The Intrinsic Role of Music in the Human Experience

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Abstract

Music has played an integral role in the development of language and culture, serving both as a means of emotional expression and as a mechanism for social bonding. These claims are substantiated in this paper in three ways – a neurological basis, a sociocultural basis, and a philosophical basis. From the standpoint of neuroscience, music acts on multiple levels – by modifying emotions through the deep-rooted empathetic response, by synchronizing brain states among listeners, and by acting as a powerful flow driver. Socially and culturally, music is important because it forms part of individual and group identity and fundamentally exists to convey emotional information. Philosophically, music derives meaning as a bridge between the self-in-thought and the self-in-action. Taken together, these attributes of music refute the claims of some social scientists that music does not fit into the human evolutionary framework and came into being merely as a means of entertainment.
The Intrinsic Role of Music in the Human Experience

“There was a silence of some minutes in the impenetrable darkness, then the sacred rattle began a low, ominous quivering close to the ground, in which there was sufficient suggestion of a rattle-snake to make one feel chilly about the scalp... At the same time the rattle rose up slowly, gaining a little in force, until finally it shot up all at once, and seemed to dart about the top of the room with amazing rapidity, giving forth terrific rattles and low, buzzing quavers, now and then bringing up against the post with a thud of the holder’s fist... When they have sung for about half or three-quarters of an hour without cessation, the rattle grows fast and furious, the performer’s fist goes tunk, tunk, tunk on the post with great violence... the singers’ voices sink into a long-drawn, dying wail... The rattle drops to the ground and seems to hover close over it, darting in every direction, and only two of the performers are heard, groveling on the ground and muttering petitions and responses, until finally the rattle dies slowly out, the voices hush, and all is over.” - Excerpt by Stephen Powers, who attended a secret meeting of the Maidu Indians in California in 1880 (Sachs, 1940)

Music is quite literally the rhythm of life, and holds great significance for many people. Some social scientists and philosophers argue that music is a uniquely human construct created as a form of diversion, frivolous entertainment developed to fill in the extra time made available when civilization and farming made life no longer a constant struggle for basic survival. In contrast, I believe music actually plays an integral role in who we are, and serves two purposes. Internally, music is a form of emotional expression,
a means of storytelling which transcends and may even predate spoken language. Externally, music creates immersive shared experiences which act as a mechanism for social bonding, be it through ancient shamanistic rituals, modern dance music, or even just new music being shared between friends. This links music with the Taoist concept of the yin-yang – powerfully opposing forces intertwined with one another, personal expression fostering group connection and connection enabling greater expression. An immersive means of achieving resonance, music serves as a bridge between the emotions and reality.

What is Music?

The technical way to describe music is “temporally-controlled, rhythmic, melodic sound intentionally modified” as a form of expression. (Mithen, 2005) Music as a word has its roots in the Greek muses – the nine goddesses of knowledge and inspiration who served as guides for ancient Greek poets, musicians, and artists. (Atsma, 2000) As it operates at a more rudimentary level than language, music is more “honest” than words because its conveyances are clear. This lower-level resonance also gives music more power than other forms of creative expression such as writing, drama, and visual art because it can be understood at multiple cognitive levels – subconsciously, physically, and through conscious conjecture. Interestingly, this very concept is the root of why many philosophers have discarded music as pointless entertainment. For example, in his 1790 work Kritik der Urteilskraft (Critique of Judgment) Immanuel Kant declared that music was merely an agreeable art, rather than a fine art, because it appealed too much to the body and not enough to the higher culture of the mind. (Ginsborg, 2014) This view is rooted in René
Descartes’ philosophy of mind-body dualism: the concept that mind and body are distinct elements with the mind acting as control and the body following its commands. Music acts on both the mind and body, bringing the two into synchrony internally (within the self) and externally (with other people). As this does not fit into the framework of the mind-body separation, followers of Descartes’ thesis chose to sweep music under the theoretical rug.

**Purpose of Music**

Music is embodied energy, an expression of one’s emotional state conveyed through the act of systematically layering complex harmonies and rhythmic patterns. In fact, a number of contemporary social scientists argue that music can serve as “a source of cognitive enrichment, a means of bringing order to unruly impulses, (and) a vehicle for infusing the coolness of intellect with the warming effects of emotion.” (Bowman & Powell, 2007) At a fundamental level, the mathematical qualities of music can be found within many systems in nature. Hierarchy can be found in the branches and leaves on trees, in the structure of human societies, as well as in the food chain and ecosystem. A cyclical, ebb-and-flow pattern is found in the passing of the seasons, in the tides, and in the cycle of life, passing from one generation to the next. Mathematical patterns infiltrate much of life; taken in isolation each element can seem random, but together as a system, a sense of harmony emerges. While people find beauty in this harmony, the randomness and unpredictability of nature makes it also engaging and thrilling. Music has this same effect – the hierarchy, pattern, and structure evident in sound waves are constantly changing and evolving, simple enough to recognize but complex enough to not be readily obvious.
As a form of self-expression, music developed and evolved as a means of conveying emotional information within early proto-human groups. Before spoken language became refined into words with a codified structure, complex social interactions could only be facilitated through facial, vocal, and body cues. In his book *The Singing Neanderthals*, Steven Mithen argues that, while Neanderthals lacked the cognitive fluidity for abstract symbolic utterances (i.e. words), they were able to coordinate high levels of inter-group cooperation by utilizing a sort of proto-music-language. (Mithen, 2005) This early communication involved using sonic symbolism, rhythmic variation, facial expression and bodily gesture to convey emotional states and desires, and actually mirrors quite closely the way humans today communicate with their own babies as well as the way dogs and humans interact with one another.

Just as written language may have originated as a way to enable more complex concepts to be codified when counting and tabulating information, spoken language may have evolved as an extension of music. While music and singing are highly effective at conveying emotional information, they do a poor job of conveying concrete meaning; hence, the percussive vocal order of words developed as a way to convey more complex ideas as human groups grew larger and more complex. Tone of voice still plays an important role in decoding meaning in face-to-face interactions, but words themselves carry the primary burden in modern Western communications. Many people in Western cultures view musical ability as a talent held by only a select few, while regarding the ability to speak words as universal. However, this is an erroneous presumption rooted in the fact that our American culture tends to value work output and efficiency over shared
group experiences. The sonic energy of music can be understood by people on multiple levels, without requiring the learned response of language. Just as nearly everyone can talk, but few people are great orators, nearly everyone can inherently “feel” music and sing/clap along to songs, while few possess the innate talent and extensive training required to become outstanding musicians. Evidence of this is the fact that many people find meaning in songs lacking words; one classical song which resonates with me is “Fly” by Ludovico Einaudi. Something about the subtle arpeggiation, rhythmic changes, and rise and fall of the notes binds itself directly to my soul, profoundly calming and clearing my mind of all other chatter.

In most small-scale societies (those not yet shaped by globalization), communal singing during daily activity is nearly ubiquitous, ranging from the Mbuti and Ba-Benjellé pygmies in Central Africa, to the Kaluli villagers in the southern highlands of Papua New Guinea (Mithen, 2005), to the work songs prevalent among chain gangs and slave laborers in the United States in the early 19th century. In fact, these work songs evolved into blues and soul music which in turn morphed into the modern rock and rhythm-and-blues music we enjoy today. One famous example is “When the Levee Breaks” by Led Zeppelin, from their fourth studio album in 1970. An iconic blues rock song, it actually originated as a delta blues tune lamenting the destruction caused by the Great Mississippi Flood of 1927. (Marshall, 2012) Along with food, language, sports, and customs, music is tied inextricably to cultural identity and is shaped by that identity as much as it shapes it. As a group bonding tool, music can be found in customs ranging from the secret rites of the Maidu Indians of California to triumphant national anthems to holiday music at Christmastime.
It is easy to see that music has the power to bring people together, but it is less apparent why it has this power. At a neurological level, music actually alters the brain states of people listening to it. In the book *Language and Music as Cognitive Systems*, Bharucha, Curtis, and Paroo argue that “music is a form of communication in which the composer or performer seeks to align the brain states of listeners... A special case of alignment is synchronization. In a live performance, the performer is not just seeking to align the brain states of members of the audience, but is doing so in synchrony. Furthermore, the members of a performance ensemble are seeking to align the brain states of not just the audience but also of each other. In addition to the experiences aligned by the music, the synchrony itself can produce powerful experiences, as anyone who has played in a string quartet or a band, or sung in a choir, can attest. Music promotes group cohesion.” (Fitch, 2011)

In addition to group synchrony, music is powerful because it activates multiple areas in the brain and serves as a vivid memory trigger. fMRI scans have shown that listening to music activates not only auditory areas of the brain, but also those responsible for creativity, memory recall, and movement. (Bergland, 2013) Sound and smell are the most vivid memory triggers – exposure to a faint waft of scent or fragment of a song can take someone directly back to an earlier time and place. For me, hearing pop songs from the 1990s, especially “Walkin’ on the Sun” by Smash Mouth, reminds me of riding in my mom’s car on the way to school when I was a kid. I remember that I liked the song so much that my aunt bought me the CD for my birthday – though it actually had no larger
significance in my life, that positive memory is one of the few things that has stuck with me from my earliest days.

Shamans in ancient times believed music held magical powers to heal. The ancient Egyptians used music to enhance fertility in women, shamans in the highland tropical forests of Peru used chanting to heal their patients, and the Ashanti people of Ghana used drumming to give power to healing ceremonies. In modern times, scientists are discovering that, in fact, music actually does have the power to treat certain mental disorders. A 2008 study by Teppo Sarkamo of the University of Helsinki showed that stroke victims who listened to music were able to recover much more verbal memory and attention than patients in the control group. Neuroscientists postulate that active music listening – singing, moving, and synchronizing to a beat – could help stroke victims restore additional skills such as speech and motor functions. Rhythmic entrainment shows promise as a treatment for Parkinson’s. By synchronizing their movements with the beat of a song, individuals with Parkinson’s are able to override most of the shaking and coordination issues caused by the disease. Through memory triggering, receptive and active listening, and selective frequency removal therapy, music also shows promise in treating dementia and tinnitus. As a treatment for autism, “the positive response to music opens the way to treatments that can help children with autism engage in activities with other people, acquiring social, language, and motor skills as they do. Music also activates areas of the brain that relate to social ways of thinking. When we listen to music, we often get a sense of the emotional states of the people who created it and those who are playing
it. By encouraging children with autism to imagine these emotions, therapists can help them learn to think about other people and what they might be feeling.” (Thompson, 2015)

_Drum Machines Have No Soul_

Music is both transitory and dynamic, mirroring the rhythm of life. It is the product of the unique circumstances and shared cultural forces that shape the lives of the musicians creating it, so is both individualistic and communal at the same time. Music is a direct expression of the soul, and the gap between creator and listener is bridged by shared trust – the audience relying on the performer to create something they can vibe to and the performer relying on the audience to embrace their work. This interplay between giver and receiver ties music to the ancient Zen duality of masculine and feminine. Zen philosophy is rooted in the notion that everything exists as a duality and that things gain meaning only in relation to their opposites. While Western thought prizes reason over base carnality, with the application of logic to subdue and bring order to chaos, Zen thought holds this duality as necessary, for good cannot exist without evil and light cannot exist without dark. If there is no bad then good has no meaning, without death there is no purpose to life. Music, and life itself, exist at the intersection between the two elemental forces. In the concept of the yin-yang light emerges at the moment of greatest darkness and darkness returns when the light grows too bright.

The purpose of Zen philosophy is to reach a state known as _mushin no shin_, or “mind of no mind.” In this state the mind is fully present, unconscious of itself and able to experience resonance and instant reflection. (Smith, 2004) Modern neuroscience has
labeled this mental state “flow,” and research has shown that achieving flow, also called being “in the zone” in sports, enables participants to perform at a higher level. Mihaly Csikszentmihalyi, the preeminent expert on flow research, conducted a series of experiments over the course of 40 years asking various professionals the question of what gave meaning to their life’s work. One research subject, an unnamed music composer in the 1970s, wrote “You are in an ecstatic state to such a point that you feel as though you almost don’t exist. I have experienced this time and again. My hand seems devoid of myself, and I have nothing to do with what is happening. I just sit there watching it in a state of awe and wonderment. And (the music) just flows out of itself.” (Csikszentmihalyi, 2004)

Music is powerful because it is a flow activity – immersive and dynamic, bringing both listener and creator to full engagement with the present moment. Whether one is dancing along or just passively listening to it, music is an experience in which to lose the self. Another way to look at the Zen duality is to divide life into two simultaneous domains: the world of reality, objective and rational, and the world of experience, subjective and unique to each person. The world of reality is life as it actually proceeds, events not filtered through one’s individual lens. Each person has a different world of experience colored by past experiences, knowledge, wants, desires, mindset, and myriad other factors that come together to make one’s individual reality what it is. For example, people tend to perceive things differently when they are mad than when they are happy, bored, etc. Likewise, a person with extensive background in the field of psychology will have a different response to reading a paper on psychology than someone with an engineering background.
Experiences do not have to be physical to shape someone’s outlook – past memories and dreams can influence thought and can be accessed again or even reshaped as we want them to happen. What is to say thoughts are not real? Thoughts become reality when translated into action, and it is this action which forms the energy of life. Music is an experiential mechanism which bridges the two domains, a physical energy with the power to influence mental state.

*Why GoPro Videos Need Soundtracks*

Music derives its energy not only from the physical pulsing of bass and drums but also from the creation and resolution of tension through dissonance and harmony. The emotional response evoked by music in humans is rooted in empathy – the ability to mirror the feelings of others in order to understand and connect with them. In her book *Deeper than Reason*, Jenefer Robinson writes “Most importantly of all, music can mirror the streams of emotional experience: the many interrelated currents going on simultaneously, perhaps reinforcing one another, perhaps in conflict. Music can express the way one emotion morphs into another over time, how the stream turns in another direction or returns peaceably to its original channel. Music can convey changes and modifications in emotion, a sense that things are going from good to bad or from bad to good, a sense that desires are gratified or disappointed, a sense that memories have engulfed a person or been swept away. Music can also convey blends of emotion... It can achieve this through complex movements of harmony, melody, and rhythm.” (Robinson, 2005)
Over the past decade, the realm of extreme sports has captivated the imaginations of millions of people, fueled in large part by the advent of portable action cameras and the resulting videos published. Watching Kelly Slater drop into a massive wave at Teahupoo off the coast of Tahiti, Danny MacAskill perform bicycle acrobatics in the mountain highlands of Scotland, or even just seeing the amazing nature time-lapses in BBC’s *Planet Earth* series is a captivating experience and makes the viewer feel as if they are actually taking part in the moment. However, watching the same clips without music (such as by muting the volume) is much less engaging and can actually be quite boring. But why? When performing, the athletes involved are in a powerful state of flow – fully present in the moment, feeling every stimulus, being hyper-alive in order to accomplish death-defying feats. On the other hand, the viewer is generally sitting in a chair or couch in the comfort of their own home. The resulting cognitive dissonance kills the intensity of the moment, except when music is added. A powerful flow driver, music can restore a sense of “realism” by creating in the viewer a neurological response which parallels the vivid engagement experienced by the athletes who are actually there. Music plays a similar role in film, adding suspense to a horror flick or drama to an action movie. A popular snowboarding movie from 2011, *The Art of Flight* was renowned for its soundtrack as much as for the actual snowboarding footage. Similarly, the science-fiction blockbuster *Interstellar* was praised for the visceral intensity of its aural content.
Music in our Lives

One final idea that has intrigued me is the notion that musical expression is both enabled and limited by the technology available to the people creating it. As such, music is not only an expression of the self but also of the sociocultural forces surrounding the self in time and place. If great composers such as Johann Sebastian Bach or Ludwig van Beethoven were alive today – with access to modern digital synthesizers and multi-thousand-Watt sound systems – what sort of music would they create?

Musical tastes can be viewed as a mirror of the self, a projection of one’s desires, feelings, background, and memories. Music forms an integral part of cultural identity, and has the power to control the group energy level of anything from movies to sports competitions to restaurants. People traditionally viewed music as a social endeavor, sometimes with magical powers to heal and make life better. Modern science has revealed that music may in fact have applications in neuroscience. Music began as the purest form of bodily expression – singing, clapping, dancing – and evolved into a means of sharing emotions between members of early proto-human groups. Though the ways it is created and expressed have changed dramatically music continues to thrive in this same role today.
Works Cited

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Taking into account an evolutionary viewpoint, we hypothesize that music could hide a universal and adaptive code determining preferences. We consider the possible selective pressure that might have shaped, at least in part, our emotional appreciation of sound and music, and... between natural sounds and music in his futuristic book titled The Music of Nature; or An Attempt to Prove that what is Passionate and Pleasing in the Art of Singing, Speaking, and. Studies on the human brain have shown unlearned preference for certain types of sound, such as harmonic and periodic sounds (Lenti Boero & Bottoni, 2008), of which music is a particular case (Juslin & Västfjäll, 2008; for overview, see Juslin & Sloboda, 2001). Self-determination theory (SDT) is a macro theory of human motivation and personality that concerns people's inherent growth tendencies and innate psychological needs. It is concerned with the motivation behind choices people make without external influence and interference. SDT focuses on the degree to which an individual's behavior is self-motivated and self-determined.