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*Music: My Home Away From Home*

Oil painting, digital painting, digital animation

Home is usually described as a place where you grow up and spend the majority of your days. However, I find that my home mainly resides in the conceptual world of music, while the building I live in is only an influential factor. My room is a safe haven, a place where all the negativity of the world is locked out and comfort surrounds me, but unfortunately, I can't exactly fit my entire room in my pocket. Though, I can bring home with me. Music has formed my entire life, giving me motivation to get work done, soothing me to sleep, or aiding me in the process of navigating my identity and emotions. It creates a new world that is individualised to myself, and for me, this world can take a physical form.

I have synesthesia, meaning when I listen to music, associations with images, tastes, and colours all become a part of my physical reality. In front of you lies a glimpse into my mind when I feel at home. It's a glimpse into the world that is created by my music experience and a demonstrated visual example that simulates what I see to the furthest extent possible. I chose to work in multiple mediums, using digital mediums within my own comfort zone as it applies to the concept of home, as well as reaching out of my box and using oil paint, something I am still unfamiliar with. Within this project, I have had to really search within myself to create something that can feel like home, even though I am far from my dictionary defined home back in New York City. I invite you – yes you – the reader of this, to allow yourself to do the same. In the room you may find paint pens; please feel free to write a song that brings you that same feeling of home on the black walls. Or, if you would prefer, leave a message or doodle that feels very individualised to you. I want this to be your home too.

# Perception of Music and The Mind and Body



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*Writer's Note: I, along with the many people that have access to it, am an avid enjoyer of music. I have grown up listening to it, slowly developing my own skills in playing and composing my own music as the years have progressed. This paper explores how music is able to benefit humans as a whole, also describing how synesthesia is able to play a role in the experience of music. Music is a universal language we as people use to express ourselves and project and understand our emotions.*

If you tried to count every time you heard a song in a single day, you would most likely find yourself losing count. Try it! Don't forget the music blasting from that car that drove by, the soundtrack of that movie you watched, the background music playing in that coffee shop, or the music you listened to while writing your paper. Maybe you're even listening to music now as you read this! Even as this paper is being written, my phone's speakers are playing "U Deserve" by Wasia Project. Not only do we listen to music more often than we realise but it also has more of an effect on us than we think. For some, music is the only thing that can help them focus enough to get their work done, and for others music is the only thing that got them through a breakup. Music has always been around, and while it has evolved over time, it is undeniably important to our world. Music impacts the body and mind of humans, providing enjoyment and benefiting us as people as a whole.

Music, regardless of the context in which it's played, has an undeniable impact on human emotions. Listening to music is unique in its ability to stimulate the brain; in fact, other activities fail to generate the same benefits for the listeners mind and body. Music—even sad music—has been shown to reduce anxiety and increase dopamine, (Boothby). Moreover, even background music can strengthen otherwise dormant brain network pathways, allowing the brain to retain more

information (Budson). Although listening to music is often an individual act, doing so triggers the majority of all brain regions in a way that is only seen through social activities (Budson). The pathways involved in well-being, cognitive function, learning, quality of life, and happiness are activated when an individual listens to music. This process in the brain begins with the vibrations from the music, for the melodic sounds first pass through the ear canal while the vibrations are transmitted into electrical signals that can travel through nerve pathways. The signals then make their way to the brain stem through the auditory nerve, where it is then translated into what we perceive as music (Johns Hopkins Medicine). The act of listening to music is a complex and mathematical process, seeing as the notes, rhythms, and beats of a single song all form a connection between each other that the brain, while one won't even realise it in the moment, has to heavily compute to understand (Johns Hopkins Medicine). Because of this complexity, music is able to access and activate some of the most complicated networks in the brain, starting at the auditory cortex located in the temporal lobes near your ears (Budson). Emotional related networks in the brain are able to synchronise as well as activate during the songs that one plays. Music also affects the memory related areas of the brain, including the hippocampus. Additionally, the brain's motor system is activated, which is one of the reasons people tend to tap their feet while listening to music. These effects have led researchers to conclude that those who listen to music have better memory recollection, mood regulation, creativity, sleep cycles, and mental wellbeing (Budson).

While listening to music may be a universal act, it is also highly individualised, as the body translates it differently depending on how one perceives their ideal song choices. Some people may be drawn to softer music with slower beats per minute (BPM), while others may prefer a heavier beat and a fast tempo that feels more intense. No matter the kind of music one prefers, music's effects are similar across individuals. Our brains respond to music in an emotional and

physical way: sleep cycles, heart, rate, and mood can all be stabilised and memory and community-building can be strengthened through music (Boothby; Budson; Johns Hopkins Medicine).

There is much discourse about whether or not people should listen to music while sleeping. While some find it calms them and helps them sleep peacefully, others are sceptical and worry that it could have negative effects on the quality of rest they may receive. However, on a physiological level, the body will benefit from the rhythms embedded within the music, as our breathing and heart rate will imitate the BPM of a song (Sleep Advisor). High BPM is not necessarily ideal for resting, as a BPM between 60 and 80 will influence your breathing and heart rate to lay at a consistent level that is optimal for a calm, peaceful night's sleep. This does not mean you should avoid listening to the music that you enjoy the most before bed, but you should avoid playing it throughout the night if the music lays above 100 BPM. As a whole, listening to music that we most enjoy will have the largest impact because it stimulates serotonin production, offering a natural boost to our own personal happiness, which is key to having a good night's sleep.

In addition to physical benefits, music also has a great effect on mood regulation, as it is able to evoke emotional responses.. Some choose the songs they listen to based on the lyrics, as they can serve to put words to feelings that were previously undefinable for the listener. Lyricism and music can provide comfort, as Tuomas Eerola P.H.D, a professor of music cognition at Durham University, claims that the results of a study done on the subject helped “to pinpoint the ways people regulate their mood with the help of music, as well as how music rehabilitation and music therapy might tap into these processes of comfort, relief, and enjoyment” (Boothby). Another study that was published in the *Journal of Consumer Research* outlines the pros and cons of listening to somber music, one claim pointing to replacing something that bears burden in one's life with music that brings clarity to their emotional state. The study suggests that the music can

act as “an empathetic friend,” serving as a source of comfort. However, it has been shown that sad music does not better one’s mood as profoundly as upbeat music does (Boothby). When one listens to songs with an upbeat tone, neurotransmitters in the brain may label the experience with reward, releasing dopamine, which influences positive moods and relieves stress. This response strengthens regions in the brain related to emotional regulation and processing, allowing the connections between said areas in the brain and the auditory cortex to enhance their communication to be more efficient. However, those who listen to music with melancholic undertones will experience a different effect, though it is still beneficial. Sad music allows the listener to detach from events that evoke negative emotions without completely ignoring them altogether. Sad music has a beauty to it, and the listener can find enjoyment in, even in the situation they may be experiencing (Shahram). It even can allow you to find motivation that was once lost, achieving energy, focus, and calmness (Sleep Advisor). Overall, listening to music does lead to improved physical health, higher income, greater relationship satisfaction, and general success of the individual (Boothby).

Music therapy was created in response to people noticing how music can change moods. This practice aims to aid others in achieving their goals by building a therapeutic relationship to their personal accomplishments and music with the help of a certified professional. The American Music Therapy Association claims that music therapy was designed to achieve more specific goals in relation to mood, such as managing stress, strengthening memory, and offering physical pain relief. While it had once been a theory that music helped people recover from high stress and pain inducing events like surgery, research has confirmed the theory as fact. It has even been proven that music can aid those with chronic conditions; therefore, music has been used to target neurological conditions including Parkinson’s disease, dementia, stroke, and multiple

sclerosis (Boothby). Even within the umbrella of music therapy, there are several distinct approaches to treatment. For example, analytical music therapy is built upon the subject playing an instrument or singing to express buried emotions, while Benenzon music therapy is more about listening and finding the sound that most closely resembles internal psychological state. Cognitive behavioural music therapy relies on a physical, structured representation of music to modify or solidify certain behaviours. There is also community music therapy, which involves high engagement from individual members in a community to influence change as a group through music. Then, Nordoff-Robbins music therapy which entails a therapist and subject to play two separate instruments simultaneously to enable self-expression, and the Bonny method of guided imagery and music which utilises one's ability to connect their feeling, memories, five senses, and music together to stimulate their imagination. Finally, vocal psychotherapy requires the participant to use vocal exercises, breathing techniques, and sounds to deeply connect with their internal self, emotions, and impulses (Steven).

It's clear that music affects the brain in different ways, many of which overlap each other and strengthen it further just like memory and memory recollection. Music is able to trigger the hippocampus, a section of the brain that is responsible for long term memory. For example if you loved a song as a kid, playing that song years later will remind you of events from your childhood because music is activating the hippocampus and re-enacting the memories (Sleep Advisor). This mechanism can be used to much more intense degrees depending on the person. Music associations with events allow individuals to navigate their own memories from childhood, adolescence, and peak times of their lives that could have otherwise been forgotten (Sleep Advisor). As believed by physician Oliver Sacks, memories and emotions tied to music have been noted to survive much

longer than other forms of memories due to the influence music has on the entire brain and therefore strengthens the amount of power between the connections (Shahram).

Music can also impact our experience of non-living things like movies, parties, or plays. If you were to watch a horror movie without sound, chances are none of the intense scenes would be all that scary. It's the music that builds suspense and can snap tension with a loud crashing sound. Likewise, a video game may not be as enjoyable without the music because it would get boring and a play would be less dramatic without the orchestra. For most, background music adds a level of context to whatever media is being consumed that the brain is unable to provide otherwise. Additionally, music can affect communities as a whole. Popular artists can bring people together, forming groups that people can find safety and enjoyment in.

While music does have physical and mental benefits for all, there are some individuals who, when listening to music, can see images, taste notes, see colours, and more. This concept is called synesthesia, which is described by *Psychology Today* as “a neurological condition in which stimulation of one sensory or cognitive pathway (for example, hearing) leads to automatic, involuntary experiences in a second sensory or cognitive pathway (such as vision)” (Psychology Today). In other words, if one of the five senses is used, another will happen simultaneously for synesthetes. There are numerous kinds of synesthesia, but chromesthesia and auditory-tactile synesthesia relate specifically to music. Chromesthesia is the most common for musicians and seems to be beneficial. A song within a certain key signature and chord progression may result in a certain colour, and therefore associate that song with that colour every time they hear it (Milan). Because synesthesia can be very associative, as the senses are very closely connected to a person's mind, images can even appear in a projective form for synesthetes. For most, listening to music may evoke lively images in their mind, but for synesthetes, images and colours can be projected



into reality, giving music physical form (Psychology Today). Auditory-tactile synesthesia is similar in the sense that it can also be triggered by music, but rather than seeing images or colours, someone with this kind of synesthesia may feel something or have a specific sensation in parts of their body (Milan). Both kinds of synesthesia change how music is perceived. Rather than saying the music touched them in a metaphorical sense, which would imply that the music was very moving emotionally, auditory-tactile synesthesia is a literal version of the saying. Both versions of synesthesia allow certain individuals to hear music to an entirely different extent. People wonder if they themselves can teach themselves to have synesthesia like this, which is still a question researchers still debate the answer to. Synesthesia usually appears during childhood, as it does have a genetic component, but people like Richard Cytowic, an American Neurologist, believe that we all experience synesthesia to an extent but don't realise it. It is still unclear whether or not synesthesia is an individual experience, but some have made strides to emulating it. For example, Steph Singer, an English immersive artist and composer found that it was possible to experience a similar cross-sensory experience which involves utilising multi-sensory integration to recreate the same experience synesthetes have, just to a lesser extent (Libby). Synesthesia is not necessary to enjoy music, but can definitely change how music is perceived.

I personally do have three types of synesthesia, one of which happens to be chromesthesia. Since I was little, I have always incorporated music in my daily life, usually subconsciously. My mom used to tell me that during tests my teachers would tell her that I hummed throughout the entire hour or tapping my foot to a beat all day. I see the world through music most of the time, and I find it more comforting this way. When I listen to music, I see colours, sometimes solid colours, but usually very complex mixes of colours I can never seem to properly describe. Just how you cannot imagine a colour that doesn't exist, I can't ever seem to grasp a coherent version

of exactly what I see. Because of this, I find music to be exhilarating to listen to, for I can close my eyes and search through the song, almost like walking through an imaginary place. Most of my art, writing, and actions are influenced by music to an extent, because I have an easier time understanding and grasping concepts that I can see, and therefore music can link complex images to simple words or drawings on a page. However, I also perceive music in ways that are unrelated to my synesthesia. When I was younger, I was very lost as a person, struggling to get out of bed, eat, and just perform everyday tasks. My world was quiet, but my brain was loud. So loud that it became torture. Eventually I found an artist I really enjoyed, and she got me into music. As time passed, I learned that music would help silence my mind when I needed it to, and I became reliant on it. Then, I started making my own music based on what colour and image my emotions felt like. I would sit and try to picture my emotions as a physical body, and then create a melody that closely resembled it. This way, I was less reliant on music and could instead control my experience in its entirety. Music got me out of a very dark place, and now I can recognise other ways in which music can help me.

So much of the world revolves around music, most of the time it is subtle, other times it seems a bit louder. Without music, our world would be quiet. Peaceful protests may have been less calm without powerful chants made to sing as a group to resist against oppressing forces, and babies would cry throughout the entire night without a gentle lullaby to soothe them to sleep. Music benefits our lives, whether by relieving pain, regulating mood, strengthening memory, or providing an enjoyable backdrop. While we all perceive music in our own ways, it is universal in its ability to affect us on a very deep emotional and physical level. Music will continue to thrive as time continues to crawl forward, enriching our lives and the world we live in.

## Works Cited

Boothby, Suzanne. "How Does Music Affect Your Mood and Emotions." *Healthline*, 13 April 2017, <https://www.healthline.com/health-news/mental-listening-to-music-lifts-or-reinforces-mood-051713>. Accessed 15 November 2022.

Budson, Andrew E. "Why is music good for the brain?" *Harvard Health*, 7 October 2020, <https://www.health.harvard.edu/blog/why-is-music-good-for-the-brain-2020100721062>. Accessed 15 November 2022.

Sleep Advisor. "Effects Of Listening To Music While Sleeping - All Benefits and Drawbacks." *Sleep Advisor*, 29 September 2022, <https://www.sleepadvisor.org/listening-to-music-while-sleeping/>. Accessed 15 November 2022.

Johns Hopkins Medicine. "Keep Your Brain Young with Music." *Johns Hopkins Medicine*, <https://www.hopkinsmedicine.org/health/wellness-and-prevention/keep-your-brain-young-with-music>. Accessed 15 November 2022.

Heshmat, Shahram. "Music, Emotion, and Well-Being." *Psychology Today*, 25 August 2019, <https://www.psychologytoday.com/us/blog/science-choice/201908/music-emotion-and-well-being>. Accessed 28 November 2022.

Gans, Steven. "Music Therapy: Definition, Types, Techniques, and Efficacy." *Verywell Mind*, 2022, <https://www.verywellmind.com/benefits-of-music-therapy-89829>. Accessed 28 November 2022.

Psychology Today. "Understanding Synesthesia." *Psychology Today*, <https://www.psychologytoday.com/us/basics/synesthesia>. Accessed 28 November 2022.

Trajkovicj, Milan. “Synesthesia in Music (What it is, Famous Musicians, Types).” *Musician Wave*, 9 February 2022, <https://www.musicianwave.com/synesthesia-in-music/>. Accessed 28 November 2022.

Copeland, Libby. “Feel the Music—Literally—With Some Help From New Synesthesia Research.” *Smithsonian Magazine*, 5 January 2017, <https://www.smithsonianmag.com/science-nature/feel-the-music-with-help-from-synesthesia-research-180961660/>. Accessed 28 November 2022.