

FILM AND MUSIC: AN OVERLOOKED SYNTHESIS

by

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ABSTRACT

Music and image are intricately joined in almost all modern film and video. Despite this, scholars of both fields rarely address the two media as they act on each other. Cognitive studies give an interesting window on the way the brain processes music and image, but again, they do not address the intersection of the two. A few studies, most notably by Marilyn Boltz, do exist that deal with music/image joint processing, and the effect of one on the other. Boltz's work reveals the great potential of further work, both scientific and scholarly, into the synthesis of music and film. A theory of the interaction of the two is clearly needed.

Music and film are two art forms that, in the case of film, exist together so ubiquitously that a mainstream film that does not use music is extremely rare. *Cloverfield* (2008) and *The Blair Witch Project* (1999) are the only recent examples of major Hollywood films that do not have any nondiegetic music throughout the narrative portion of the film. This is because the films purport to be “raw” footage, unadulterated in any way. *Cloverfield* does use very mood specific music over the credits though. Despite these few examples, the vast majority of films and videos—narrative, documentary and experimental—contain both visuals and music. The two media act together, during the same temporal period, and toward the same general end: the stimulation of an audience. Why is it then that the two are treated so separately when any analysis of film or video (I will use film to represent any non-static visual medium) is conducted? Film theory does address musical accompaniment, but “has historically been concerned with the visual and narrative aspects of fiction film, for the most part omitting any serious discussion of the score and its relationship to the film as a whole” (Kassabian 37). In music theory, key texts in the analysis of musical accompaniment can have titles such as Film Music: A Neglected Art. That is not to say that scholars have not done good, insightful work on both sides of the divide, but only that there is room for more, and the potential for better integration.

In addition to the long established fields of film and music theory, a newer area of theory has arisen to investigate both media with a new perspective. The field is cognitive science, and it seeks to understand the underlying mental and physical causes of our response to various stimuli. The concept of applying contemporary research to film is

not entirely new. In 1916 Hugo Munsterberg, a psychologist, applied his field of study to understanding film and provided an analysis that is still useful today (Lopate 10).

Continuing this tradition, the modern field of cognitive science has caught on in both music and film studies and represents an interesting approach to understanding the “why” in the long-held beliefs of film and music theory. Despite, or perhaps because of, the newness of cognitive theory, most of the research and scholarly work approaches film and music separately. Torben Grodal, in his book Moving Pictures: A New Theory of Film Genres, Feelings, and Cognition does not spend more than a handful of his 282 pages talking about the audio element of a film, let alone its score in particular. Music is a similar case. Granted, both areas are incredibly complex in their own right and the combination is that much harder to study and understand. As a result it is not surprising that much of the scholarly work is heavily weighted either musically or visually.

It is only natural that the visual elements of a film command the most attention. Vision is usually the dominant sense compared to hearing, but the two act and interact together in very important ways. Michel Chion recognized both the importance of the role of sound/music in film, and identified a characteristic of sound in film he called “added value” (5) This added value “enriches a given image so as to create the definite impression, in the immediate or remembered experience one has of it, that this information or expression ‘naturally’ comes from what is seen, and is already contained in the image itself” (Chion 5) In other words, sounds, including music, can feel like they are part of the visual track. This could be yet another reason for the dominance of the visual in scholarly works about film. As Chion saw, a better understanding of the

interaction of film and music can lead to a better comprehension of how to both analyze and make films. We need a unified theory of music and film to accurately describe and understand the effect of the full cinematic experience.

Efforts to comprehend and harness the power of music and film in combination began fairly early in the history of film. In 1912, Max Winkler first catalogued music for silent film and notified the Universal Film Company that he could score any film from his catalogue; they hired him immediately (Prendergast 8). This technique was eventually rendered a near science of matching canned music to any silent film, with the style of music being matched to the type and mood of action in the film. Winkler's cataloguing represents one of the first, clear examples of people in the film industry recognizing the importance and influence of well coupled music and film. That an entire industry developed to effectively pair the two media shows both that it is a relevant topic, and that it requires a certain degree of skill and thought. Unfortunately, since the thrust of Winkler's, and others', cataloguing was to find the music that best matched the tone or mood of the current action in the film, it reduced the potential for artistic expression through a creative dynamism between the music and image.

Some filmmakers, like the most famous Russian filmmaker of all, Sergei Eisenstein, did try to use music contrapuntally rather than complementarily. This approach was very much in keeping with Eisenstein's theories about montage and juxtaposition. In a manifesto co-written with V.I. Pudovkin and G.V. Alexandrov, he said that "Only a contrapuntal use of sound in relation to the visual montage piece will afford a new potentiality of montage development and perfection" (qtd. in Weis 84). For

Eisenstein, “Art is always conflict” (46) and only through the fusion reaction of *thesis* and *antithesis* could there be artistic creation: *synthesis*. One aspect of this conflict that Eisenstein recognized was a conflict between the visual experience of the film and something else: “Thus does conflict between optical and acoustical experience produce: *sound-film* which is capable of being realized as *audio-visual counterpoint*.” (54-55)

Contrapuntal use of music did not mean that Eisenstein was not interested in carefully pairing the two. Indeed, after the advent of synchronous sound, he attempted to create some form of absolute fusion of the two. For Eisenstein, this did not mean synchronizing the music and image in the traditional style of matching moments in the music to the editing or on-screen action, but rather a more graphical, thematic relationship. In Eisenstein’s film *Alexander Nevsky* (1938), he commissioned Sergei Prokofiev to compose a score that graphically matched, shot by shot, his film. If the screen showed a descent down a cliff, the music had descending notes and so on. According to film music scholar Roy M. Prendergast, not only did this approach not work, it was flawed from the start. He notes that Eisenstein was too focused on matching the notation of the music to single frames of his film. This ignores that both media are not static, but exist temporally, and the music notation is not music itself (Prendergast 224-25).

German filmmakers were also very interested in the interaction of film and music. In the early 1930s, the German Film Research Institute played with the rhythms of both music and film by cutting to music and moving the camera to express the equivalent of musical movement (Prendergast 26). They also tried to create a one-to-one correlation

between musical elements and filmic elements, so that a certain instrument could be represented by a certain filter and so on. According to Ernest Borneman, the Institute's final, ironic, conclusion was that "musical accompaniment of films is not so stimulating as we are inclined to believe" (qtd. in Prendergast 27).

Fortunately, not all filmmakers shared the perspective of the German Film Institute, and musical scores to films have flourished since the advent of synchronous sound. Despite the ubiquity of music in film, according to Anahid Kassabian, "the groundwork has been laid for the serious study of film music in the English language only in recent years" (36). Indeed, Prendergast claims that when his book Film Music: A Neglected Art was released in its first edition in 1977, it was the first work of critical literature on the subject except for a few articles by Lawrence Morton (ix). There were other books on film scores at the time, such as Roger Manvell and John Huntley's The Technique of Film Music, but the field was certainly not saturated. There are many more works by music scholars now, but the focus tends to be on the music in the film and not the union of the two.

For example, in Royal Brown's book Overtones and Undertones: Reading Film Music, Brown talks about the use of John Williams' famous shark theme from *Jaws* (1975). The theme appears in the film whenever the shark is present, but is absent when the two kids pretend to be the shark. The music gives an almost subliminal cue that the visuals, which Spielberg plays to full effect, are trickery (Brown 10). This is a very insightful observation, but in the end only offers an example of music clarifying plot. Similarly, in his book Film Music, Peter Larsen talks about Bernard Herrmann's score for

North by Northwest (1959). Larsen begins his analysis of the film's opening with a brief description of the visuals, followed by an in-depth dissection of the music that contains only a couple sentences referring back to the visual, thematic, and narrative content of the film (127-29). From a musical standpoint all the observations made by Brown, Larsen and Prendergast are helpful, accurate and insightful, but from a filmic standpoint, they don't make as many connections as they could.

Film studies literature is weighted more heavily in the opposite direction: towards the visual. In Film Art: An Introduction, David Bordwell and Kristin Thompson devote one chapter out of twelve to sound in the cinema. In that chapter, they talk about the technical details of audio and the different elements such as dialogue and sound effects, spending only eight pages on role of music in film. Film is a complex amalgamation of many disparate elements, and no one can get a great deal of attention in a book that provides an overview, but at the same time, playing any modern narrative film without the score would create an audience response of boredom, and potentially a lack of comprehension.

Film scholars can even be openly hostile toward music. Jean-Pierre Geuens reflects this attitude in his book Film Production Theory. He complains that film music merely serves to agree with and amplify what is on the screen or in the plot. This, he feels, is potentially deceitful since music can gloss over subtle problems and deliver a happy ending to a story where characters may go on to live traumatized lives. Geuens uses the example of the end of *The Accused*, where the female main character has just won an unlikely court victory. "Right on cue, the music swells to the occasion somehow

forgetting that the woman has gone through a vile group rape, that she was abused by the justice system, that she was deserted by her friends, etc.” (Geuens 209). It is ironic that in denouncing Hollywood film music, Geuens is also clearly recognizing the power that the music has over the audience. Instead of undertaking an investigation of this power, he proclaims it unfair and inartistic, and says that to avoid this misuse, “A simple solution consists of having the music come diegetically from the images themselves” (210).

When film critics and scholars do seriously address the music in film, they usually analyze it for its role in the narrative, pace and mood of the film, much as music scholars do. The music is somehow separate from the images and while it contributes to what the images are doing, it is a secondary element and not part of a dynamic interaction. Like the reductionist approach to research, films are most easily analyzed piecemeal rather than holistically. This can certainly change, and there is a powerful new science-based approach to both film and music theory that could act as the catalyst for such a shift.

The new fields of cognitive film studies and cognitive music studies carry with them the potential to unify the two previously disparate elements. This unification has not yet come to pass, but cognitive studies has revealed a great deal about how both film and music are processed, and why certain aspects of them create such strong responses. This is exciting because it offers new ways to think about film and music, and the combination of the two. As processes within the brain, visual and auditory inputs have interesting overlaps and interactions.

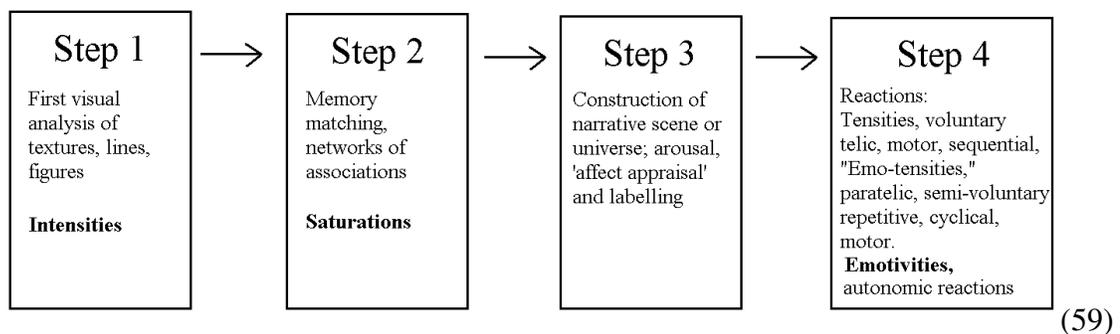
What the cognitive approach to film and music has done is to take the current research in neurobiology and psychological mechanisms, and apply it to understanding

how the mind processes images and sound. An example of the difference between this approach and the traditional film studies approach can be illustrated by the jump cut. A non-cognitive approach to the jump cut would describe how it breaks continuity editing, can disorient the viewer, and can serve a role in storytelling. This approach describes the event in a more historical and aesthetic way. A cognitive approach could talk about the orienting response to a formal feature such as a cut and how this can affect the perceived reality of the sequence. To cognitivists, a cut is different from an edit in that a cut is a move from one location to another and an edit is a new shot in the same location or scene (Lang 97) The viewer's brain registers the new shot and immediately tries to make sense of it and place it accurately in the context of what has come before. This is the orienting response. Studies have found that four to eight cuts per thirty seconds can lead to an improvement in memory formation, but ten or more cuts in those same thirty seconds can cause the viewer to automatically accept the legitimacy of what he or she is seeing (Lang 97, Shapiro, "Only" 14). Obviously, the cognitive and traditional approaches describe things at very different levels and both are needed to fully describe any aesthetic experience. With this difference in mind, it is quite interesting to see what cognitive theory says about film and music in areas where they overlap.

In his book Moving Pictures, Torben Grodal attempts to explain the emotional response to films through visual/cognitive means. He describes how the mechanisms of the brain, designed to cope with real, everyday life, are called into service during a cinematic experience and "hijacked" by the imaginary world to create empathetic bonds with characters and involvement in the plot. Grodal "demonstrate[s] the means by which

visual communication relies on attention hierarchies structured as associative networks” (62). Obviously, his focus is on the visual and his discussion of other elements is limited to asides such as “Other types of special attention, too, rely on some kind of mental filtering” (Grodal 62). His offhand comment implies, and has been borne out through research, that the visual and audio elements of a film are processed through different mechanisms within the brain.

Grodal also provides a greatly simplified flow diagram of the fiction processing cascade, reproduced below:



The important elements to consider for this discussion are the arousal and emotivities. From an essentially visual standpoint, Grodal is describing how and “when” film is creating emotional response and arousal, which in cognitive discussions merely means a heightened state of any given mood. One way to elicit this response cascade is by the alteration of patterns or rhythms. Grodal says that “Rhythm has traditionally been one of the most characteristic features of songs and poems, and is, furthermore, characteristic of the function of many processes regulated by the autonomic nervous system, like pulse and breathing” (55). He goes on to quote research by Pribram in 1982 who said that

“variations on a repetitive pattern (novelties) evoke dishabituation (orienting) which is felt, and the feeling is generated independently of the recognition of the variation” (qtd. in Grodal 55). Pattern repetition and variation perhaps represent the base level at which film and music operate and are unified. This issue of pattern repetition is very important to music cognitivists and plays a far more central role in their works.

Daniel Levitin tackles cognitive issues from the music side in his book [This is Your Brain on Music: The Science of a Human Obsession](#). Like Grodal, a large part of his book is dedicated to music’s ability to evoke emotion as well as the role of patterns in music. Levitin goes into some detail about the cascade of brain activity that occurs when an individual listens to music. Regions of the brain associated with pleasure are activated, as are regions that researchers have linked with processing rhythm and meter. One part of the brain that handles rhythm processing is the cerebellum, which, interestingly, also helps regulate emotion by way of connections to the frontal lobe and the limbic system. This dual function of the cerebellum could be a coincidence that helps make music more compelling and emotionally stimulating, or it could be that these two functions exist in one location to make sure that finding and following a pattern, like music, is pleasurable. As Levitin puts it: “Music is clearly a means for improving people’s moods. Now we think we know why. [. . .] Music breathes, speeds up, and slows down just as the real world does, and our cerebellum finds pleasure in adjusting itself to stay synchronized” (191).

Clearly, Levitin feels, and is supported by research, that pattern, emotion and music are closely, causally linked. He talks explicitly about the importance of the

cerebellum, which is home to the autonomic nervous system that Grodal mentions. While the immediate processing of film visuals and music happen in different places—the visual and auditory cortexes respectively—enjoyment of them seems to come from the same source. If some of the pleasure of music comes from activity in the cerebellum matching the patterns in the music, and at least some processing of film is tied to the cerebellum, then it stands to reason that a certain amount of the enjoyment of film comes from visual patterns activating the cerebellum. This alone could have stunning implications for the study of editing rhythms and the pacing of camera movement, but it is at the junction of film and music that the greatest potential occurs. If the cerebellum is a location where both music and image are processed, then could certain combinations of the two be more effective than others, or each element singly? I don't have the answer to that question, but it represents a promising area of investigation.

Later in his book, Levitin makes another observation that relates to film, music and movement. He says that “One striking find is that in every society of which we're aware, music and dance are inseparable” (257). The urge to move to music is apparently an integral part of the human psyche and not linked to any particular cultural impetus. Is it possible that the pairing of music and film satisfies this movement urge? This would mean that the movement of the camera, the flow of the editing, and the movement of on-screen elements could both act as a surrogate for the viewer's own movement and add to the enjoyment of both media. This possibility could also add to the explanation of why IMAX and OMNIMAX are so immersive. By encompassing the peripheral vision with screen and the ears with highly dynamic surround sound, large format presentations

create such a believable experience that some viewers suffer vertigo. The simulated movement, paired with high fidelity music that creates an urge to move, might help to explain why a movie on IMAX is such a satisfying experience, provided you don't get sick of course. Combining this layer of movement processing in the brain with the possibility of some image/music interaction in the cerebellum gives a fairly robust explanation for why the music/film pairing is so effective and evocative.

Speculation aside, it is clear that the role of structure in the emotive power of music is tied to the brain's ability to detect patterns, and its subsequent anticipation of those patterns. By altering the expected result or pattern, music evokes an emotional response. Interestingly, musical pieces, and beats in particular, are best at evoking emotion when they are not perfectly metronomic, or machine-like. A very slight alteration of pattern and tempo within a very clear pattern is pleasing (Levitin 171-3). Brown also acknowledges the importance of pattern creation and alteration in the emotive effect of music: "Psychologically and aesthetically speaking, tonality sets up a certain order, creates a sense of loss and anxiety in its various departures from that order, and then reassures the listener by periodically returning to that order, which will generally have the final word" (3). Additionally, Brown notes that tonal music derives much more of its effect on active anticipation than on actual surprise (5). The music as the killer creeps up the stairs creates the emotional charge, and the brief shriek of strings as the killer strikes is merely the release of that tension, and a breaking of the pattern.

While the vast majority of Levitin's book is strictly about music, he does comment on the role of music in film. "Film directors use music to tell us how to feel

about scenes that otherwise might be ambiguous, or to augment our feelings at particular dramatic moments. [. . .] Music is being used to manipulate our emotions and we tend to accept, if not outright enjoy, the power of music to make us experience these different feelings” (Levitin 9). His analysis matches in large part what the status quo opinion of film music is; that it helps explain and amplify that which the filmmaker has already built into the visual structure of the film. However, Levitin’s comment about ambiguous scenes is more important than he realizes.

The nexus of music and film has not been a major target of cognitive studies, but it has not been completely ignored either. In 2001 and 2004, Marilyn Boltz of Haverford College conducted some very interesting and illuminating studies of the influence of music on the cognitive processing of film. Her findings show fairly conclusive proof of what many filmmakers, viewers, and critics have found anecdotally; that a change in music can alter the perception of a scene. Boltz concluded that music with alternate moods activated different schemata which led to changes in selective attending to details in the film (Boltz, “Musical” 431). She also found that various effects were elicited in memory depending on the congruence or lack there-of between music and image (Boltz, “Cognitive” 1199).

In her first study, Boltz showed subjects clips from Hitchcock films and television programs that were, when shown out of context, ambiguous in terms of mood and character intent. She made sure that they were fairly uncommon so as to be unfamiliar to the subjects and re-titled them to help reduce associations. For various groups, she then played the clips with music that was either positive or negative in mood, or no music at

all (Boltz, "Musical" 433). One such clip was from *Vertigo* where Jimmy Stewart's private investigator character Scotty is following a woman he has been paid to follow and is infatuated with. The results of the different music are astounding. With the positive music none of the viewers thought Scotty intended to harm the woman, but with the negative music 82 percent thought he did intend to harm her. With positive music 35% felt he was caring/loving, with negative music 47% thought he was cold, and with no music 56% thought he was either intelligent or analytical (Boltz, "Musical" 439). These results show a strong, and fascinating, parallel with an early film experiment.

One of the most famous film experiments was conducted in the 1920s by Russian filmmaker Lev Kuleshov, who showed audiences neutral, identical footage of a famous Russian actor staring off camera paired with three different shots. These shots are sometimes said to be of a baby, a dead woman, and a bowl of soup, although no one is sure. The audiences are reputed to have been sure that the actor was in the same space as those three elements and doing a superb job of showing pleasure, sorrow and hunger respectively. Film scholars deemed this editing trick the Kuleshov effect, and it has been utilized ever since (Bordwell 305). As Boltz proved, there is a certain musical equivalent of the Kuleshov effect.

The results of Boltz's experiment also show how schemas are drawn upon depending on the music playing. Not only did the valence of the music affect how the viewers felt about the scene, but it affected what they remembered. Those who heard positive music remembered how the day was sunny and there were flowers, whereas the negative music group remembered a dark sedan and an alley. The music "told" them

what to watch for. So strong were the schemas activated by the music that viewers even remembered items that fit into the schema, but were not present in the film (Boltz, “Musical” 446).

This idea of activating schemas is similar to the concept of priming, where the first element in a group determines the context and interpretation of following items. Grodal gives the example of two lists of identical words:

Skyscraper, cathedral, temple, prayer

Cathedral, temple, prayer, skyscraper (68)

In the first, skyscraper primes the reader to think about buildings, and so prayer seems out of place. In the second, cathedral primes to reader to think religion, and so skyscraper seems out of place (Grodal 68). Music can apparently activate the same schema network and this has profound implications for filmmaking. Provided the audience is familiar enough with the music, style of music, or musical convention, the filmmaker can actually direct their attention to various elements within the frame, make them remember certain objects better regardless of their time on screen or visual importance, and even remember things incorrectly. No doubt this is already happening in cinema, but the directors are probably not aware of the degree to which they can control it.

Boltz’s second study was very similar, but was targeted more at memory than interpretation. In this study she showed short clips that she selected for a fairly clear

emotional valence, and again showed different groups the clips with positive, negative and no music. Additionally, she asked subsets of each group to pay strict attention to either the music, the visuals, or both (Boltz, “Cognitive” 1197). What Boltz found was that, in general, films paired with music of similar affect (i.e. positive film with positive music) were remembered better than those with incongruent affects. She also found that when film and music were congruent, subjects who paid attention to the music still remembered the film quite well, whereas when the music and film were incongruent, they did not remember the film as well. Recall was best when the subjects paid attention to both (Boltz, “Cognitive” 1198). This means that when the film and music reinforce each other, both are remembered better and even if the viewer is focusing on one over the other, both are being encoded into memory well.

Boltz does note that often in films, such as *A Clockwork Orange* (1971), music is played that is totally incongruent with the visuals, and yet is extremely, if not more, memorable. She says,

However, even though ironic mood information may be processed to influence the interpretation of events, the lack of common stimulus properties prevents a unitary encoding. Hence, in order for encoding to occur, one must selectively attend to one modality independently of the other. (“Cognitive” 1203)

But, she then goes on to say, “It may be that a different pattern of results would arise from using feature length films and/or scenes that are more extreme in their inherent affects” (“Cognitive” 1203). Regardless, Boltz’s studies show the incredible potential within music-film pairings.

Notably lacking is the study of the cognitive processing of music with visuals of different valences. The results of such a study could be equally revealing about viewer response, interpretation, and encoding. Despite this lack, it is clear that the implications for filmmaking in general, and documentary in particular, are tremendous. With the proper combination of score and visuals, films with an educational purpose could encode to memory that much better. Also, documentaries often claim to be neutral in their stance on the topic they cover. While many viewers and most critics know this to be untrue, the general population often takes such claims of neutrality seriously. How much of a role does music play in the swaying of the viewer beyond the simple “good music for good things” concept? Conversely, for unabashed agenda-driven documentarians, how much better could they affect the populace with informed, astute music choices? Rather than viewing music as a support, filmmakers can now see music as an additional, and extremely powerful, tool for control. Studies have shown that viewers don’t remember the elements of an agenda film that led them to a conclusion, they remember their conclusion and how they felt during the film (Shapiro “Psychology”). For example, audiences probably don’t remember all the information presented in *An Inconvenient Truth* (2006), but they likely remember how they felt while watching it and if it convinced them about global warming.

All of this leads to the inevitable conclusion that there must be a proper, unified study and theoretical framework of music-film interaction. As Levitin, paraphrasing philosopher Alan Watts, says “If you want to study a river, you don’t take out a bucketful of water and stare at it on the shore. A river is not its water, and by taking the water out

of the river, you lose the essential quality of river, which is its motion, its activity, its flow” (Levitin 144). Just as no film scholar would dream of analyzing a single frame in lieu of the whole film, or a music scholar would study a note instead of the entire composition, neither should they study film or music separately when they come paired. The field is wide open and there are many places to start.

I myself have made an experimental film that explores the musical parallel of the short shot of a counter laden with various trinkets and photos, paired again and again with music of different valences and qualities. The music sources came from films like *The Usual Suspects* (1995), *Gettysburg* (1993), and *Forrest Gump* (1994), as well as songs from Green Day, Bob Marley, and Massive Attack. The anecdotal evidence from this film showed that viewers responded differently to each pairing, noticed different objects within the shot, and gave the objects different emotive characteristics, varying from cute to creepy. In particular, a carved wooden toad, a porcelain fawn, and a posed high school photo, all took on different attributes. Depending on the music, the toad was comical, non-existent, or ominous. The boy in the photograph was sometimes looking out with murderous intent, and sometimes with great poignancy. Often, with similar but slightly different music, there was a subtle shift in the nuance of the object’s “feel”. This “Boltz Effect” certainly deserves greater study, attention and critical discussion.

Rhythm, the element that musical scholars and cognitivists describe as key to understanding music and its emotion effect, also seems to be worthy of further exploration from the musical and visual sides. The concept of visual rhythm was of great interest to Sergei Eisenstein. Eisenstein’s great passion was for editing and all the

possibilities inherent in it. His theory of montage editing, with shots adding up to create new meaning, is still relevant, insightful and useful today. Part of editing is establishing a rhythm, or pattern, to the shots in both duration, and sometimes, composition within them. Of his magnum opus, *Battleship Potemkin* (1925), Eisenstein himself said it shows that “the music must also be governed, not only by the same images and themes, but as well by the same basic laws and principles of construction that govern the work as a whole” (178). While in *Alexander Nevsky*, Eisenstein was able to work with a synchronous score, in *Battleship Potemkin*, he was not. However, Eisenstein was one of the first to plan the live musical accompaniment to deliver maximum effect, and not be, as he put it, “musical illustration” (177). He combined rhythmic editing with rhythmic music to create the Odessa Steps sequence, often hailed as one of the gems of montage editing. Eisenstein worked in close collaboration with his composer, Edmund Meisel. Meisel, according to biographer Alan Kriegsman,

Brilliantly understood [. . .] that the music for *Potemkin* could not remain a mere background or accessory. It had to become an ingredient of the film itself, one with the rhythms and textures and feelings of the picture. In consequence the cumulative power of the graphic and tonal mixture is unique. For sheer visceral agitation, there is nothing in all film history to rival it, even today, and very little in any other realm of art that comes close” (qtd. in Prendergast 15).

Beyond any one aspect of the interaction of film and music, I feel that combining them can create an effect far greater than the sum of the two separately. Many of the great film moments are the result of such synergistic effects. The opening credits of *Jaws* are a serviceable example. Watching the title sequence with the sound off is a rather neutral experience. There is grainy footage of the ocean floor and sea life, but it is not

particularly frightening or exciting by itself. Likewise, listening to the opening music without any visuals creates a creepy feeling, but not a particularly strong one. The music is so well known, that it is hard to simulate a first listen. Immediately images of the shark and scenes from the movie will pop into the minds of most people. On its own, the music is very good, but would not keep anyone from swimming. Only when the two play together is the true effect felt. Watching that opening alone could make a person who didn't know anything else about the movie fear unseen things in the water the next time they went to the beach. That is the power of film and music together.

In the *Jaws* example, the music does not even need to be carefully synchronized to the image to create its full effect. In other cases, however, the timing of the music and image can be very important to creating a synergistic effect. Again speaking from my own experience, matching cuts or on-screen movement to beats in the music is frame sensitive and makes a huge difference. When the moments line up perfectly there is an incredible smoothness and power to the film as a whole. If the visual and audio are off by even a single frame, the film can seem choppy and loses much of its ability to evoke a response. Perhaps this is the result of the cerebellum trying to follow two patterns that are slightly out of synch and thus becoming "frustrated" or "confused." I think that most everyone has felt both the thrill of perfectly synchronized music and image, as well as the slight emptiness that accompanies asynchronous pairings.

The final effect of this synergy that I would like to explore is how film and music can elevate each other when one is lacking. Music that, by itself, is unmemorable, or even clashes with the viewer's taste can be quite effective when it is with the right

visuals. Likewise, visuals that are only mediocre in composition, clarity, or assembly can be very interesting and effective if the music is really good. Good is of course a subjective term when referring to music or film, and the synergistic effect is certainly greater when the viewer/listener likes at least one half of the equation. When the filmgoer likes both the image and music the effect is most pronounced. The joining of film and music is so strong and effective, I think anyone who sees or hears part of a very familiar movie automatically and unconsciously imagines the missing half of either music or image. Can someone familiar with *Star Wars* (1977) watch the opening titles without remembering, or even humming the music? Could this same person hear the Imperial March and not picture Darth Vader?

One of the greats of film theory and production, Eisenstein, was very clear on the importance of the unification of film and music. It is unfortunate that a more unified theory of film and music does not exist today. The dominance of visual stimuli over auditory, and the difficulty of understanding the complexities of one element, let alone the interaction of two, have prevented a fully unified analysis and theory from developing. Eisenstein believed that two shots could create something greater and more meaningful, and he apparently felt the same way about film and music. It does definitely seem that there is a synthesis of music and image that transcends either one. This relationship should be acknowledged, respected, and explored by scholars, because it holds within it great potential for the future of filmmaking.

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