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The Universal Language

"Music touches us emotionally, where words alone can't."

— *Johnny Depp*

Music is a friend, a motivator, an agitator, a stimulant, a depressant, a therapist, and a release for any situation or time that it is needed. Music is a bank of emotions stored over the years by humanity just waiting to be experienced again by the next listener. Music is humanity, and humanity is music. It is the ultimate expression of our emotions and as so many great thinkers and musicians have said before, *music conveys what words cannot.*

Music has the ability to cause spontaneous emotions in us and can even evoke powerful reactions without any prior triggers or cognitions. Does music have a cognitive object? And if not, how is it that we can become emotional without that cognitive object? The aim of this paper is to prove that music does not need a cognitive object to evoke emotions. First the term *cognitive object* must be defined. In this paper, a cognitive object is an object or idea that is processed consciously. The emotional trigger is something we are aware of; such as another's facial expressions, words, or when our own wants, goals and interests are affected. These are all cognitive objects of emotions. Most emotions require a conscious interpretation of events, but I will argue that conscious interpretation is not necessary to feel emotion when listening to music.

The emotions felt when listening to music fit well into the Jamesian view; they are interpretations of physiological changes in response to the music. The music affects us

physically which, in turn, causes an emotion to arise from the changes in our cardiorespiratory system, hormones, skeletal muscle movement, and active areas in our brains. The puzzle that remains is that, in instrumental music, there are no normal cues which prompt these changes. There are no visual clues, no words or concepts conveyed, and our individual wants, goals and interests are not at stake so there is no real reason we should be feeling these emotions. Instead, these three cognitive emotional objects are replaced by three non-cognitive processes:

- 1) The awareness of visual prompts is displaced by the movement found in music.
- 2) Words and complex concepts are more simply communicated through a new universal language.
- 3) The emotional reactions in response to music are instinctual and automatic therefore needing no reason, even though the emotions we feel when listening to music serve no progressive advantage to our daily life.

So, music affects us physiologically which allows emotions to be induced without a cognitive object.

Movement In Music

“Music is an outburst of the soul.”

— *Frederick Delius*

Jenefer Robinson explores music and emotion in her book, *Deeper Than Reason*, and she theorizes that “...happy music can make us happy...” (381 Robinson) and while this seems an excruciatingly simple idea, she expands on it with what she

calls *The Jazzercise Effect*. The Jazzercise Effect describes the changes in a physiological state while listening to music and how those changes cause an emotion. Robinson says that this is an unconscious process which involves relating the changes felt when reacting to music to the reactions associated with certain emotions. She says that this is why the music matches the mood we want or find appropriate. For instance,

Much music has been written to facilitate specific activities: brisk, martial music for military marches, sad, dignified music for funeral processions, gentle, tender music for lullabies, and arousing music of various sorts and degrees for various sorts of dances... (397 Robinson)

She says that the physiological changes we feel when experiencing an emotion are very similar to the changes we experience when listening to music such as changes in hormones, cardiorespiratory system, facial muscles, and skeletal muscle movement. She also theorizes that music is contagious in the sense that our bodies naturally want to synchronize with the music. So, in response to a fast tempo our heart rate rises and in response to rising pitches we want to sit or stand taller. Music creates emotions by directly affecting people's physiology.

Digging even deeper into the idea that music affects our physiology, Stephen Davies believes music to elicit emotion by actually resembling the physical manifestations of that emotion and causing one's body to unconsciously recognize and mimic the musical elements. He calls this theory Appearance Emotionalism. He proposes that we recognize certain emotional characteristics in music. For example, slowly descending minor keys with low bass tones could resemble a sad person who has a falling posture, speaks in a minor key and feels very low and sunk into the

ground. Much like one feels sad when they observe another sad person, the music's sad-like features prompt a similar response. Certain instruments can also resemble human voices when expressing an emotion. Violins and most strings can sing and scream while trumpets can sound like shouts of passion. The various pitches and instruments' tone are reminiscent of a person's voice when he or she is expressing an emotion. For example, angry music features low undertones which sound of a deep growl or passionate, shouting trumpets and saxophones; whereas, happy music can feature bright, harmonious, and moving piano which reminds us of laughter or joyful singing.

Our bodies seem to naturally want to move along with any music we are listening to. Dancing is a common reaction to music and has played a large part in humanity's history. Even if we don't dance, we still find the tendency to conduct to classical music or tap our toes or fingers along with the beat. While these connections are obvious, recent studies have found that our brain's motor skills center is activated when listening to most music. William J. Cromie writes for a 2001 Harvard article on music and the brain: "Neuroscientists have found activity in brain regions that control movement even when people just listen to music without moving any parts of their bodies" (Cromie). Further and even more recent studies show that not only does the brain interpret music through the motor systems, but it also activates a mirror neuron system which subconsciously encourages the listener to mimic the movement observed.

These activations occurred in the motor networks of the brain that are thought to be responsible for following the beat of the music and in the brain's mirror neuron system. The human mirror neuron system appears to play a fundamental role in

both understanding and imitating action... the mirror neuron system provides a mechanism through which listeners feel the performer's emotion, making musical communication a form of empathy..." (Nauert)

This means that not only is the brain subconsciously interpreting the emotion the music is trying to convey, but it is actually feeling the emotion. Musical communication is not about telling or showing the listener what to feel, but it is about making the listener feel the emotion for themselves.

Musical Communication

"Music is the universal language of mankind."

— *Henry Wadsworth Longfellow*

Music evokes an emotion without a cognitive object because it becomes that emotion. Musical communication involves the transfer of emotions rather than the description of them. Theodor Adorno explores the idea that music is its own language in his essay, *Music and Language: A Fragment*. Music consists of technical elements that, when strung together, form a complete idea much like words from sentences. And when these musical sentences are put together they create a song or movement similar to an essay or book. What is missing from this musical language is a concept. Music can only convey the most basic, yet universal, communication we humans possess; our emotions. Instrumental music cannot convey complex ideas, hypotheses or abstract concepts, but it can pass an emotion or feeling from one human to another.

But if musical structure or form is to be more than a set of didactic systems, it does not just embrace the content from outside; it is the thought process by

which content is defined. Music becomes meaningful the more perfectly it defines itself in this sense—and not because its particular elements express something symbolically. It is by distancing itself from language that its resemblance to language finds its fulfillment. (Adorno 6)

Adorno says that music does not just symbolize a thought or idea, it becomes that thought or idea. Unlike language, in which each word stands as a symbol for something, music is universal. For example, only to English speakers does the word “chair” mean something and only to Spanish speakers does the word “la silla” mean something, but really, both words mean the same object. With the musical language, it doesn’t matter what culture they are from, a person could identify a sad song and a happy song. Music defines itself. It needs no words to help convince the listener what emotion it wants them to feel. Music can be seen as one of the most basic forms of communications known to man. It is a way to share one’s emotions with another human being and express oneself. Music is thought to have even preceded language, a claim supported by the discovery of flutes made from animal bones by Neanderthals living in Eastern Europe more than 50,000 years ago. No human culture is known that does not have music. (Cromie)

Not only is music a universal language, but in some cases it even takes priority over actual language. Lyrics to songs tell us what to feel most of the time and even though sometimes ambiguous, tell a story or message through words. Sometimes however, the emotion the lyrics tell us to feel and the instrumental emotion conveyed clash. Occasionally, usually seen in pop music, a sad or angry song can be accompanied by happy sounding instrumentals and beat. When this clash occurs

people almost always interpret the song based on the instrumentals. Taio Cruz sings a catchy song that based on the instrumentals alone make the listener feel a sense of pleasure and the urge to dance with excitement. This excitement and happiness is quickly brought down with the realization that the song is about the listener falling in love with the singer who essentially promises to cheat on her and “break your heart”. When the lyrics are read without the upbeat instrumentals it sounds like a very depressing situation:

There's no point trying to hide it
No point trying to evade it
I know I got a problem
Problem with misbehavin'

If you fall for me
I'm not easy to please
I might tear you apart
Told you from the start, baby from the start

I'm only gonna break break your break break your heart
Break Your Heart - Taio Cruz

Despite this sad state of affairs the lyrics spell out, it remained a popular dance anthem for a good six months or so because people chose to ignore the negative emotions the words conveyed and instead focused on the elated emotion the song made them feel. Another example of this phenomena in pop music is a song called *Some Nights* by Fun. This song has reigned as the latest “pick-me-up” anthem for the past few months and yet when it’s seemingly vague lyrics are inspected a little closer, it tells an anti-war perspective of a soldier, presumably in Iraq, and the burdens he and his family have faced because of the war. Based on the lyrics the song conveys disillusionment and despondency, but conversely, the instrumentals make the listener feel empowered and

hopeful. So while the lyrics of a song can provide a cognitive object and create an emotion; ultimately, the instrumental emotion prevails without a cognitive object.

Natural Reactions to Music

“Beethoven tells you what it's like to be Beethoven and Mozart tells you what it's like to be human. Bach tells you what it's like to be the universe.”

— *Douglas Adams*

So far we have determined that music changes one's physiology which, in turn, creates an emotion within that person. Our bodies want to synchronize with the beat and mimic the elements of the song, but some studies show that not only are these reactions natural, they are instinctual. Stephan Strauss writes about studies on infants' response to tonal change in his article, *Musical Tonality Preferred By Babies*. Reactions to harmonious and dissonant sounds were seen in infants as young as 4 months old.

Harvard University psychologists Jerome Kagan and Marcel Zentner studied the response of 32 infants, some as young as four months old. The Harvard researchers found that the children seemed calmer and more content when harmonious sounds were played. The out-of-tune sounds produced not just looks of disgust, but the infants would look away, cry, fret and not even look at the speaker. (Strauss)

This reaction to dissonance and harmony in infants suggests that emotions are instinctually evoked from music and not taught culturally like languages are. The infants' reaction also can lead to the conclusion that music is in our genes and that there is a universal set of rules which determine our reactions to various musical elements.

Parts of the set of universal rules for music and emotion can be seen in experiments done by John Sloboda in the early 90s. His experiments consisted of

playing classical songs with known musical elements for subjects, and the subjects were then asked to mark in the song where they felt different emotions. Slobada then went back and determined which musical device was used during the time that the emotion was felt. His results showed a few important correlations between certain musical devices and emotional reactions, most notably the device known as an appoggiatura seemed to elicit tears or feelings of sadness. (see Fig. 1 below)

Feature	Number of musical passages provoking a response.		
	Tears	Shivers	Heart
Harmony descending cycle of fifths to tonic.	6	0	0
Melodic appoggiaturas.	18	9	0
Melodic or harmonic sequence.	12	4	1
Enharmonic change.	4	6	0
Harmonic or melodic acceleration to cadence.	4	1	2
Delay of final cadence.	3	1	0
New or unprepared harmony.	3	12	1
Sudden dynamic or textural change.	5	9	3
Repeated syncopation.	1	1	3
Prominent event earlier than prepared for.	1	4	3
Total number of musical passages.	20	21	5

Figure 1. Music-structural features associated with physical-emotional responses.⁵

Appoggiaturas sound much like a leading tone but they are on beat. This is seen in several sad songs over the years including many of Mozart's symphonies, The Beatles' song *Yesterday* and Adele's *Someone Like You*. Adele's song created quite a stir recently as such a sad and emotional song held the top spot in pop for a good amount of time and caused some musical enthusiasts to investigate. Slobada's studies were dug up and the major news broadcasters such as NPR and CNN began throwing the term "appoggiatura" around. So not only is Adele's song sad because of the lyrics and

power in her voice, but she speckled the beginning with appoggiaturas to really squeeze the tears out of her audience. While musical devices might not evoke an emotional reaction from everyone, it seems that the majority can agree that certain devices do indeed induce emotional reactions.

Another set of studies from the 90s, by the psychologist Gordon Bruner, explored the relationship between tempo and emotion. Different identified tempos were presented to various subjects and then the subjects were asked how each tempo made them feel. The results were to be expected, as the tempo is usually the main indicator for emotion in music setting the speed and rhythm.

Results of the Bruner Experiments:

music in 2/4 time: expresses rigidity and control

music in 3/4 time: more relaxed, abandoned

fast tempo: expresses animation, happiness

jerky, uneven rhythms: indicate complex emotions

even rhythms: simpler, unimpeded feelings

firm rhythms: suggest serious mood

smooth-flowing rhythms: playful

staccato: gives more emphasis to a passage than legato

Each tempo had a fairly consistent emotion or mood which was associated with it and most pairings seem quite logical. For example, 2/4 time is what a march is played in, so rigidity and control make perfect sense to feel when listening to a march. On another hand, jerky, uneven rhythms, such as syncopation, evoke more complex emotions because the listener is forced to pay attention to the constantly changing melody.

Following these universal rules of musical devices and tempos, not to mention the complexity of various keys and the levels of minor scales, specific emotions can be conveyed through music naturally; without the awareness of ones wants, goals and interests at stake.

Heightened Realism

“Music acts like a magic key, to which the most tightly closed heart opens.”

— *Maria Von Trapp*

Now that it has been established that music does not need a cognitive object to elicit an emotion, the concept of Heightened Realism can be explored and show further support for the theory that music creates emotions within a person. Music oftentimes provides the emotional reaction in movies. I make this claim based on the theory that the music provides an emotional connection to the fictional characters. Because while the characters can show what emotion they are feeling or directly tell the audience, real empathy is not usually felt for the characters until the music starts. A good film score will capture the emotional quality of every scene even without the visuals or much context. This is why film scores and soundtracks are some of the most emotive music ever created. This idea that music is essential to a film’s emotional quality is termed by Stuart Fischhoff as “Heightened Realism” in his essay, *The Evolution of Music in Film and its Psychological Impact on Audiences*.

Because films are two-dimensional, extra-ordinary experiences, they may need help, as it were, from music. After all, in real life when you’re scared you don’t need scary music to tell you. Absent repressions your body, your nervous

system, your cognitions, tell you that. So, perhaps heightened realism merely levels the playing field enabling films to draw us in and, as the saying goes, suspend disbelief. (3 Fischhoff)

So Fischhoff theorizes that music removes the belief that what we are watching is fictional by connecting us emotionally to the film. This serves as support for my argument in that cognitions are not needed, but merely enhance an emotion derived from music. In this case, the music is essential for the basic emotion while the cognition of what is happening to the characters is not. This heightened realism theory does have exceptions in the sense that without the cognitive connection to the character's story, background and shared history with the viewer it is unlikely that the emotion would be as powerful as the music alone. Or usually when a character cries or is in extreme pain of some kind that is usually enough to elicit a small reaction from the viewer, but otherwise the music still remains the main catalyst for true emotional reaction from the viewer.

Music With Cognitive Objects

"Music produces a kind of pleasure which human nature cannot do without."

— *Confucius*

Like every good theory, mine has a few exceptions. Emotion deriving from music does not always have to be non-cognitive. There are some cases that music evokes emotions using a cognitive object. These cases are situations in which a particular piece of music, or perhaps artist, genre, or style, is attached to a specific memory. This is seen most commonly in songs that are associated with significant events or times in our life. Songs from our childhood, especially familiar lullabies, usually bring us back to

those happy times. Songs playing during traumatic times in our life can bring us back to that day. For example, I was in a car accident last year which totaled my car and knocked my mom out. While the accident happened, Flo Rida's song, *Good Feeling*, blasted out of the radio. To this day, that song only reminds me of the accident and I don't get any "good feelings". Sometimes songs can be associated with past relationships, representing past memories with a particular person. Couples can have "their song" which will forever remind them of the other person even long after they break up. The emotions that the song evokes will then depend on how bitter or friendly the break up was. Lyrics can sometimes create a powerful emotional reaction to a song that otherwise wouldn't elicit such a reaction based on the instrumental alone. The words can relate to an important part of one's life or remind them of a specific person close to them. Film scores can also become cognitively emotional if one remembers the specific part of the movie that the song played in. Then it is no longer your brain subconsciously interpreting the music, but you are cognitively remembering the emotional scene. Another personal account of cognitively emotional music is a beautiful piano song that I found the sheet music for one day and I learned to play it. As I learned to play it my heart always filled with renewed hope, the recovery after a storm or battle, the feeling that I just survived something terrible. One day, I stumbled across a trailer for an awfully made video game called *Dead Island* which features a vacation island overrun by zombies. Morbidly curious, I watched the trailer and quickly realized that my piano song played in the background of this horrific story played backward about a family forced to kill one another as they each turned into zombies. My song of hope turned into a song of horror and destruction and I have never been able to shake that

feeling of dread when I listen to it or play it since. So, when music is associated with a memory, that cognition will prevail over the normal non-cognitive emotion felt with music.

Music is extremely complex and exists in many different forms, yet it seems to span across the ages using the same universal rules to express and share emotions from culture to culture. An American does not need to understand French in order to feel the happiness in a French love song. The universal language known as music lacks a cognitive object, yet can spontaneously evoke powerful emotions in the listener. This is because the emotion is not merely being described or shown to the listener but actually transferred from the artist to the listener. This transfer is done through musical devices which cause the listener's brain to mimic the emotional signals and change the listener's physiology, thus, creating an emotion. Music needs no cognition to create emotion because the music itself is an emotion, just waiting to be felt by anyone willing to listen.



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