An Exploration of Music Psychology and the Emotional Effects of Music on Contemporary Society
(The Perils of Viewing the World through the Eyes of Pop Music)

An Honors Thesis (HONRS 499)

By

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Abstract

Music is able to extract many emotions in even its simplest forms. The way a bow is drawn across a violin string or the sudden attack of an orchestral note can bring an individual from sadness to excitement in just a matter of seconds. While music is a direct, engaging art-form, its affects on the human brain can be astounding. Music is currently being used for therapeutic purposes, as it helps to bring an individual through even the most difficult of circumstances. However, music can also be an emotionally paralyzing medium that can leave a listener in an anti-utopia that can be almost impossible to leave. This project discusses my exploration into the psychology of music and the affects it can have. The benefits of music therapy are discussed, as well as the problematic aspects of music.

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Section I: The Psychology of Music

As John Lennon once implied, what is music to one person is “electronic noise” to another, “depending on whose side you’re on” (Lennon). Music means so much to so many individuals in different ways that it seems almost ridiculous to try and define it so that it becomes equally understandable to all. How could I as a music enthusiast have hundreds of albums and still be on the search for another musical creation that drills into untapped wells of expression? Music is expansive, as it mirrors the human spectrum of emotion and thought. Music is able to extract many emotions in even its simplest forms. The way a bow is drawn across a violin string or the sudden attack of an orchestral note can bring an individual from sadness to excitement in just a matter of seconds.

The wonderful thing about music is that it is also beautifully simple when one looks at the larger picture. Voltaire once said, “Anything too stupid to be spoken is sung,” speaking definitely of music’s ability to take the mundane or banal and raise it to a level of expression that becomes poetry (“Voltaire”). Unfortunately, the reverse is also true as the greatest piece of poetry can be rendered less effective by adding ill-fitting music to it. Music allows an individual to connect with it, breathe through it, and even sustain life because of it, as we will discuss later. Listeners are able to see the beauty or despondency in a piece and live vicariously through it. That is the simple nature of music.

Music is a generative, functional part of the minds and souls of almost everybody, making it an indispensable accessory to life. This helpful quality of music lends itself to a whole field of science and humanity that will be explored throughout this paper,
including the psychology of music, the rehabilitative possibilities of music and the effects of current pop music on contemporary society.

There are a multitude of theories on the origins of music. It is difficult to pinpoint such a vast concept to one certain beginning. Ellen Dissanayake, a teacher at the New School for Social Research in New York, claims that music originated in “verbal exchanges which go on between mothers and babies” (Storr 8). Dr. William Pole, creator of *The Philosophy of Music*, implied that music arouse out of natural vocal inflections in common speaking (10). Many other theorists state that music originated from imitation of “bird-song” – the idea behind which being that humans tried to mimic the sounds and songs of everyday birds flying above. Countless numbers of explanations exist behind the exact origins of music, and if this were a paper on the origins of music rather than the effects of music, I would delve into them further. Whatever the scientific origins of music, there is much to be said for the above-mentioned theories as a group. All demonstrate that origins begin in a very primitive form and approach the idea of music from almost a childlike perspective. The idea that music developed through infant babble is fascinating, as it shows that communication through sound is with us from the beginning. Sound is an inherent part of every human being in some form, as it waits to be expressed, received, or quenched. Thinking back to the first time that I truly discovered music in early high school, I remember my wide-eyed reception of the melodies and how I couldn’t express to someone exactly what I liked about the sound, although I knew that I loved it. For me, that was when music was “created,” and in a way, I was the one who “created” it.
Stravinsky said that tonal elements “become music only by virtue of their being organized,” which is understandable coming from an obsessively meticulous composer (6). However, this is a true statement regarding music, since it begins with simple notes and ideas and then becomes structured into a thought or expression. The growth of a piece of music mirrors the growth of a human being as it starts primitively and matures with experience. In the same fashion, the way humans receive music changes with age. In the first year of infancy, babies notice musical differences in the changes of their environment. In one 1977 study, infants were exposed to a six-note atonal sequence until their heart rates stabilized. They were then exposed to the same melody just transposed and a melody of the same starting note but a different contour to the pitches. The infants’ heart rates were affected by the latter melody but not by the former, leading to believe that while infants cannot detect subtleties in pitch, they can become aware of rhythmic pattern changes. Infants may not be able to respond to the details of music, but they do know how it makes them feel (Sloboda 198).

Between the ages of one to five, children begin to sing themselves and start to stabilize pitches. While speech has begun at 18 months, actual words do not usually accompany their songs, and it appears that the purpose is not to mimic heard songs but to experiment with the creative nature of song structure (202). Around the age of two to three, children begin to repeat sections of heard songs and are able to start and distinguish pitch (204). One study played children a piece of music and then played it again with dissonant changes throughout. Almost 25 percent of children displayed negative reactions to the dissonance, showing that children have began to associate music with a
general “melody” by age three but a majority is still unable to distinguish harmonic information until the ages of seven or eight (208).

After these ages, true music recollection begins through adolescence into adulthood as tonality and rhythm become aspects of music that may prove memorable and distinguishable. It is also noticeable that as individuals age, they begin to look at music more in terms of whole phrases and melodies rather than individual notes and note pairs (Deutsch 421). It is here in adolescence and adulthood that we truly begin to look at music in a critical and appreciative manner. We begin to form a tonal complex from what our ears hear, meaning that a listener assembles the many components of a sound or song together to create a whole pattern (Orbach 357).

In his book *Sound and Music*, psychologist Jack Orbach discusses these levels at which we can appreciate music. The first is the direct level at which the listener responds to the explicit meaning put forth by the composer (358). Whether it be Bob Dylan’s war protest song “Masters of War” or Tchaikovsky’s portrayal of the Russian and French conflict in *1812 Overture*, a listener has an instant appeal to a piece based on the expressed content or the noticeable melody. Upon hearing a piece of music, listeners begin to formulate in their minds whether or not it is pleasing to them. This “intellectual” level of music appreciation brings about the “critical” view of music, where listeners can enjoy a piece based on its artistic merit and how it was performed.

Dr. R.A. Sharpe, a philosophy professor at the University of Wales, asserts the importance of music’s intelligibility and its two greatest factors, namely, “our capacity to follow it and our capacity to describe it in expressive terms” (Sharpe 205). This writer, however, cannot understand how he can put such a high importance on these factors in
music because the best music cannot be described. If one could completely describe Beethoven’s Fifth Symphony to me, I would never have the need to actually listen to it. One might be able to explain its meaning to oneself but may still be unable to explain it to another individual.

The second level of appreciation occurs regarding the level of performance of a piece. This level is where one might respond to the greater mastery of an instrument or of singing. The actual technical level of music can be appreciated when one attends a performance by the great cellist Yo-Yo Ma or watches the innovation of a guitarist like Jimi Hendrix as he pioneered new paths for the electric guitar.

Next, there is the general level of reminiscence that comes with a piece of music. As humans, we tend to associate certain sights, smells, or sounds with an event in time or a feeling. This level of appreciation will be discuss in greater detail later as it is an important part of our society’s current appreciation of music.

Finally, there is the general responsiveness humans have to music and rhythm. If we are listening to a great drummer, we may feel the need to tap out the beat alone with him. If we hear a song in the supermarket that we recall fondly, we might begin to whistle or hum along with it. Even if we encounter an unfamiliar piece of music, we may be prone to sing along with it out of that deep-down feeling to associate with music. This shows one of the greatest strengths of music as a medium, as its principles are universal across the globe.

What can possibly account for this universality of music? It would seem that in order for something to be so important cross-culturally it would have to already be a natural part of a human-being. When we listen to the bagpipes play at a Scottish funeral,
while we may not know the exact significance of the piece that is being played, we can easily relate as we use music in the same customary fashion. The poignancy of a musical piece may be felt by listeners regardless of what culture it was purposely written for because we are able to connect to music that may not have been written with our culture or background in mind. Music is incorporated into religious ceremonies, general celebrations, or commemorative events, and this use of music is seen in the wide variety of cultures across the globe.

However, music’s universality should also not be treated lightly. In *Music: The Sufi Message of Hazrat Inayat Khan*, he speaks of the ability of vina players who do not tune their instruments, but instead tune the audience. “Their instrument becomes only a source, the response to which is found in the heart of every person, friend and foe alike” (Khan). He states that in India, these musicians are not referred to as musicians, but are instead known as vina magicians, for the magic they perform on the human body. Because music behaves in this way, Khan claims that music is able to reach individuals if they do not find themselves becoming musically uniform. To become universally accepting of musical content would mean that a person could no longer grow spiritually through music as an individual. If we only accept the generality of music and its ability to reach masses, its ability to reach the individual becomes hindered.

Keeping music affective through its spirituality is extremely important to the psychology of music. In today's society of labeling and marketing, we are told what to like, where to invest our time, and how we should feel. We are told to go to a certain movie because it will make us feel romantic or to buy a certain album because it will allow us to be poignant and reflective. This mass-commercializing of music can
dangerously affect how a listener reacts to the actual content by removing the true interaction between the listener and the piece. When one listens to a song while he or she is alone, the spiritual level of the music may be greater than when one listens with a group of people because the listener might be more focused when alone. When a piece of music becomes commonplace, it can lose its ability to help listeners to mature and progress through it.

So what exactly makes music a psychologically affective tool? How does music have the ability to change lives? The psychology of music becomes important because of music’s strong capability of manipulating emotion in various ways. It is well understood how a person can help change the emotional state of another person in order to bring him or her around to another way of thinking. Humans are an interesting species because of the ability to completely change direction in life because of often erratic emotions, and it is because of this that music can play such an integral role in a life.

One of the most important aspects of music’s psychology is arousal, which is shown as an enhanced state of being. Music is able to create a condition of heightened awareness, interest, and excitement – one of the main reasons a person enjoys listening to it (Storr 24). However, this does not mean that music moves us by making us feel a certain emotion. Instead, the arousal makes it possible for that state to be enhanced.

Anthony Storr, author of *Music and the Mind*, states:

The idea that music causes a general state of arousal rather than specific emotions partly explains why is has been used to accompany such a wide variety of human activities, including marching, serenading, worship, marriages, funerals, and manual work. Music structures time. By imposing order, music ensures that the emotions aroused by a particular event peak at the same moment. It does not matter that the kind of emotions excited in different individuals may vary. What matters is the general state of arousal and its simultaneity (31).
Storr is accurate in his assertion that it is not just the emotional arousal of music, but instead the ordered nature of music that makes the arousal important. How else can it be that music we have never heard before becomes affective? The “imposing order” aspect of music is so important that it is used almost to excess now in movies in order to heighten the viewer’s awareness. The actual absence of music may even be disturbing due to our tendency to rely on its presence.

The act of hearing is often more moving than the act of seeing. Our emotions tend to be aroused more by the yelping of a wounded dog rather than just by seeing the wound itself. Do we feel a stronger connection with our sense of hearing because it is the sense we had with us from even before birth? David Burrows, a professor at New York University, states that the subtle heartbeat and breathing of a mother begins the hearing process in the womb, starting our predilection for sound before we even have sight (27). Most of us would be terrified if we woke up one morning without the ability to see, but we would be even more frightened if we woke up and could not hear the world around us. Silence can become maddening for those who have experienced a strong tie to sound since before they were born.

Dr. Shinichi Suzuki, a Japanese violinist and professor, was quite aware of this permeating nature of music when he developed his approach to teaching music more than forty years ago. Suzuki realized the ability of children to learn their native languages with ease and believed the acquisition of music to be just as simple. The Suzuki Association of the Americas continues Dr. Suzuki’s teaching by employing his same methods to music mastery, which is heavy on involvement with other individuals (1).
The method begins at birth or even before, as Suzuki suggests parents to play music often to infants. Even though formal training will not come for at least a year or two, the earlier music is encountered, the more in tune an individual becomes to its characteristics. This idea is similar to the theory that infants are more likely to speak earlier if they are spoken to or hear repeatable speech such as, “mama” or “dada.” There is also much importance placed on performance in child music development. There are several children who have the gift of perfect pitch, but it is in performance where they learn theoretical and technical aspects of music (Atherton). The Suzuki method continues to enforce music listening and repetition throughout the process as a child’s “repertoire” is as important to a child’s “ability,” much like a varied vocabulary increases an individual’s ability to communicate with others easily. Suzuki children are not gifted “prodigies,” but instead are just regular children whose exposure to music has enabled them to have a higher predilection towards mastery.

As Storr alluded to in the previous quote, the structure of music is a relevant characteristic behind its psychological affectivity. From an early age in grade school, we are taught to recognize patterns and sequences. Repetition is important to society. We like to see trends and have logical explanations for what occurs around us. The human body itself is very rhythmic in walking, breathing, and of course, the heartbeat. One of the consistencies in music across the planet is the rhythmic beats that accompany music. Often our everyday lives fall into musical patterns and our bodies are able to relate closely to music because of those. It is these basic patterns of music that allow music to become universal, as mentioned earlier, and allow music to have the same universal
effects on people – or as Storr asserts, "What is universal is the human propensity to create order out of chaos" (64).

One of the aspects of music that is shared with other art-forms is its ability to allow one to experience another form of reality. While I do not believe that there is a literal "escape" from reality as some psychoanalysts assert, there is something to be said for our tendency to get lost in a musical piece. The arousal of music can sometimes be so great that it takes us to a state of relaxation, which would cease to be a state of heightened awareness and would become a state of self-removal. Pete Townsend once spoke of this state in the documentary film, *The Kids Are Alright*, citing that he became a completely different person onstage during performances, unaware of his actions which could become extreme and dangerous. Music can lift us out of a current state and create an entirely new environment around us. A song has the ability to change our perspective on the world around us, as well as create a "parallel universe" that we can become a part of. How often do young teenagers and adolescents retreat to their rooms to listen to music when they are subjected with feelings of pain or anger? Music may become a retreat for a listener. It may become the "summer home" that one goes to forget about everything else occurring in life. While the state is not a true physical separation of mind and body, a disjunction of some sort can occur. This will be discussed later.

There are many different genres of music and labels that can be affixed to various artists, but there is a clear distinct interest in the separation of music with words and instrumental music in psychology. The emotional reaction one can have when listening to a composition by Bach can be completely different from the experience of listening to 70's folk musician Nick Drake, even though both could create reflective and melancholic
pieces. While an artist’s lyrics may directly channel a poignant expression into the hearts of listeners, an instrumental piece may leave each person in an audience with a differing emotional response. If you look around at the crowd after symphony performance, there is really no way to instantly guess how someone feels after a piece. The music speaks for itself and then tunes the individual, much like Khan mentioned earlier.

A great example of this in modern pop music is the Icelandic band Sigur Rós. After composing two albums sung in Icelandic, the band (whose instrumentation consist of two guitars, bass, keyboards, drums, and a string quartet) decided that the words were not what was important to their sound and actually detracted from what they hoped to accomplish. So the band carried this idea into their 2002 album “( )”, gracing neither the album nor the songs with actual titles and singing in a created language they dubbed “Hopelandic.” The band went back to using the human voice directly as a guiding instrument, while still producing some of their most poignant and meaningful music to date. Storr puts it well when he states, “We take it for granted that instrumental music without the voice can express every variety of human emotion, even if it cannot exactly define a particular emotion,” as we will later see that instrumental music is a powerful tool for the human mind (67). It is sometimes important to separate the music from the words when analyzing the affectivity of a piece, otherwise we do not really know if it just the lyrics that can adjust a human state instead of the melodic nature of a song. Both lyrical and instrumental content are important and powerful parts of music, but it is most likely the instrumental pieces that bring forth a personal response from a listener, causing each one of them to delve into their own souls to connect with the music.
Section II: Music and Rehabilitation

It is because of these psychological attributes that music has the ability to change the way we think, feel, and live. For centuries, it has been believed by many that music has the ability to heal. Music has been used in centuries past to banish evil spirits, cure schizophrenia, or even heal snake bites (Mucci). The energy of music, whether it is spiritual or physical, has always been a powerful tool that can be harnessed to benefit those who may not be receptive to traditional medicine. With the help of both music and science in today’s world, we can aid human health in ways that we never thought possible. Music rehabilitation and music therapy are becoming acknowledged and respected fields of medical science with benefits that can no longer be ignored.

One of the most common sources of music affecting our lives is heard almost every day as we enter department stores or work throughout our day. Muzak, known more common as “elevator music,” is everywhere and inescapable. Invented by General George Squier in the early 1900s, Muzak is functional music that goes almost unnoticed by the average listener. Environmental music can help to alleviate stress or boredom, and can allow for employees to work more efficiently. Muzak manipulates people by subconsciously calming them, even though they may not really like the music being played. When employees express a liking of a Muzak arrangement, it is often removed since the purpose of Muzak is to remain unnoticeable (Barnes 6).

The mental ties of Muzak are created through the “brightness” of the music selections and can be created by controlling four elements: tempo, instrumentation, orchestration and rhythm. The tempo of Muzak is arranged to fall between 40 to 130 beats per minute and is programmed to change at random with no real system to the
occurrence of a certain tempo. These randomized tempos help to create a pattern, which affects the hearer at a more physical, muscular level (93). With the help of randomized tempos, Muzak becomes the functional aid that can help a worker work at certain pace and keep movement regular. The rhythm of Muzak is closely connected to the tempo, as it is also randomized to add diversity and change the pace of employee movement. Waltzes, sambas, and standard 4/4 pieces are placed back-to-back to keep Muzak erratic and un-engaging.

Instrumentation and orchestration play the all-important role of “mood” in Muzak with a spectrum of instruments. At one end are the “soft” strings, while the brass instruments are on the “forceful end” with the woodwinds falling in between (94). Linked with the “timbre,” or tone-quality of the music, the instrumentation is also randomized by adding and removing rhythm sections to create diversity. Also, brasses are seldom used due to their harsher and urgent tone, which could incite unrest in employees. The orchestration is the hardest element for Muzak programmers to pin-down, as it is difficult to distinguish the effects between the use of a string quartet or a solo violin. While not considered by Muzak to be the best way to evaluate orchestration, Muzak has had to fall back on just the number of instruments used in a composition instead of discovering how one may hear the multiple instruments differently.

Combined, these four elements allow Muzak to assign a musical piece a rated number, which can be programmed to help stimulate or relax an employee.

When U.S. Steel contacted Muzak to increase output, it was discovered that music in the workplace increased productivity by 50 percent with 98 percent of employees saying they enjoyed the benefits of having Muzak (110). Errors decreased in production
and thirty-eight people were let go because of increased productivity. While not exactly a heart-warming story for the employees that were fired, the mental effects of music in the workplace were clearly displayed.

A second study involved patients sitting in a preoperative waiting room at St. Joseph’s Hospital in Omaha, Nebraska. While most patients are sedated when they are still in their holding rooms, St. Joseph’s had patients walk down to the waiting room where they would be under the influence of Muzak and would then receive sedation just before entering the operating room. A random cross-section was done with half of the patients not being subjected to Muzak before-hand. Results showed that Muzak reduced blood pressure, pulse rate, and respiration rate, and the staff documented lower levels of anxiety in the patients. Without Muzak, patients were more worried, asked more questions and fidgeted more often. The patients under Muzak’s influence were even three times more likely to make positive comments about the holding procedure at St. Joseph’s (113).

An amusing story notes sculptor Richard Lippold’s stainless steel, geometric artwork that was placed in Manhattan’s Pan Am Building, which was going to be surrounded by Muzak. Furious, Lippold contacted avant-garde composer, John Cage, with Pan Am’s approval. Cage suggested to Pan Am that Muzak be triggered when people passed by a “trigger” in the lobby and offered to re-pulverize and filter the music electronically. He also suggested that when foot-traffic was light in the lobby, his arrangements would not be played at all. The officials from Pan Am vetoed the ideas, stating, “The American businessman and the esthete do not always see eye to eye” (10).
While Cage and Lippold viewed the world of Muzak as intrusive, its recipe appears as the opposite. Two cups of random and unnoticeable, with just a dash of manipulation creates one of the greatest examples of music and psychology at work.

As noted earlier, music's use in hospital environments has increased greatly in the past few decades, as patients and doctors are aided by the effects of music compositions. In order to look at this phenomenon, it is beneficial to look at the body as a human instrument. Much like Hazrat Inayat Khan mentioned earlier, the human body tunes itself to music and operates much like any guitar or stringed instrument. Studies have shown that different frequencies resonant in different locations of the body, as specific characteristic frequencies occur all over the human body. Research shows that we do not need to hear music in order for it to register an effect in our bodies, as even the hearing-impaired can enjoy a work of music. Our bodies are the instruments that we upkeep by having them tuned regularly, and as we play them, we take better care of them to keep them in working condition. It only makes sense that music can aid our bodies in this regenerative process. Reports from the All-Union Research Institute in the Soviet Union state that oscillation applied to the human body will effect equilibrium and improve blood circulation, metabolism, and pulsing of the nervous system (Lee 77). This non-addictive, legal form of "medication" is now able to work wonders at fractions of the cost of other treatments.

Probably one of the most beneficial uses of music in hospitals, much like Muzak, is the lower anxiety levels in patients who are often worried and fearful of the impending procedures and hospital stay. Anxiety is harmful as it can reduce the immune system and resistance, making the suffering of a patient even greater and recovery even more
difficult. The regimen of music application in these scenarios of anxiety is similar to Muzak with the exception that the patient should be familiar with the music and might have chosen it. The achieved relaxation by music is much more efficient than sedative drugs, as about 50 percent of drug usage can be conserved and music is welcomed by about 97 percent of patients. In particular, music can ward-off undesired cardiovascular reactions in regional anesthesia (85).

The effects of music on anxiety are also beneficial in gynecology, abortions, rheumatology, and dentistry, which leads to the idea of what is known as “musicmedicine,” the idea that music can now be prescribed as an anxiety reducing drug. In *Rehabilitation, Music and Human Well-Being*, a book compiled by rehabilitation specialists around the nation, Dr. Ralph Spintge puts forth the prescription for “musicmedicine,” which subtly gives one of the most compelling arguments for music’s medicinal use:

1. Ingredients (title, instrumentation, interpretation, arrangement, orchestra size)
2. Dosage (duration of application, intensity, loudness)
3. Indications (patient’s choice, application to the situation)
4. Effects (sleep-inducing, relaxing, cheering-up, exciting)
5. Side effects/risks
6. Contraindications (exciting music in cardiac rehabilitation, sedative music in physical rehabilitation)

While this prescription may appear humorous, the idea really makes sense, especially if music has helped one through a mental or physical situation at some previous time. Notably, Spintge did not list any side effects. I am not sure of his particular reasoning behind this. This will be addressed later.
While being hospitalized is a lot for an adult to accept, it can be extremely difficult for children to cope with the anxieties and fears that can accompany a hospital stay. For children, there is a greater element of the unknown involved with going to the doctor, and children can be dangerously affected psychologically by these emotions. Fortunately, hospitals can help greatly when it comes to this issue as Child Life Specialists are now being implemented in many cases so that children can learn to understand and accept the environment around them. Music, in particular, can speak to children and help them connect with their emotions to make their transition smoother.

There are four goals to establish when working therapeutically with a child patient:

1. Encouragement of the child and the involvement of the therapist to create energy flow leading to a trusting relationship
2. Understanding of contradictory emotions and of aroused conflicts
3. Establishing co-creativity between the patient and therapist
4. Establishing the dialectic of body and spirit (248).

Through these four goals, a therapist will be able to connect and relate to a patient and create an energy-based, cooperative relationship between the patient and therapist. Music can play an integral role in each of these goals, as the principles of music themselves parallel the necessary energy and flow that is required to create a bond with the child.

Myrtha Perez, a Child Life Specialist at Children’s Memorial Medical Center in Chicago, has shared several instances where music worked in ways with children and adolescents that no other medium could. She speaks of Jane, an 18-year-old suffering from leukemia. As Jane and Myrtha spoke over five years of treatment, Myrtha learned of Jane’s passion to write poetry – a way that she could work out her emotions during treatment. While her treatments had worked successfully for four years, the last year of treatment had begun to not work. Jane become withdrawn, paler, and stopped writing her
poetry. While the other nurses urged Jane to become “as cheerful as before,” Myrtha knew that there could be no real words that could comfort an intelligent adolescent who knew what was happening to her. Suggesting that they should listen to some music together, Myrtha put on Ravel’s *String Quartet*, and they began to listen to the first movement together. Within minutes Jane broke into tears as Myrtha held her hand and listened with her until the end. After the movement was finished, Jane smiled at the reassurance the piece had brought to her and did not want to hear the third movement because she wanted to write (243). When people are confronted with illness and grief, music can break down the barriers that form easily by striking the soul in ways that nothing else can.

A second case study speaks of 13-year-old John, an American Indian from Arizona suffering from rheumatic fever. Very angry and temperamental from the start of his stay, the staff had a difficult time caring for him. In spite of psychiatric visits for a week, John’s temper had not improved causing his heart condition to worsen. One day John entered his room to the sound of a Pueblo Indian dance playing and drums placed on a table in front of him. As John picked up the drum and began to play along, Myrtha joined him as they followed each others’ lead creating new rhythms. Through the music they became friends and worked together improving John’s communication skills and behavior with others (245). Music allows people to form connections that may never be realized, and can not only break down barriers within themselves, but with others as well. This problem can be a difficult one to solve with children, but it can be handled easily with the help of the power of music.
Particularly interesting is the use of music in treatment of comatose patients. As one of the more mysterious medical states, traumatic brain injuries afflict an estimated 400,000 people in the United States each year with three percent of patients remaining in a vegetative state. The common interpretation of coma is a “sleep-like state where the patient is unarousable to external stimuli” (138). Unfortunately, due to the erratic, one-time nature of comatose studies, repeated studies can not be achieved, but there are several instances of music’s use with patients in vegetative states.

The work of J.E. Selinske documented lateral eye movements and toe movement in the case of a 70-year old comatose male. Using treatments of 15 seconds of Irish music, the patient opened his eyes eleven days after the initial onset of his coma. Before his awakening the patient tapped his toes rhythmically to the music, raising questions about the nature of the human body and its connection to music (139). A study by M.E. Boyle documented three patients. One patient was in a coma for 38 months before the initiation of music treatment, while the others were in a coma for six and ten months respectively. The third patient died one week after the termination of treatment with motor responses to music documented under conditions of 15 seconds intervals.

Numerous studies on music and comatose patients are beginning to change the way doctors view the “vegetative state,” and raising the question of whether “brain-death” is an accurate term given these studies.

Because music resonates through the human body naturally, it is also able to aid in the common everyday functions of the body, such as breathing. The Respiratory Therapy Institute at Celebration Health has taken this idea to new heights, as it has implemented a harmonica program with its pulmonary rehabilitation patients. Through
playing of the harmonica, pursed lip breathing can be exercised. The breathing technique, which is one of the simplest of ways to control shortness of breath, is often resisted by patients because of its monotony. However, Celebration Health has found that patients are often easily receptive to the use of the harmonica. The therapists and patients even put on concerts for the rest of the hospital (Wolski).

The use of music in hospitals leads us to the general idea of “The Mozart Effect,” an all-inclusive term used to describe the therapeutic value of music and its ability to treat patients who suffer from a great deal of psychological and physiological illnesses. Established by Dr. Alfred Tomatis in the late 1950s, the music of Mozart was utilized in experiments with dyslexic and autistic patients due to high frequencies in Mozart’s symphonies and concertos. Based on the work of Dr. Tomatis, music is sequenced with high-frequency music used for auditory stimulation and slower, low-frequency music selected for relaxation albums. Due to Mozart’s extensive collection of over 600 hundred major written compositions and their performance excellence, the music was selected as the best for the project. According to the Mozart Effect team, “The structural and not overly emotional expression helps clarify time/space perception. It is not over-stimulating, and the structures of the rondo, sonata-allegro form, and variation form are basic ways in which the brain becomes familiar with the development and familiarity of ideas” (“Mozart Effect…”). While music is not able to heal directly, its ability to reach many areas of the brain at once make music an ideal component when treating head traumas or injuries involving the nervous system.

The Mozart Effect has even been linked to possible increased intelligence in test subjects. While there is no definitive study examining this phenomenon, it is known that
music is able to instigate higher alertness and bring us to greater attentiveness. By stimulating the brain, music can bring help in concentration levels and assist in studiousness. A study published by *Nature Magazine* in 1993 even showed that students who listened to Mozart before an intelligence test scored higher marks than those who did not ("Music...").

Mozart's music is also currently being used in England in studies involving epilepsy. Recently, short bursts of Mozart's Sonata K448 have been discovered to reduce epileptic attacks. Patients were exposed to 10 minutes of music and were then tested with results showing improvement of spatial skill, such as paper cutting or folding. Studies with rats even showed that those who listened to Sonata K448 were able to navigate a maze faster than those who did not. Since the left side of the brain often processes rhythm and pitch and the right side usual factors timbre and melody, Professor John Jenkins states that listening to music would ready relevant areas of the brain. A reviewer of research on music therapy from the University of London, Jenkins is hopeful of the new findings: "There is enough in it to justify further work being done...Listening to Mozart could just hold some hope in the treatment of epilepsy" ("Mozart Can...").

The field of music therapy is ever-growing with music being used in the fight against several illnesses and disabilities. One facility doing extensive research in the field is the Canadian Association for Music Therapy, a non-profit organization established in 1976. Here, music therapists "assess and develop clinical goals" as they consult with family members, teams, and clients to use music that can rehabilitate, maintain, and improve the lives of their patients.
Music can play a great role in the well-being of patients with autism and mental
disabilities, as it can be a non-threatening outside stimuli for an autistic individual.
Music can change patterns of isolation and withdrawal, two primary problems of autism.
Several autistic researches have found music essential in teaching social skills to children
who were previously isolated in their behavior with other individuals. This, in turn, also
helps to facilitate communication with autistic patients, as it builds a sort of
communicable language between patients and others. Music therapy can help to increase
vocalization and stimulate mental processes that enable better conceptualization and
comprehension levels, while creating an increase in focused attention. Creativity is also
fueled which increases emotional self-satisfaction and self-worth, an important goal in
proper therapy with autistic and mentally challenged patients ("Music Therapy…" 1).

Music therapy is also playing a helpful role when dealing with the elderly, as
memory loss and the onset of Alzheimer’s is devastating to a large portion of the elderly
population. In studies on the final stages of Alzheimer’s, music is the only stimulus that
could elicit a response from patients. Once again, since music is a full-brain stimulus, it
is able to activate neurological synapses and increase patients’ coherence. Some patients
are even able to recall musical memories consistently when other memories elude them,
helping to increase morale amongst Alzheimer’s patients. Music can be very comforting
to these patients who often are unable to relax because of their racing and unfocused
minds. Jeff Tweedy, lead singer of the rock band Wilco, once said that he was paid to
play and sing at a schizophrenia clinic, and when he would play his listeners would often
fall asleep. As he apologized to the staff, they responded that they had terrible difficulty
trying to get their patients to sleep and were thrilled that his music could relax them so
well. Tweedy jokingly branded his music “sleep-rock,” but it was a clear testament to the ability of music to soothe patients who are unable to put their minds at ease.

Not only is music an important tool in aiding mental illnesses, it is also beneficial in cases of physically disabled patients. Music can be used to motivate and stimulate movement of muscles and joint functions, as well as help take a patient’s mind off any pain or discomfort during rehabilitation. As relaxation of the muscles is a key component in physical therapy, music can greatly aid in increasing flexibility during treatments. Increased motor skills and coordination can also be a result of rhythmically training to music while also providing motivation and support for patients.

The benefits of music in rehabilitation and therapy are fantastically simple but also effective when working with a medium as complex as the human body. This paper has merely mentioned “a drop in the bucket” of the possible uses of music and the number of studies that are being conducted to find even more ways of using music to promote human health and well-being. The world of medical science is now confronted with a new prospect that should not be looked at as a threat to medicine, but rather as a component of it. Music can be as beneficial to a patient as a painkiller or sedative and a great way of reducing medical costs for patients who are under terrible stress from mounting medical bills. Music has always been a great spiritual and physical healer, and the time is approaching when a symphony may well be as respected as a syringe.
Section III: Music and the Contemporary World

Finally, we must look at music’s effects on our current culture. There is no doubt a monumental difference between the years when an individual might have sat next to a small AM transistor radio to listen to the latest songs, and today, where a teenager puts on iPod headphones to listen to the latest in hip-hop protégés rap about “bitches” and “niggas,” as is common with current Top 40 songs. While the content of songs themselves has changed in the expressions used by musicians, the greatest differences come in the way we now experience music. As we have already discussed music’s psychological influence on an individual, it is important to remember the huge effect music has on a person today.

At a recent Berklee Music Therapy Symposium in the fall of 2002, Dr. Anne Blood, a neurologist from Massachusetts General Hospital, discussed her research on the effects of music on the brain. The recent study conducted by Blood presents her theory of music’s “chilling effect” on an individual. As a music lover, I have experienced chills when listening to several pieces of music as the dynamics and pitch of a song come together in ways that can give me goose-bumps, which is a phenomenon that interests the neurologists of Massachusetts General Hospital. Blood and her colleague, Dr. Robert Zatorre, used positron-emission-tomography (PET) imaging in order to look at the brains of ten musicians. Each test subject selected a piece of instrumental music that consistently gave him or her “the chills” and listened to it with headphones while Blood monitored the individual’s neural reactions. For comparison, subjects also had to listen to pieces selected by others – including random noise and silence.
Blood found that when the subjects listened to their pieces of music, a euphoric response was created throughout the brain. Results also showed decreased activity in other parts of the brain that process anxiety and danger, leading Blood to believe that in order to produce this euphoric effect, these other parts of the brain must shut down. As Blood puts it, “You can’t be euphoric and scared at the same time.” Findings by blood also show that most of music’s effect on the brain occurs below the cerebral cortex, the region where abstract thought occurs. It is because of this that our brains can process music without really thinking about it, which could make music extremely dangerous (Godcher).

As one walks about here on Ball State’s campus, you will walk past several students (myself included) with their headphones on – isolating themselves from the outside world and transporting their minds and souls inward. Walking to class, my mp3 player reinforces this idea with Elliott Smith’s sometimes shared mantra of “Everything Means Nothing to Me” booming from my headphones. Typical of Smith’s music, the song has a minimalist’s arrangement and builds slowly till Smith repeats the title of the piece over and over. Isolation has become a key element in pop music today with listeners taking solace in the one consistent friend that allows them to disengage from real relationships and live a life of loneliness. Smith took his own life in October of 2003 at the age of thirty-four.

Humans are meant to be social. From an early age, we need loved ones to care for us and hold us, and even as adults we can often fear abandonment. While it is good and necessary for an individual to enjoy solitude, loneliness can have devastating and deadly effects on a person. What happens when one ceases to be able to interact
emotionally with others? Can the intimacy one can feel from a favorite album fulfill the need we as humans have to be loved by others? The answer to this question is a resounding “no,” as music cannot be an acceptable substitute for the direct experiencing of the world and those around you. Unfortunately, this has become a way of life for several listeners of music today who indulge themselves in a comfort of loneliness. It can be difficult and downright depressing to experience the world and music allows those who are terrified by this prospect to maintain a sense of connectivity with the world while never truly investing in it. While there are not definitive statistics on the number of people who are “lonely,” it is estimated that at least 36% of the population feels loneliness at any given time with numbers among college students being even higher (“Loneliness”). Loneliness has become almost an epidemic with individuals self-prescribing music to cope with the pain. In 1982, studies showed that 50% of people listened to music or read when feeling lonely, and in today’s world where music is more accessible, that number would still be true if not higher (Tucker-Ladd 6).

Perhaps the most influential music device on today’s society is the Apple’s iPod. The iPod mp3 player allows individuals to carry a library of music anywhere they go and have their favorite songs at their fingertips. The iPod has taken on a life and personality of its own, with Apple reporting record sales of the device last year and an estimated 23.5 million units to be sold in 2006 (“Analyst...”). While Apple co-founder Steve Jobs has certainly touched upon a fantastic medium for music sales, the device might be responsible for a societal move towards the unsociable. An Australian head teacher has even recently banned students from bringing iPods to school because they promote social isolation, stating, “People were not tuning into other people because they’re tuned into
themselves” (Orlowski). Recently I received a pamphlet from the corporation Apple asking me to “Choose my roommate,” as it displays several Apple products such as the iPod. It is becoming all too evident that people are thinking of technology like the iPod as “their roommate,” and – even scarier – as a soul-mate.

Because of this shift in the availability and mediums of music, music is no longer just a live experience. In fact, although concerts are still prevalent across the nation, it has seemingly become just the opposite. A listener goes to the record shop on the day that his or her favorite artist releases a new album, then runs home to listen to the album alone. The music is ingested directly by listeners who make it a part of their beings – a part of who they are. Less and less is music becoming something that listeners want to run out and share with others. Instead, we often prefer to keep this great, meaningful discovery to ourselves, or at least only experience it by ourselves. A visit with any common-day “music elitist” (a term often used to describe a music obsessive who may be seen by others as a “snob”) will reveal the strong ties that a listener has with an album. If one mentions to an enthusiast about just having listened to an album that is receiving commercial attention, the elitist will snobbishly tell him how he bought that album years ago before people even knew of it. Listeners connect strongly with music on an individual level and will even feel like a piece of music is our lover that no one else should be with.

Modern bands such as the Flaming Lips have even cited this recent isolation trend of music as a reason behind changing the way they will produce an album. In 1997, the psychedelic-pop band release Zaireeka, a four-CD set that contained one album. While the idea seems difficult, it was actually quite easy to implement. With four separate CD
players and four CDs, listeners could sync up the start of each track so that they could have an album listening experience that was unlike any other. I myself arranged a "listening party" for the album, only to see that the enthusiasm I had about setting up the tracks and listening was not equal to my peers'. I was bombarded with questions like, "Why would they make this?" and comments such as, "You can't even listen to it in your car." I tried to explain the reasoning behind sharing a music experience, but the concept was lost on many. Wayne Coyne, the lead singer/visionary behind the Flaming Lips, has since said in interviews that he was told consistently by buyers of the album that they had no way of listening to his slightly eccentric project. He always replied to comments like this by stating that the listener should have more friends. This common response was probably truer than even Coyne could imagine, as we have moved away from era of calling up our friends to come over and enjoying a recently purchased album with others.

Also, the influence of the iPod as well as other mp3 players has made music an emotionally associative element to life experiences. A person with an iPod no longer remembers how much he or she loves a certain song, he remember the feelings that song gave him at a certain time in his life. While this is a common factor associated with the music listening, it can also become a dangerous one. When we start to connect a piece of music with a certain feeling, it makes it possible for us to control our emotions as easily as we can control our music. Thus, we are able to fuel our emotional fire at any time and in any way. The whole spectrum of human emotion is important to experience in order to remain in a healthy equilibrium, and music is now becoming a drug that a culture can take any time in order to be up or down. However, as with any drug, extreme use of music can produce dangerous results in an individual.
As a strong advocate of free speech, I hate to blame the content of today’s pop songs for any of the strong emotional bonds that we form with music. However, the recurrent themes of sadness are an important factor to our ties with music. Despite Frank Zappa’s insistence in a 1986 appearance on the debate show Crossfire that music is “just words” with no effect on mankind, the content of music of the last century can be quite affective. Part of this is just the general change of the world, while another part is simply the fact that entertainment music today is almost never instrumental. While instrumental pieces can be very moving, repeated listens of Albinoni’s Adagio for Organ and Strings is not as likely to produce an initial depressing response from an uneducated listener as much as a current pop song with words might. Susan Atherton, a music educator at Storer Elementary School in Muncie, Indiana states that children are often more receptive to instrumental music when they want to relax. After playing typical rock music over the intercom system of the school, children complained that they preferred instrumental pieces because the vocal content was too distracting and unnerving (Atherton). When you hear miserable words being sung, you are more likely to feel instantly miserable – simply because we can become engaged more immediately to lyrics. The popular movie High Fidelity has forever epitomized our music culture with one famous line, spoken by music-enthusiast John Cusack: “Did I listen to pop music because I was miserable, or was I miserable because I listened to pop music?” (Frears).

One of the most prevalent topics in content of entertainment music today is the concept of death. A countless amount of material inundates the public with verses about murder, suicide, and loss. From rap videos and hip-hop artists almost glorifying shootings to something as “innocent” as J. Frank Wilson & the Cavaliers’ “Last Kiss,”
death cannot be escaped in lyrics. A quick, recent perusal of message boards on the internet reveals a lengthy thread where users pick their favorite song to commit suicide to, showing that death is no longer thought of as a life event, but rather a “scene” to adolescents today (“Newsgrounds”). As discussed early, music’s constant use has made it an appendix to human life, a part of our brains that we associate with every aspect of our lives – and deaths.

As clichéd as it sounds, entertainment music has also painted us with the image that heartbreak is worse than death itself. The amount of songs about love lost greatly outweighs the amount of songs about love gained in most people’s music collections. Upon looking at the Billboard Pop Singles Chart for the week of April 2nd, one sees that at least half of the songs included are about the loss of love (“Billboard”). Our relationship-heavy members of society now use music to comfort them when significant others leave, and a listen of our favorite depressing love song will have us equally melancholy by the end of its running time. Recent contributor to this phenomenon was the musician Beck, who wrote an entire album worth of material devoted to the end of his long-term relationship with his girlfriend. A glance at the lyrics for the album’s single “Lost Cause” shows nothing unexpected from the title itself: “I’m tired of fighting / fighting for a lost cause” (Hansen).

Probably the most severe of all content in current music is the theme of alienation from the world. The music scene is awash with dozens of teenage bands complaining that nobody understands them and they are alone in the world. With suicide as the leading cause of death among 15-24 year olds (Schimelpfening), it can be a scary thought that a teenager is being fueled by the content of music like this. While artists such as
R.E.M have tried to battle the issue of teen suicide with their anti-suicide anthem “Everybody Hurts,” hundreds of artists do not express the same thoughts. Emotional pop legend Morrissey is known for his songs like “Will Never Marry,” in which he declares, “I will live my life as / I will undoubtedly die / alone” (Morrissey). The constant themes of loneliness in music mixed with the extreme isolation individuals practice are creating a dangerous dosage that numbers of music lovers everywhere are overdosing on.

A study conducted in 1992 by Steven Stack and James Gundlach, sociology professors at Auburn University, analyzed the suicide rates of urban areas and the numbers’ correlation to country music. The genre, which is saturated with songs about death, heartbreak, and isolation, has often been scrutinized for its typical “anti-happiness” content. While the study sounds unreal and bizarre, the research showed that cities with heavy airplay of country music did indeed having higher suicide rates than those that did not play country music. Stack’s research was conducted among 49 cities and detailed suicide rates for Caucasians vs. African-Americans, divorce rates, and poverty rates among many other factors. Also discovered was that, on average, more Caucasians listened to country music than did African-Americans, and thusly, whites were more likely to commit suicide than blacks. Stack’s research has garnered him much press, and he is currently being commissioned to do a study connecting suicidal behavior and criminal behavior (Chilargi).

Since Stack’s and Gundlach’s study can hardly be considered definitive (we do not all listen to country music), the question remains: can certain music really induce or maintain a state of depression?
The University of Southern California Psychology Department has conducted several studies on mood induction techniques with youth and elderly. In a recent study, 60 participants were involved in a project that subjected them to a questionnaire, emotional statements to be read aloud, and "mood music" to enhance or stabilize their current emotions. All participants were tested for clinical depression beforehand, with only 10 included individuals being clinically depressed. After undergoing the procedure, results showed that mood induction through music and words was easily accomplished with patients successfully being induced to various levels of emotions, including depression (Fox 522).

Another study from the University of Southern California was conducted in 2000 to find correlations between music and mood congruence. 200 healthy young and elderly adults participated in a process that involved display of emotional words ("misery" or "kindness") mixed with classical music. Results showed that during sad mood induction, individuals were able to recall "sad" words with greater ease (Knight 656). Logic would support this finding, as we are able to recall the bad times much easier in our lives when we listen to sadder music than when we listen to something upbeat. The University of Southern California's research gives every reason to believe that music affects our memories in ways that trigger emotional regions of the brain.

We have looked at the effects music has on our souls, our hearts, and our minds. While music is able to do great good in many cases, it seems entirely possible in current society that music can help create a state of sadness or melancholy. It may not necessarily make listeners clinically depressed, but we use it to stoke the fires of our emotions and lives – with the ability to utilize it to our benefit or against ourselves. iPods
are not just a piece of plastic, but instead are an extension of our bodies that we can use to stimulate our hearts or minds at any moment we desire. With this ability, I can choose to live in a state of melancholy that can become all too comfortable.

Being miserable becomes what I can handle, while happiness becomes an idea that is too abstract for me to really grasp. Songwriter Fiona Apple once said that she almost prays for the times when she feels depressed because that is when music comes to her. The princess of pop misery then unleashes her album upon unsuspecting others that become all too familiar with her feelings. We play depressing albums on our iPods when we feel depressed, rather than play something upbeat that would not be congruent to our mood. Music has become a self-prescribed medicine in our hands, and its use is often now becoming excessive because of its ready availability.

A song entitled “Mad World” off 80's pop icons Tears for Fears album The Hurting stated, “The dreams in which I’m dying / are the best I’ve ever had” (Orzabal). The song has since scored a modest hit for artist Gary Jules who covered the song in 2001. Has our vision become clouded by such music? Is happiness now something that some are resigned to not attaining? While the answers to these questions have yet to reveal themselves definitely, it would appear so. Throughout generations, music has continually been taken in new directions that are unlike where it has gone before. While that is a common generalization, its importance is more relevant now than ever before.

Can we blame musicians or technology for this recent trend? It would appear highly unlikely since our choice of music when we feel elated or depressed is up to us. We are responsible for how we fuel our emotions. It is just as simple to program an iPod with positive content as it is with negative content. As with most elements of life,
moderation is the key. Listeners must become aware of the effects of their music collection and establish a healthy equilibrium. Music is as strong as the most harmful drug and as dangerous as the most powerful weapon. And like any weapon, caution must be exercised when in use.
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The Perils of Viewing the World through the Eyes of Pop Music: CD Track-list

1. “Untitled 1”
   From the album: ()
   Written by: Sigur Rós
  Performed by: Sigur Rós

2. “Suite No. 1, S. 1007 in G Major: Allemande”
   From the album: Bach: Six Unaccompanied Cello Suites
   Written by: Johann Sebastian Bach
   Performed by: Yo-Yo Ma

3. “River Man”
   From the album: Five Leaves Left
   Written by: Nick Drake
   Performed by: Nick Drake

4. “Masters of War”
   From the album: The Freewheelin’ Bob Dylan
   Written by: Bob Dylan
   Performed by: Bob Dylan

5. “I am Trying to Break Your Heart”
   From the album: Yankee Hotel Foxtrot
   Written by: Jeff Tweedy
   Performed by: Wilco

6. “String Quartet in F Major (1903): Allegro moderato. Tres doux”
   From the album: Debussy & Ravel: String Quartets
   Written by: Maurice Ravel
   Performed by: Quartetto Italiano

7. “Sonata for Two Pianos in D major, K. 448: Allegro con spirito”
   From the album: Mozart - Schubert: Music for Piano, Four Hands
   Written by: Wolfgang Amadeus Mozart
   Performed by: Murray Perahia & Radu Lupu

8. “Riding to Work in the Year 2025 (Your Invisible Now)”
   Mixed from the album: Zaireeka
   Written by: The Flaming Lips
   Performed by: The Flaming Lips

9. “Adagio in G minor for Organ and Strings”
   From the album: Albinoni’s Adagios
   Written by: Tomaso Giovanni Albinoni
   Performed by: I Solisti Veneti
   Conducted by: Claudio Scimone

10. “Lost Cause”
    From the album: Sea Change
    Written by: Beck Hansen
    Performed by: Beck

11. “Will Never Marry”
    From the album: Bona Drag
    Written by: Morrissey/Street
    Performed by: Morrissey

12. “Everything Means Nothing to Me”
    From the album: Figure 8
    Written by: Elliott Smith
    Performed by: Elliott Smith

13. “Mad World”
    From the album: Donnie Darko OST
    Written by: Roland Orzabal
    Performed by: Gary Jules