

Patrick McMaster - EAST 300 - April, 2023

D1.

For this final assignment, I wanted to put into practice three compositional ideas that had been developing throughout the year. The first was rooted in the frequency domain and involves mapping a two-dimensional representation of the human body and central nervous system to the frequency spectrum. Higher frequencies would correspond with the head and brain region, and the lowest frequencies to the nerves and tendons of the feet. By combining this mapping with gestures and techniques drawn from movement, stasis and constructed sound objects, I could map the physiological locations of the chronic pain I experience to specific ranges in frequency, and mirror the movement of pain to gestural movement in the frequency domain.

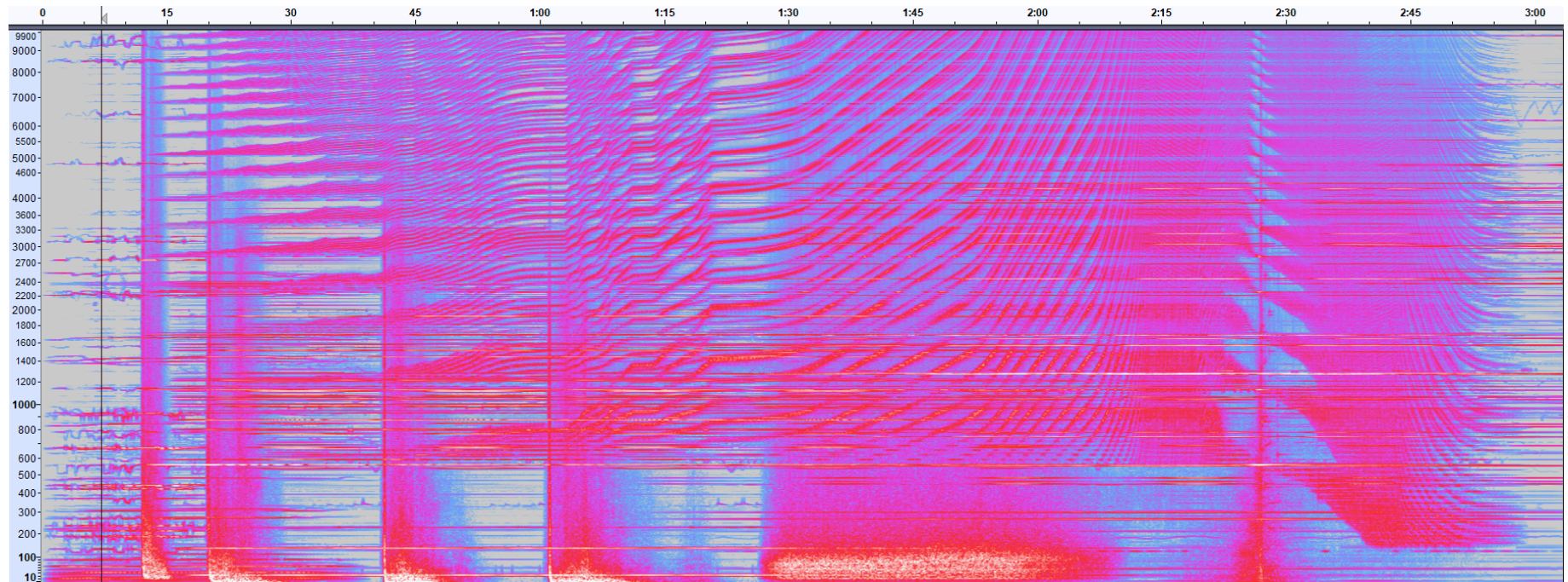
The second compositional idea, building off the first, is temporal. I wished to explore linear mapping of real-time to compositional time periods. For this piece I've compressed an 8 hour period into 8 minutes, so a 1:60 scale of real/compositional time, but the intention would be to develop techniques to aid in the composition of longer works that would move closer to the 1:1 ratio, allowing for daily events and phenomenon to be mapped compositionally to gestures of equal duration within the composition. Examples would include events of irregular duration, such as migraines and joint pain, but also repeated phenomena such as the division between day and night. This mapping of wide-ranging occurrences will result in a rich combination of goal and non-goal-directed linear time as well as more static "moment time" and plastic or sculptural "vertical time."

The third compositional idea I wished to explore was aesthetic. Despite being influenced by the approaches and writings of composers such as Iannis Xenakis, Luc Ferrari, Bernard Parmegiani, Francois Bayle and others at France's pioneering Institut National de l'Audiovisuel's (INA) Groupe de Recherches Musicales (GRM), I haven't borrowed from the electronic music aesthetic that developed during the heyday of their research into spectral and computer-assisted acousmatic composition. In a challenge to myself I decided to borrow from these aesthetics and fuse them with the compositional patience and contemplative listening experience created by Eliane Radigue in her electronic works.

N.B. The diagram at the beginning of this document will serve as a useful reference for the frequency-to-body mapping I used.

I - '20h00-23h00' (3')

The piece begins with erratic, clustered frequencies in the 400 to 550 Hz range, roughly corresponding with the calf muscle. After the first of four sound impacts in the 1-100 Hz strata, these clustered frequencies are joined by others approximately equidistant throughout the spectral space between the lower limbs and the brain (~9KHz). This was achieved using a spectral barberpole patch I devised inspired by the Shepard tone illusion developed in 1964. Each additional sound impact event triggers a responsive change in the frequency of the upward glissandi. At 1'27" the appearance of an extended noise event in the lower frequencies marks the beginning of a unified acceleration of the upward moving frequency of each of the various clustered frequencies until their rate of ascent is so fast it produces a full spectrum resonant peak at 2'27". After this climax, the motion inverts, with the frequency clusters descending for approximately 28". The exploration of unidirectional motion in the frequency domain here is mapped onto the idea of electrical signals travelling from the various muscles and joints through the central nervous system to the brain.

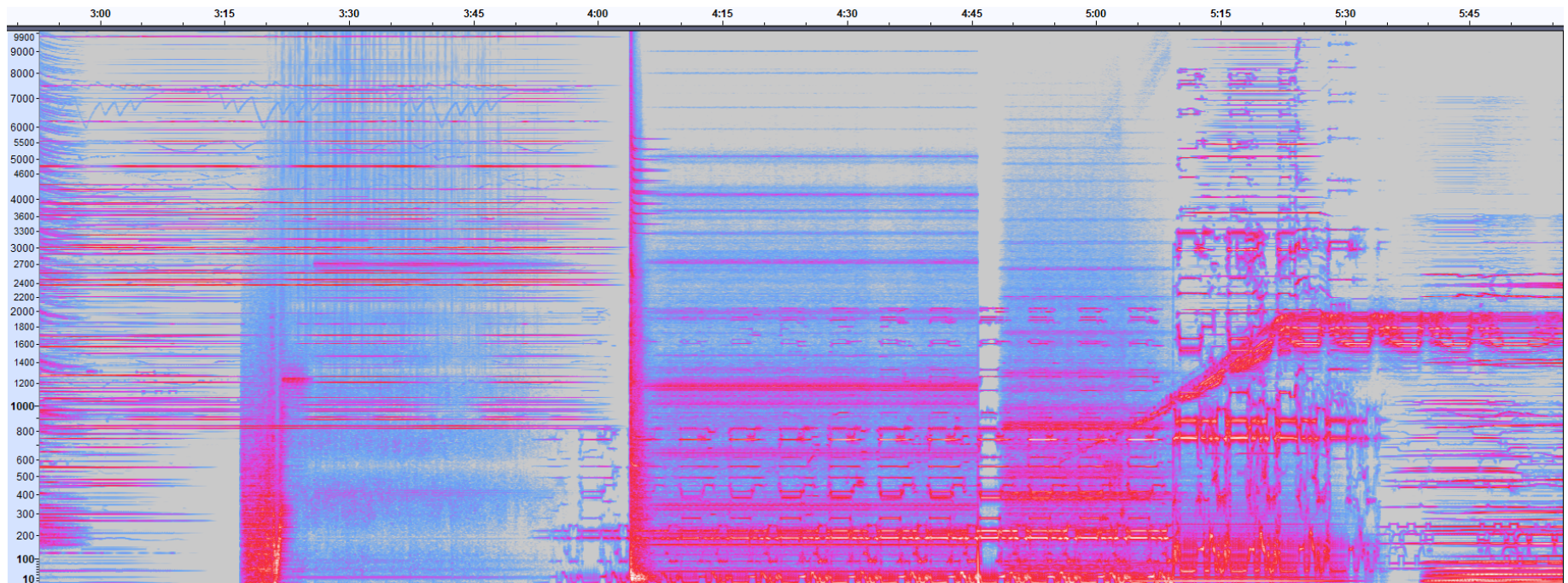


II - '23h00-01h45' (2'45")

The first third of this section is marked by the gradual dissipation of the clusters into a reduced set of static partials which are contrasted with aleatoric motion in the higher frequencies and the emergence of sparse, granular noise from a low-frequency event at 3'20". An impact at 4'04" - which marks the transition to the second third of this section - is anticipated by faint repetition of this motion shape I developed which represents the contracting and contracting of muscles in response to pain:

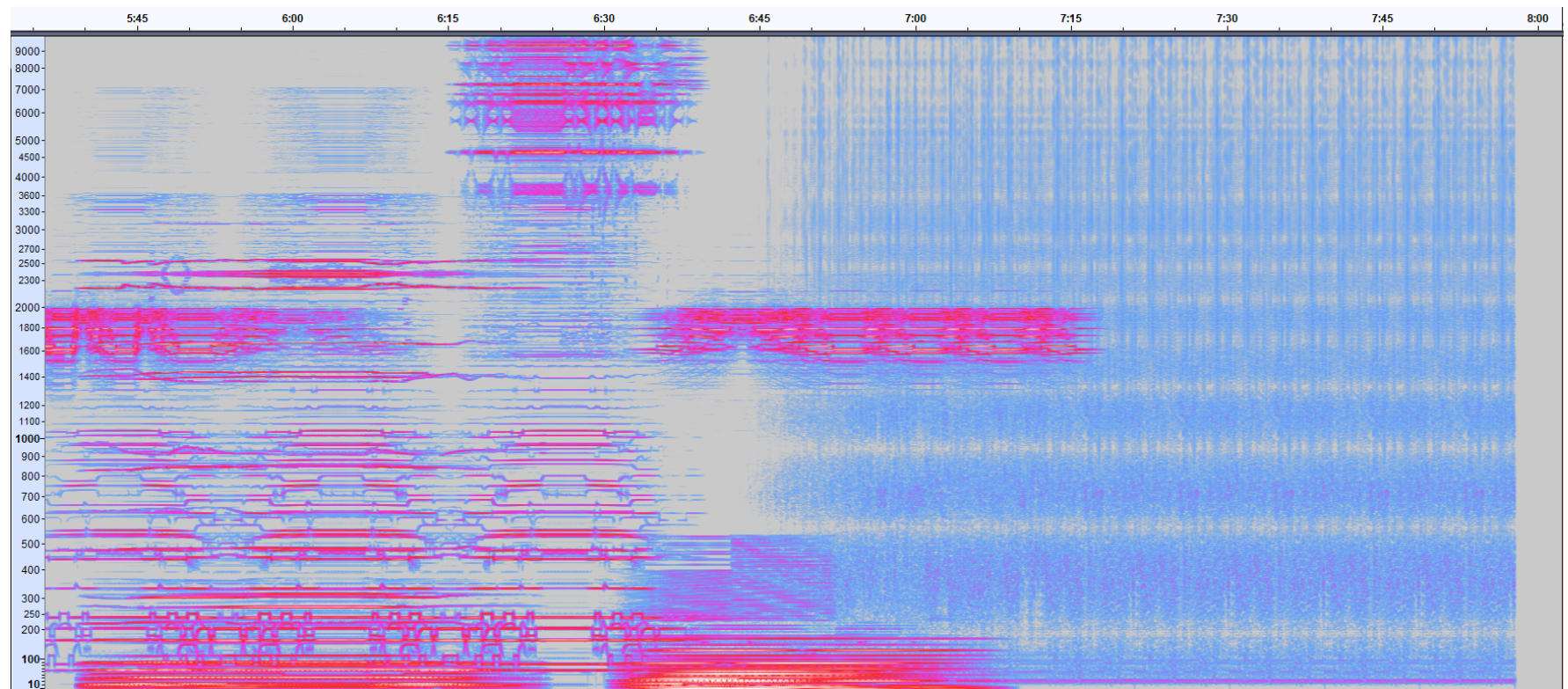


This gesture repeats for the second third of this section across multiple frequency spectra, in regular and inverted forms, resuming after the sudden spectral transposition at 5'10" which marks the beginning of the final third of the section where frequencies mapped to the areas most frequently in pain are given priority, with a large swathe of frequencies migrating from the spectral range mapped to the knees (~1 KHz) to that of the thighs (~2 KHz)



III - '01h45-04h00' (2'15")

The final section features inverted and regular repetitions of the previous motion shape - stretched and compressed temporally - across frequency bands of different widths/heights. Extreme low frequency gestures are replaced with near ultrasonic ones, and then back again before finally settling at 6'35" in the 1.4 KHz - 2 KHz range which maps to the area in my legs where I experience the most pain. The granular crackling from the second section of the piece reappears as a final gesture, and would serve as a transition (in subsequent longer pieces mentioned at the beginning of this document) to the start of a day cycle / change in the reticular activating system of our brain's regulating of the sleep cycle.



Concluding thoughts

In this piece I explored the interplay between “smooth” and “striated” spaces as discussed in Gilles Deleuze and Felix Guattari’s 1980 text *A Thousand Plateaus: Capitalism and Schizophrenia* in addition to the three compositional ideas I set out at the beginning of this document. Through continuous and dynamic movement across the frequency spectrum, much of the piece embodies smooth spaces. Repeating motifs create predetermined organizations of sound that more closely align with the striated spaces. The mapping of frequencies to fixed boundaries of the human body also affirms striated spaces, contrasting (unintentionally) with Deleuze and Guattari’s key concept of a body without organs (BwO). While the form of the piece and the parts that make it up are pre-planned and mapped in the way I’ve described previously, I’m aware that for the listener this will not be obvious. The relationship between frequencies and duration, the introduction and disappearance of motifs and clusters of spectra may give the impression of a thoroughly formless or aleatory piece, when in fact it was quite pre-planned in its construction.

I decided to create the piece in quadraphonic sound in order to further play with the hybrid model of smooth and striated spaces. With four discrete, fixed speakers we can create the illusion of a smooth spatiality for the listener. That both smooth and striated space can coexist and interpenetrate in different ways, creating hybrid spaces that blend the free-flowing movement of sound with fixed structures and hierarchies was a rewarding facet of the exploration this assignment afforded.

Moving forward, I recognize the need for further exploration of all of the compositional concepts I’ve discussed here. A lot more experimentation will be required in order for me to approach compositions that have a duration measured in hours, days and, eventually, even years. I will need to devote time to finding ways to define the relationship between the internal compositions of my own neurological impulses and the external world of audible sound. I feel fortunate that I will be helped in this through the study of composers who have previously explored algorithms based on the natural world, philosophers who can provide language and ideas to help cross the body-sound barrier, and my growing collection of self-authored experimental tools born of my own artistic intuition.

