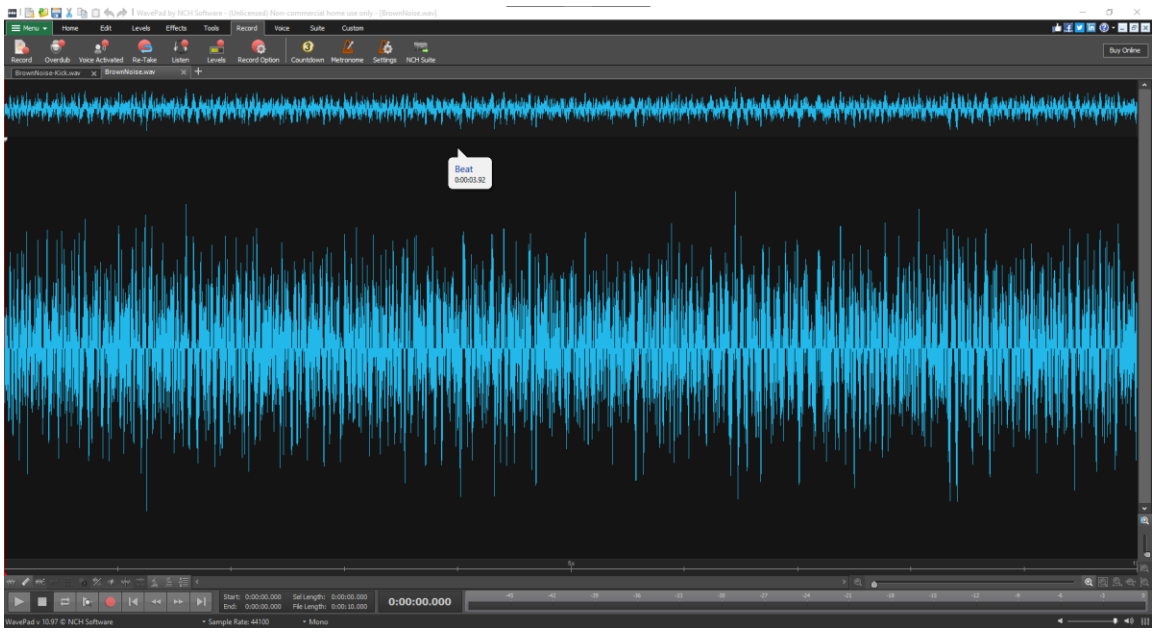

Figure 1: Brown noise generated by NCH Tone Generator

Since these sounds originated from chaotic white noise, it is very likely that these chaotic drum rack samples are completely unique and have never been heard before. For example, a visual comparison between the chaotic kick sample with a 909 kick sample is shown below. It's apparent that the 909 kick has perfect symmetry, but the chaotic kick has very angular and irregular waveform.

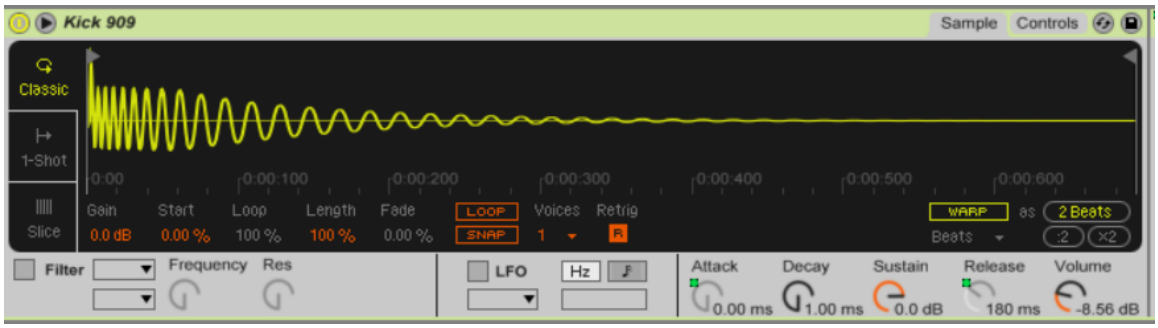

Figure 2: 909 kick sample

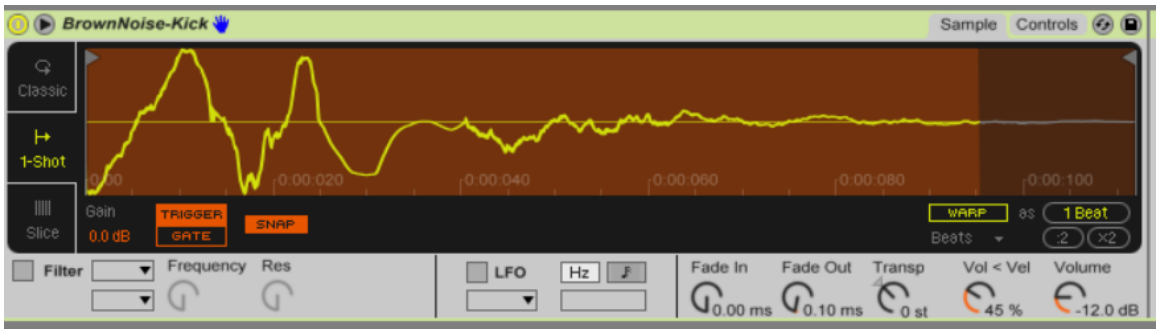

Figure 3: 'Chaotic' kick sample

Once I had my 'drum kit', I sketched some spectromorphology inspired designs on paper, then structured the three pieces in Ableton Live. I experimented with the textural possibilities of white noise and created a variety of percussive patterns. Using my spectromorphology 'sketches' as a guide, I experimented with instrumentation, harmonic patterns, and audio processing that suited the feel for each piece. I also looped various sections and improvised melodic, and counter-melodic ideas on a MIDI keyboard until I found things that I liked. I really enjoy the hands-on feel of a physical interface when making music, so I mapped a MIDI controller with knobs and sliders to various effects and levels in Ableton Live and recorded 'automation' tracks. This also let me adjust multiple effects and levels parameters at the same time, which was convenient and felt very satisfying,

Timeline Plan

ORIGINAL TIMELINE PLAN

My original timeline plan was very ambitious and didn't consider the disruption to my study schedule due to the Christmas and New Year period. This, in addition to my other study and work commitments led me to review the scope of my project and decide what I was trying to achieve with it. My original plan included recording vocals and saxophone, but time constraints, and the lack of a suitable recording space led me to remove this from the scope of the project.

Date	Description	Status
11/12/2022	Complete the composition	Assigned
11/01/2023	Complete vocal and saxophone recording	Assigned
22/01/2023	Complete exegesis	Assigned
05/02/2023	Complete mixing and mastering	Assigned

ACTUAL TIMELINE

My failure to secure a suitable recording venue, and an approaching deadline caused me a great deal of stress. Once I decided to remove the audio recording component from the production, the work proceeded much faster. I started to rethink the composition from one that focused on melody and harmony, to one that focused on the spectromorphology (Smalley, 1997) of each piece, and using musical techniques to give meaning.

Date	Description	Status
15/01/2023	Complete a spectromorphology based design on paper	Done
22/01/2023	Complete exegesis	Done
05/02/2023	Complete production	Assigned

Critical reflection

I have an unfortunate tendency towards perfectionism. I sometimes set impossibly lofty goals for myself and then get depressed when I fail to achieve them. The original timeline of this project was impossibly short for what I hoped to achieve. Acceptance of this fact came slowly to me, but eventually I realised that I had creative control of the project, and I was being stressed for no real reason. I was particularly inspired by Pablo Picasso's quote that "...I never do a painting as a work of art. All of them are research..." I decided that this project was an opportunity to research the musical possibilities of chaos, and use a spectromorphology approach (Smalley, 1997) to music production.

Audience/End User

This project is primary aimed at the communities of musicians that compose and perform. It aims to raise awareness of different copyright licensing systems and the chaotic potential of music in these communities. Once the production of the pieces is complete, I will be uploading them to YouTube, then post them in Facebook musician groups along with a brief explanation of the project aims.

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