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Music & How It Impacts Your Brain, Emotions

By MALINI MOHANA

Music is a common phenomenon that crosses all borders of nationality, race, and culture. A tool for arousing emotions and feelings, music is far more powerful than language. An increased interest in how the brain processes musical emotion can be attributed to the way in which it is described as a "language of emotion" across cultures. Be it within films, live orchestras, concerts or a simple home stereo, music can be so evocative and overwhelming that it can only be described as standing halfway between thought and phenomenon.

But why exactly does this experience of music distinctly transcend other sensory experiences? How is it able to evoke emotion in a way that is incomparable to any other sense?

Music can be thought of as a type of perceptual illusion, much the same way in which a collage is perceived. The brain imposes structure and order on a sequence of sounds that, in effect, creates an entirely new system of meaning. The appreciation of music is tied to the ability to process its underlying structure — the ability to predict what will occur next in the song. But this structure has to involve some level of the unexpected, or it becomes emotionally devoid.

Skilled composers manipulate the emotion within a song by knowing what their audience's expectations are, and controlling when those expectations will (and will not) be met. This successful manipulation is what elicits the chills that are part of any moving song.

Music, though it appears to be similar to features of language, is more rooted in the primitive brain structures that are involved in motivation, reward and emotion. Whether it is the first familiar notes of The Beatles' "Yellow Submarine," or the beats preceding AC/DC's "Back in Black," the brain synchronizes neural oscillators with the pulse of the music (through cerebellum activation), and starts to predict when the next strong beat will occur. The response to 'groove' is mainly unconscious; it is processed first through the cerebellum and amygdala rather than the frontal lobes.

Music involves subtle violations of timing and, because we know through experience that music is not threatening, these violations are ultimately identified by the frontal lobes as a source of pleasure. The expectation builds anticipation, which, when met, results in the reward reaction.

More than any other stimulus, music has the ability to conjure up images and feelings that need not necessarily be directly reflected in [memory](#). The overall phenomenon still retains a certain level of mystery; the reasons behind the 'thrill' of listening to music is strongly tied in with various theories based on synesthesia.

When we are born, our brain has not yet differentiated itself into different components for different senses – this differentiation occurs much later in life. So as babies, it is theorized that we view the world as a large, pulsing combination of colors and sounds and feelings, all melded into one experience – ultimate synesthesia. As our brains develop, certain areas become specialized in vision, speech, hearing, and so forth.

Professor Daniel Levitin, a neuroscientist and composer, unpacks the mystery of the emotion in music by explaining how the brain's emotional, language and memory centers are connected during the processing of music – providing what is essentially a synesthetic experience. The extent of this connection is seemingly variable among individuals, which is how certain musicians have the ability to create pieces of music which are brimming with emotional quality, and others simply cannot. Be it classics from the Beatles and Stevie Wonder or fiery riffs from Metallica and Led Zeppelin, the preference for a certain type of music has an effect on its very experience. It could be this heightened level of experience in certain people and musicians that allows them to imagine and create music that others simply cannot, painting their very own sonic image.



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Malini Mohana is a content writer at R.O.I Media and Psychology graduate from the University of Cape Town, South Africa. Her research in neuropsychology combined with her extensive clinical work and interest in South Africa's [addiction treatment programmes](#) is only surpassed by her passion for writing. She's a registered counselor, expert in all things distinctly unpragmatic and her favourite gadget is her solar powered robotic exoskeleton.

APA Reference

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