

SEPARATING THE STRAINS

MTID BFA THESIS ESSAY AND ORIGINAL SCORE BY

Tal Katz

The abstract nature of sound allows for it to completely subvert traditional critical structures. Practices of recording and archiving sever the waveform from the source, rendering it untethered – breaking the temporal bond of referentiality and allowing for birth, creation and world building.

The concept of world building typically has its associations with written text, such as the work of Frank Herbert and Ursula K. Le Guin. Just in the same way these artists have crafted worlds that became more than their texts, musicians and sound artists have successfully created living, breathing ecosystems in their own right.

In the past couple years I have been exploring the concept of sonic world building. World building can occur within pieces by creating immersive landscapes, creating depth and movement, processing sounds, and stretching and chopping waveforms so that there is no way to go back to the source. This process is a synthesis and complete creation that is by nature queer. Because sound can command and manipulate physical space, it becomes a fluid and uncontrolled channel of reclamation.

This process becomes more realized and powerful when mediums are combined. Particularly in film, the combination of both visual and sonic narratives allows for complete immersion. Films like *Monos* (by Alejandro Landes, and scored by Mica Levi) and *Moonlight* (Dir. Barry Jenkins, scored by Nicholas Britell) use sound as a narrative elements, emotional tools, and even as characters. Sonics are paired with visuals symbiotically so that there is no dominant form; both are equally essential tools of narrative world building.

Separating The Strains:

I was first approached about this *Separating The Strains* in the summer of 2020 while in Copenhagen. I was in the middle of a month of spiraling about not working and feeling a little behind career wise. I decided to reach out to a few people whose work I really admired, one of them being James William Blades. James is a composer, producer, archivist and sound artist whose philosophy inspires me. He composes and produces for film, art exhibitions, sound installations and fashion. James' work fuses composition and soundscapes to create detailed sonic narratives. The first time I heard James' work was in my friend Rhea Dillon's piece *The Name I Call Myself*. I immediately felt connected to the work because I had never seen anyone create such intricate soundscapes that were essential to the piece. Hearing James' work completely changed the way that I thought about scoring. The classical song form that always felt so limiting to me is for the most part discarded in his work and what is left is really powerful. Each of his compositions are their own world. Hearing his work felt affirming and allowed me to develop my own voice without feeling self conscious about checking off certain boxes. I finally felt able to create the work I wanted to without feeling like it was an illegitimate form of composition.

James and I had been spoke for a year or so about music, and when I finally reached out and asked if he needed an assistant, we already had a mutual respect for each other. Immediately he was so generous with his time, and after one call we began to work together. We began figuring out a system for trading work back and forth as everything at the time was remote because of the pandemic. Eventually James asked me to take over a project he had started some

years back. The project was a film that James had begun collecting audio for but no longer had the time to work on because it had taken longer to finish the picture than expected. I took on the job, with James mentoring me and overseeing the score.

Separating the Strains is by Caroline Sharp and Sophie Daniel about two sisters, Chelsea and Tamsin Leyland who both have Juvenile Myoclonic Epilepsy. JME is the most common epilepsy syndrome: a neurological disorder characterized by unusual nerve cell activity in the brain that causes unpredictable seizures. Epilepsy can be life altering and debilitating depending on the severity of the condition.

The documentary follows Tamsin and Sophie's lives as they both navigate the world with this disease. Sophie lives in New York and has a much less severe case and has transitioned to using just medical cannabis to stop her seizures, while Tamsin is in the UK in an assisted living home. Tamsin's condition makes it impossible for her to live alone; she is under constant care and has multiple seizures a day. A large part of the film is critique on western medicine. The laws in the UK make it impossible for Tamsin to have access to medical marijuana and instead she is on a cocktail of drugs that cause severe side effects. Sophie has been a medical marijuana advocate for years and she is trying to make it possible for Tamsin to have access to natural medicine because the side effects of some of the medications that are prescribed for epilepsy can be as debilitating as the disease. For a lot of the film, and for her life, Tamsin is incredibly dazed and suffers neurological symptoms due to the medication. As much as *STS* is a documentary about a difficult medical condition, it is also a documentary about sisterhood, connection and care. I wanted to keep all of this in mind while creating the music.

Process:

Since this project is rooted in both science and emotion I wanted to create a score that was both well researched and sentimental. I was given readings on epilepsy and a folder of field recordings from a sound healing session, sound therapy workshops, wild sound from the shoot, and cello and harp recordings that James wanted me to incorporate into the score.

I began by researching epilepsy and studying the readings to see if there were elements that could be interpreted musically. In my research there were three main elements that stood out: The link between music and epilepsy, Sonification of EEG data, and pre-seizure auditory hallucinations.

Sonification:

Sonification is the process of converting data into sound; more specifically, mapping aspects of a data set to produce sound signals. There can be multiple variables and functions that affect the product of data sonification. Just like any other scientific process, in order for it to be considered a legitimate process, it must have reproducibility and intelligibility. One of the main reasons that sonification is considered useful is the nature of human auditory perception. Visual perception tends to be more directed while auditory recognition of multiple inputs can happen simultaneously in a parallel streams. Sonification of EEGs has been very helpful in detecting abnormal brain neural activity in patients with epilepsy.

I decided to analyze different EEG scans of people with epilepsy having a seizure and use those in a piece (I will go into more detail about this later).

The link between music and epilepsy:

The sonic effects on people living with epilepsy is fascinating because studies indicate that music can be both an epileptogenic trigger as well as an anticonvulsant. In some cases of epilepsy, musical cues can act as triggers. For every person it is different but triggers have been based on genre, a specific instrument or even a composer. Just as it has the ability to cause an episode, music has been known to actually reduce seizures in patients with epilepsy. Mozart Sonata K448, specifically, has become somewhat of a scientific phenomenon. Studies have shown that listening to this piece everyday works as a type of anticonvulsant and has reduced seizure after long term listening. Other studies have shown that listening to music played at a moderate tempo without any abrupt stops or changes in dynamics can aid in normalizing EEGs. I used these findings when creating pieces for the score. In parts where the score reflected a happier moment or any type of healing I kept it in the bounds of tempo and dynamics that would calm EEGs and aid in stopping seizures. In moments that reflected chaos, epilepsy and moments of poor health the score was very volatile in tempo and dynamics.

Pre and post Seizure auditory Hallucinations:

Many people with epilepsy explain having sonic hallucinations that they experience out of nowhere, partly due to medication and partly due to their condition. Certain people have spoken about hearing voices, textures, or music, while some people pre-seizure have experienced

amplification or modification of specific sounds that are being made around them. This heavily influenced my compositions, I wanted to try and write in elements of confusion and misplaced sonic cues within the score. I tried to use sound processing and synthesis to disorient and create space between reality and perception in the same way an auditory hallucination does.

Themes:

I began the process of the score by going through the film and taking notes on themes, cues that would be needed and specific sections that felt important. I wanted to create a visual arc so that I could understand what needed to be added sonically to create a full picture. Once I had separated the story into three distinct acts and understood better the flow, I created 4 long form pieces that reflected the story. I wanted each piece to explore the journey of processing information and feelings to explore the nuance of human acceptance.

Sister's Theme:

The sisters have a really beautiful relationship that is built off care, protection and mutual understanding. They both are navigating their worlds with JME, and although they live in very different worlds, this condition connects them. Because of the severity of Tamsin's condition, the way that she needs to be cared for is very specific, and really only understood by those closest to her. In the film we see that Tamsin's health fluctuates constantly. There are moments where she is really lucid and present and then other moments where she is having multiple seizures a day and really out of it because of her medication. Whenever we see Chelsea and Tamsin together we see the love and protection that feels so powerful, but because they live so

far away from each other there is also a melancholic element to it. Chelsea feels like she cannot be there enough because of physical distance and there are moments that feel really frustrating and difficult as a result.

I wanted the sisters' theme to represent their relationship, their family, and the support and understanding that comes with caring for someone who has specific needs that are not common. I also wanted it to reflect a sort of distance and inner conflict that is felt at times in this film.

I wanted an intro that began slow and expanded. The elements I used to create the soundscape were recordings of cello and piano that I stretched to create the feeling of stopped time, recordings from VHS of the sisters when they were children to play with the theme of nostalgia, higher morphed synth sounds to indicate some sort of inner conflict and field recordings of textures to add more depth. I opened up the piece slowly to really emphasize the main cello theme that represents the heart of the sisters' relationship. There were moments of the piece that morphed the theme a little bit or added parts that darkened it. I wanted to show that the bond that they have is always there but that there are other variables that affect their relationship.

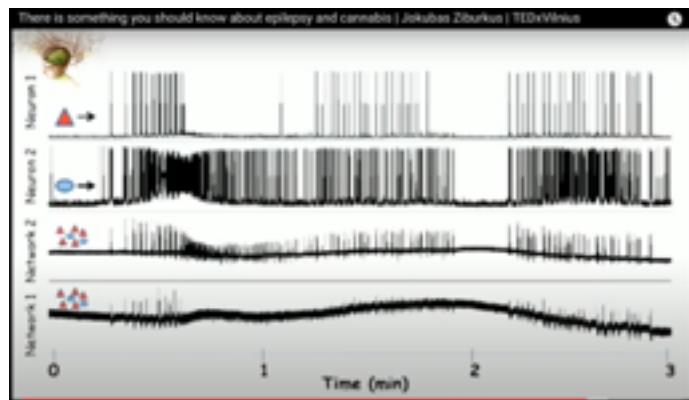
Reflective theme:

The reflective theme was supposed to be relenting. This is the piece that represents all the discomfort of living with JME, and the pain of watching a family member go through something that you know is excruciating. The more I developed the theme the more it wanted to touch on hopeful. It felt difficult to create a theme that was entirely based in pain because none of the

family members would allow for pain to be the leading narrative in the story. The piece ended up being more about finding hope and the process of acceptance. This was reflected in the cello parts I composed that appear twice in the piece, there are moments of hope and continuation.

Overall Atmosphere:

This piece was one that was supposed to be a kind of classical underscoring; I really wanted to incorporate the research I had done. I began by looking at an image of an EEG scan of someone having a seizure. I used this scan as a map for the dynamics and density of the piece, looking at clusters or moments of increased neural activity. I wanted the piece to emulate the turbulence of the scans, so there were many moments of calm followed by chaos and sensory overload. In this piece I used recordings from the sound therapy workshops that James had conducted. The recordings were of people singing and humming. I used granular synthesis to reproduce the clusters from the graphic by “Neuron 2”. Inspired by studying epileptic auditory and visual agnosia, I wanted to take sounds that felt familiar and manipulate them to synthesize new, foreign sounds. Agnosia refers to the inability to interpret sensations, in this case specifically auditory cues. This can be disorienting and ties into pre/post seizure hallucinations.



Pacing:

This cue is the pulse of the film. It carries the energy and continues to move the story along. Chelsea Leyland is a DJ and I really wanted to compose a piece that referenced her love for house and electronic music. This was something that I had never done before, and I still wanted it to feel a bit disorienting. At the time I was listening to a lot of Nils Frahm, particularly his score for the film “Victoria” that is really heavily influenced by Berlin club music. The opening scene has a slow developing house track that feels really simple but also gives you the feeling that you are chasing after something. The way that the hi-hat sound is constantly shifting timing and where the hits are is disorienting but because of the low end keeping steady, it all seems to work and feel really intentional. I wanted *Pretty Close* to have that same effect. I did this by offsetting the hi-hat sound with a delay so that it never stayed in tempo for long enough to feel comfortable. The bass and the kick stayed steady, to allow for some sort of drive and order.

Once I had finished the four main themes, there were still parts that needed to be addressed: certain cues that could not fit into the four categories. I decided that I wanted to add strings to the reflective cue and had two more ideas for cues that I wanted recorded by a cellist. I wrote the cello part for the reflective cue to be hopeful and to symbolize the totality of the experience and not just the melancholic.

I wrote two new cues, *Pianofield* and *Stretch* that lean more on the dysfunctional side.

Pianofield feels really chaotic and undone, to give that needed emotional push. *Stretch* is inspired by the way that both Mica Levi, in her score for *Jackie*, and Bobby Krlic, in his score

for *Midsommar*, use really intense stretching and glissandos to Mickey Mouse an almost visceral feeling of looming danger.

When all was finished, watching the final product completely gave the pieces new life. The process of making this score has opened me up to the many dimensions of sound as a tool for world building. By investigating and playing off relationships and themes heavy in the narrative, I've come to understand that there is both a theoretical and practical use to filmmaking with sound. The transcendental nature of sound adds an unknown that is essential to any world, both built or lived in; but there is also an incredibly practical element that plays on our experiences and allows us to run tributaries from our own lives to add depth and life without explanation. My sensitivity to all these moving parts, through this project, has allowed for growth in the understanding of my role as an artist and composer. Just as sound is a continuum that perpetually morphs and changes shape, so does my perception of it as a powerful entity that can never be fully tamed, only held and let go.

Works Cited

- Anonymous, Authored by. "Music and Epilepsy." *Epilepsy Society*, 15 May 2020, www.epilepsysociety.org.uk/music-and-epilepsy.
- Carhart-Harris, Robin Lester, et al. "The Entropic Brain: a Theory of Conscious States Informed by Neuroimaging Research with Psychedelic Drugs." *Frontiers*, Frontiers, 10 Jan. 2014, www.frontiersin.org/articles/10.3389/fnhum.2014.00020/full.
- Coebergh, J A F, et al. "Musical Hallucinations and Their Relation with Epilepsy." *Journal of Neurology*, Springer Berlin Heidelberg, June 2019, www.ncbi.nlm.nih.gov/pmc/articles/PMC6517562/.
- Cox, Christoph. "Beyond Representation and Signification: Toward a Sonic Materialism." *Journal of Visual Culture*.
- Daniel, Drew. "Join 149,246,921 Academics and Researchers." *Academia.edu - Share Research*, All Sound Is Queer, www.academia.edu/.
- "Epilepsia." *Wiley Online Library*, [onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1528-1167](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1528-1167).
- Loui, Psyche, et al. "Rapidly Learned Identification of Epileptic Seizures from Sonified EEG." *Frontiers*, Frontiers, 25 Sept. 2014, www.frontiersin.org/articles/10.3389/fnhum.2014.00820/full.
- Maguire, Melissa Jane. "Music and Epilepsy: A Critical Review." *Wiley Online Library*, John Wiley & Sons, Ltd, 21 May 2012, onlinelibrary.wiley.com/doi/10.1111/j.1528-1167.2012.03523.x/full.
- P, Anna-Elena, et al. "Queer Sounds and Spaces: Introduction." *Queer Sounds and Spaces: Introduction*, www.radical-musicology.org.uk/2019/Introduction.htm.
- "Weird Sounds before a Seizure, And Auras without Seizures." *Epilepsy Foundation*, www.epilepsy.com/connect/forums/living-epilepsy-adults/weird-sounds-seizure-and-auras-without-seizures.