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The role of music communication in cinema

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Prelude

Past research leaves no doubt that music is an effective medium for communication. When one considers, however, the matter of *what it is that is being communicated* "the plot begins to thicken," to use a filmic metaphor. In the following pages, after presenting a general model of music communication, we will introduce models – both empirical and theoretical – of film music perception and the role of music in film, referencing some of the most significant research investigating the relationship between sound and image in the cinematic context. Finally, we shall enumerate the many ways in which the motion picture soundtrack can supplement, enhance, and expand upon the meaning of a film's narrative, providing specific cinematic examples. Throughout this chapter, the terms film, cinema, and motion picture will be used interchangeably. The authors acknowledge the distinction between the three terms and the variety of media types upon which each may exist. Because sound can be congruent with an image, in dramatic opposition to what is expected, or simply different from what is conventionally anticipated, "the sound track can clarify image events, contradict them, or render them ambiguous" (Bordwell and Thompson, 1985, p. 184). The relationship between the auditory and visual components in cinema is both active and dynamic, affording a multiplicity of possible relations that can evolve – sometimes dramatically – as the narrative unfolds. This chapter will take a cognitive approach to the study of musical communication in cinema. As a result, much attention will be paid and credence given to the results of experimental research investigating the perception of human beings in response to the motion picture experience.

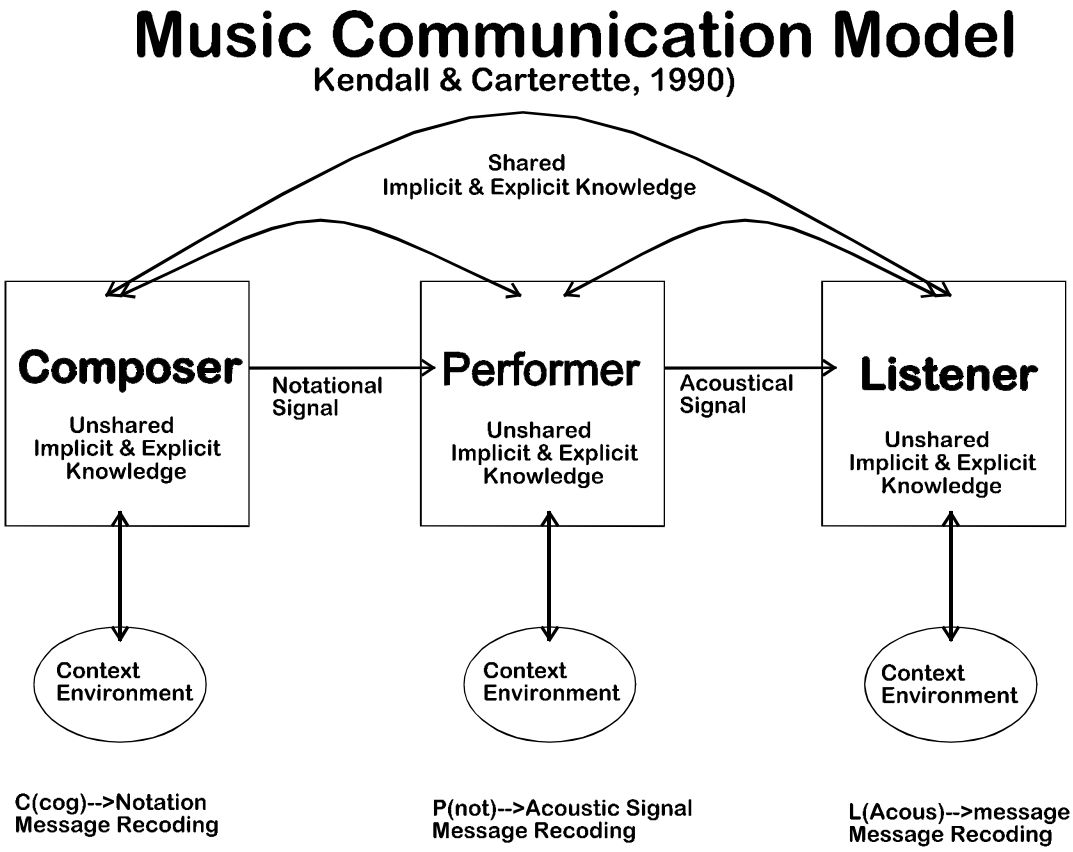
Prior to the 1990s, as noted by Annabel Cohen (2001), the study of film music and its role in the cinematic context had been widely neglected by both musicologists and psychologists. There is now a significant amount of research confirming that the presence of film music affects the perceived emotional content of a visual scene (e.g., Boltz 2001; Bullerjahn and Güldenring 1994; Iwamiya 1994; Krumhansl and Schenck 1997; Lipscomb and Kendall 1994; Marshall and Cohen 1988; Tannenbaum 1956; Thayer and Levenson 1983), influences the specific aspects of a scene that are remembered (Boltz 2001; Boltz *et al.* 1991), and is capable of providing a sense of closure (Thompson *et al.* 1994). Music also has the potential to evoke emotion in a scene that would, in its absence, be perceived as neutral. A well-known excerpt demonstrating this fact can be found in Alfred Hitchcock's *Psycho* (1960; timing [represented as *hh:mm:ss*] was taken from the Collector's edition DVD, Universal 20251). In the "rainstorm sequence" scene (25:35), Bernard Herrmann's musical score creates the jarring tension felt by the audience, a tension not present when the scene is viewed sans music (Smilow and Waletzky 1992; Waletzky 1995).

We will argue for a more inclusive definition of the term "film music" than that proposed in previous publications. In our view, film music is one component of a spectrum of sound that includes the musical score, ambient sound, dialogue, sound effects, and silence. The functions of these constituent elements often overlap or interact with one another, as will be described and demonstrated in the following pages. Using one extended excerpt from *2001: A Space Odyssey* (1968), the present authors have suggested that, in the absence of a composed musical score, other elements (e.g., ambient sound) can function similarly to music, providing dynamically shifting and structurally meaningful sound to propel the narrative forward (Tolchinsky and Lipscomb in preparation). Before proceeding, however, let us reflect briefly upon the music communication process in general.

A model of music communication

Many studies have investigated various aspects of musical communication as a form of expression (Bengtsson and Gabrielsson 1983; Clynes 1983, Gabrielsson 1988, Senju and Ohgushi 1987; Sundberg *et al.* 1983). A tripartite communication model was proposed by Campbell and Heller (1980), consisting of simply a composer, performer, and listener. Using this previous model as a foundation, Kendall and Carterette (1990) elegantly expanded upon this model of music communication, elaborating upon and clearly defining the constituent parts and elucidating the specific interrelationships that exist (Figure 1). In an attempt to determine how, specifically, a performer conveys composer-intended information to a listener, they outline a process involving multiple states of coding, decoding, and recoding. Because music is a culturally-defined perceptual artifact, existing in the mind of enculturated listeners (Hood 1982; Lomax 1962; Merriam 1960; Nettl 1983), successful communication must involve shared implicit and explicit knowledge structures. In the context of music communication, we would suggest that the degree to which a composer/director "succeeds" in communicating a musical message is in direct proportion to the level of agreement between the emotional and/or expressive intent of the message and that perceived by the listener. Kendall and Carterette suggest that this process involves the "grouping and parsing of elementary thought units" (p. 132), these "thought units" (metasymbols) are mental representations involved in the process of creating, performing, and listening to musical sound. For additional information related to these topics, see the discussion of communication theory – specifically, information theory – by Cohen (this volume) and Juslin's chapter on the expression of emotion through music (also this volume).

Figure 1. Kendall and Carterette's (1990) model of music communication. Reprinted by permission of The Regents of the University of California, ©1990.



Models of Film Music Communication: Empirical Evidence

Several researchers have proposed models specific to the perception and cognition of music within the cinematic context. Initiating this systematic effort, Marshall and Cohen's (1988) bipartite "congruence-associationist" model suggests that the meaning of a film is altered by the music as the result of two complex cognitive processes. Based upon subject responses, the researchers determined that musical sound directly effects subject ratings on the Potency (strong-weak) and Activity (active-passive) dimensions, while the Evaluative dimension (good-bad) relies on the degree of congruence between the audio and visual components on all three dimensions, as determined by a "comparator" component. The second part of the model describes how musical meaning is ascribed to the film. Marshall and Cohen claim that attention

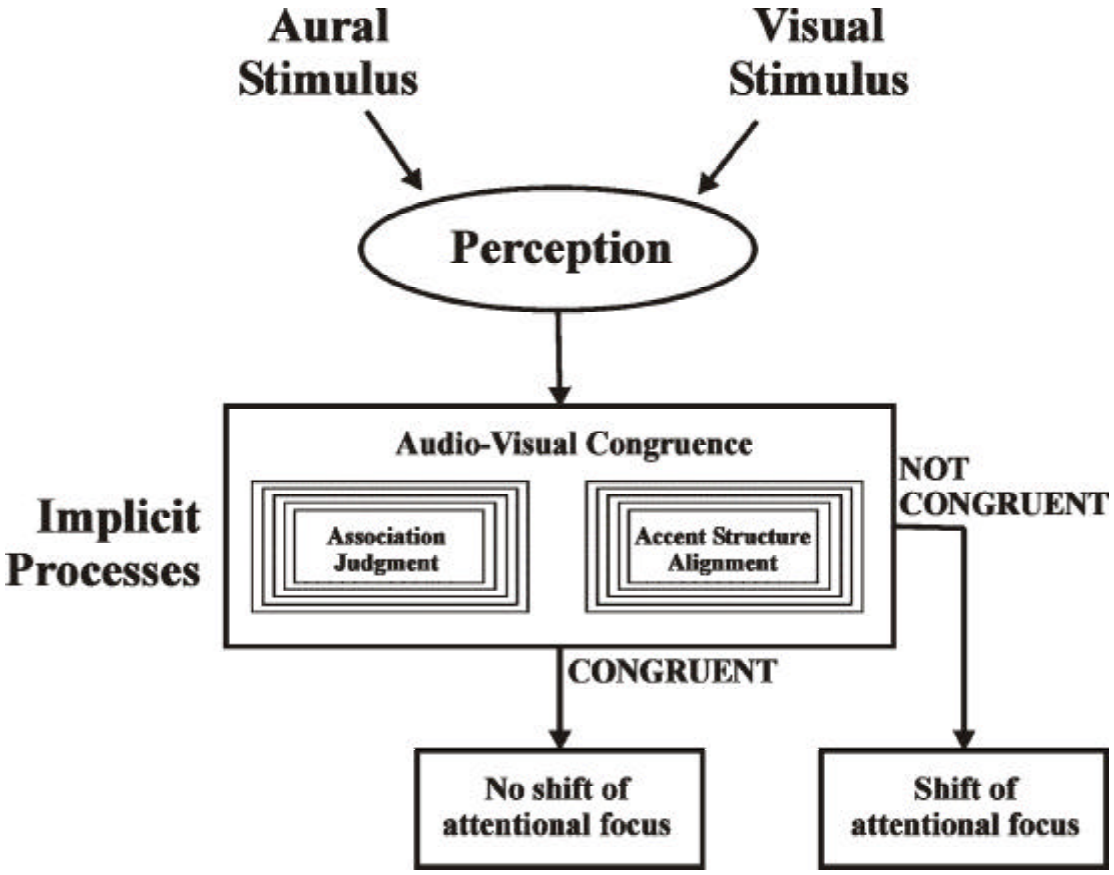
is directed to the overlapping congruent meaning of the music and the film. Referential meanings associated with the music are ascribed to the overlapped (congruent) audio-visual components upon which attention is focused. As a result, "the music alters meaning of a particular aspect of the film" (1988, p. 109).

Marshall and Cohen also acknowledge the important role played by temporal characteristics of the sound and image, stating that "the assignment of accent to events will affect retention, processing, and interpretation" (1988, p. 108). Incorporation of this important component of the developing model was provided by Lipscomb and Kendall's (1994) Film Music Paradigm, in which two implicit processes are considered as the basis for whether attentional focus is shifted to the musical component or whether it is likely to remain at the subconscious – cognitively "inaudible" – level (Figure 2). Analyzing the results of two experiments in which excerpts from *Star Trek IV: The Voyage Home* (1986) were used as experimental stimuli, the authors suggested that these two implicit processes include an association judgment (similar to Marshall and Cohen's assessment of "congruence") and an evaluation of the accent structure relationship between the auditory and visual components, i.e. the extent to which salient events in the musical score occur simultaneously with significant events in the visual scene.

Based on the results of a series of three experiments utilizing stimuli ranging from extremely simple, single-object animations to actual movie excerpts, Lipscomb (1995) determined that the role of the two implicit judgments appears to be dynamic such that, with simple stimuli (such as that used in Lipscomb 1995, Experiment 1 and Marshall and Cohen 1988), accent structure alignment plays a dominant role. As the stimuli become more complex—complex animations and actual movie excerpts—the primary determinant of meaning in the

auditory domain appears to shift to the associational judgment, with the accent structure alignment aspect receding to a supporting role, i.e., focusing audience attention on certain aspects of the visual image (Boltz 2001). The changing relationship revealed in Lipscomb (1995) provides confirmation of an early warning stated by Lipscomb & Kendall (1994). The authors proposed that generalizing results of studies incorporating highly reduced stimuli (like Marshall & Cohen, 1988) to the actual motion picture experience is problematic. The extreme simplicity of the visual imagery and the musical "score" (which is itself highly repetitive) "fail[s] to provide an accurate representation of the highly developed craftsmanship evident in a typical movie score" (p. 63). As shown by Lipscomb (1995), the level of stimulus complexity does appear to alter the manner in which the various audio-visual components and their interrelationships are processed in human cognition.

Figure 2. A revised version of Lipscomb and Kendall's (1994) film music paradigm. The original model was printed as Figure 7 in Lipscomb & Kendall (1994). Reprinted by permission of *Psychomusicology*.



The most complex and fully developed model of film music perception proposed to date is Cohen's (2001) "congruence-associationist framework for understanding film-music communication" (p. 259; see Figure 3). This multi-stage model attempts to account for meaning derived from the spoken narrative, visual images, and musical sound. Level A represents *bottom-up processing* based on physical features derived from input to each perceptual modality. Level B represents the determination of cross-modal congruence, based on both semantic (associational) and syntactic (temporal) grouping features. Level D represents *top-down processing*, determined by an individual's past experience and the retention of that experience in long term memory. According to this model, the input from levels B (bottom-up) and D (top-down) meet in the observer's conscious mind (level C), where information is prepared for

transfer to short term memory. In its details, clearly documented in Cohen (2001), this model is based on an assumption of visual primacy, citing several studies that have suggested a subservient role for the auditory component (Bolivar *et al*. 1994; Driver 1997; Thompson *et al.* 1994). Though a common assumption throughout the literature, the present authors would like to express reservation about this assumption and suggest that additional research is required before such a claim can be supported.

Figure 3. Cohen's (2001) congruence-associationist framework for understanding film music communication.

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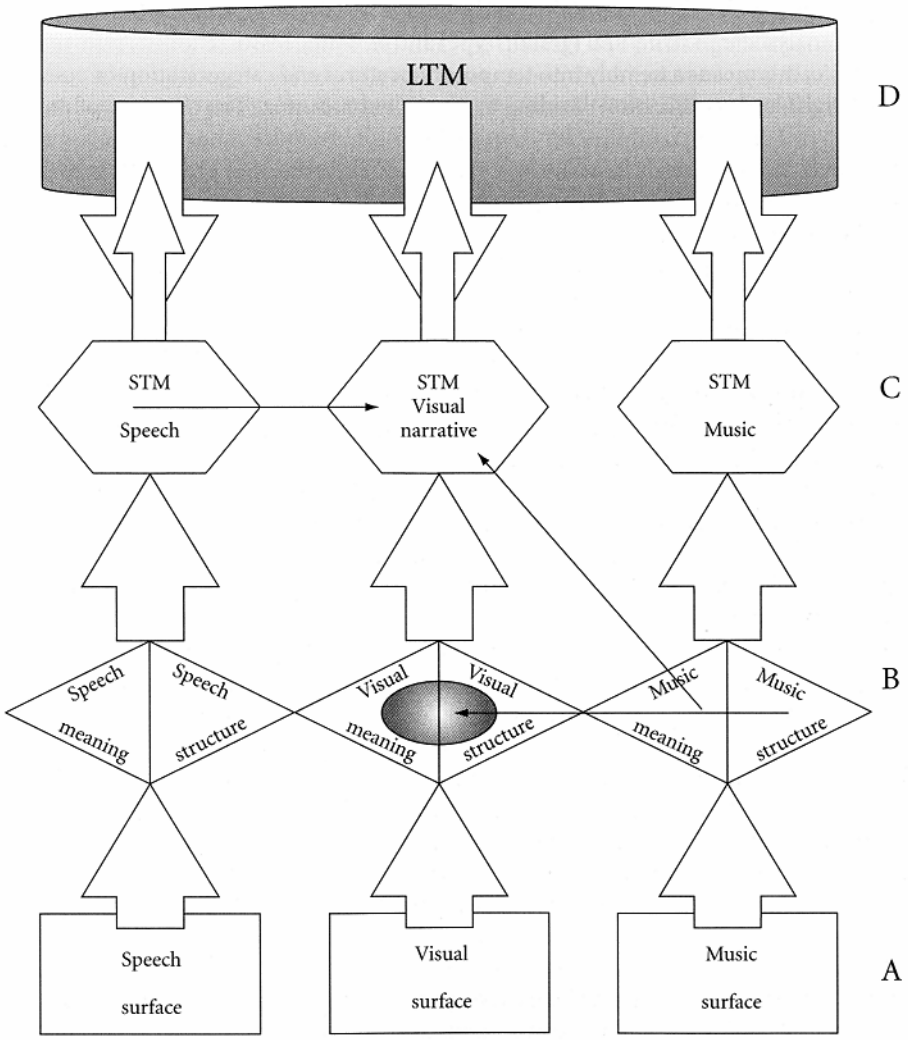

The Role of Music in Cinema: Theoretical Models

Richard Wagner, creator of the idealized *Gesamtkunstwerk* (total art work) in the form of the 19th century music drama, claimed that "as pure organ of the feeling, [music] speaks out the very thing which word speech in itself can not speak out … that which, looked at from the standpoint of our human intellect, is *the unspeakable*" (Wagner 1849/1964, p. 217). According to Suzanne K. Langer, "music has all the earmarks of a true symbolism, except one: the existence of an *assigned connotation*" and, though music is clearly a symbolic form, it remains an "unconsummated symbol" (1942, p. 240). Royal Brown (1988) suggests that this "unconsummatedness" accounts for the predominance of the orchestral film score. Excluding the highly effective marketing strategy of using commercially viable hit singles in an attempt to both increase box office receipts and bring in additional revenue in the form of soundtrack sales, he claims that there is an "almost total lack" of the voice in the classical score. Brown argues that "the very human presence felt through the performance of a vocalist tends to move the musical symbol one step closer toward consummation…. The fact that the audience *can* ask where a single human voice is coming from without questioning the presence of a large symphony orchestra on that same music track says a lot about the relationship between film and classical music" (p. 167). Therefore, in order for a film to make the greatest possible impact, there must be an interaction between the verbal dialogue (consummated symbol), the cinematic images (also a consummated symbol), and the musical score (unconsummated symbol).

To answer the question "How does music in film narration create a *point of experience* for the spectator?," Gorbman (1987) suggests three methods by which music can "signify" in the context of a narrative film. *Purely musical signification* results from the highly coded syntactical relationships inherent in the association of one musical tone with another. Patterns of tension

and release provide a sense of organization and meaning to the musical sound, apart from any extramusical association that might exist; Hanslick's (1891/1986) *absolute music*. *Cultural musical codes* are exemplified by music that has come to be associated with a certain mood or state of mind; Meyer's (1956) *referentialism*. These associations have been further canonized by the Hollywood film industry into certain conventional expectations – implicitly anticipated by enculturated audience members –determined by the narrative content of a given scene. Finally, *cinematic codes* influence musical meaning merely due to the placement of musical sound within the filmic context. Opening credit and end title music illustrate this type of signification, as well as recurring musical themes that come to represent characters or situations within the film.

As stated previously, there is a commonly held belief that film music is not to be heard (Burt 1994; Gorbman 1987). Instead, it is believed to fulfill its role in communicating the underlying psychological drama of the narrative at a subconscious level (Lipscomb 1989). There is, however, certain music that is intended to be heard by the audience as part of the cinematic diegesis, i.e., "the *narratively implied spatiotemporal world of the actions and characters*" (Gorbman 1987, p. 21). This "world" includes, of course, a sonic component. Therefore, all sounds – including music – that are understood to be heard by characters in the narrative are referred to as *diegetic*, while those that are not part of the diegesis (e.g., the orchestral score) are referred to as *nondiegetic*. This would suggest that diegetic music is more likely to be processed at the conscious level while nondiegetic music might remain at the subconscious level, though research is needed to determine whether this is true, in fact. It is worth noting also, that the source of diegetic sound can be either seen or unseen. Michel Chion (1990/1994) distinguishes these two types of diegetic forms using the terms "onscreen" and "offscreen," respectively (pp. 76-78).

Two extant models related to the role and function of film music are worthy of consideration. Gorbman (1987) compiled a list of principles for composition, mixing, and editing in the "classical" Hollywood film, emphasizing primarily the period between the late 1930s and 1940s and based on the scores of Max Steiner, composer of more than three hundred film scores (Thomas 1991), including *King Kong* (1933), *Casablanca* (1943), and *Gone With the Wind* (1947). The seven principles were considered by Gorbman as "a discursive field rather than a monolithic system with inviolable rules" (p. 73). Table 1 contains six of the seven principles quoted directly from Gorbman's text. To confirm her intention that none of these principles was to be considered sacrosanct, the seventh principle states that "a given film score may violate any of the principles above, providing the violation is at the service of the other principles" (Gorbman 1987, p. 73). Though the present authors would question the subordination of the musical component to image and dialogue, as stated in the "inaudibility" principle, many aspects of this model will be incorporated into our own list of film music functions.

The second model is one proposed by Nicholas Cook (1998), conceived for the express purpose of analyzing musical multimedia. Like the present authors, Cook takes issue with the oft-stated "fact" that music plays a subsidiary role to the image; what he refers to as "the deceptive translucency of music" (p. 21). Not content to settle for Gorbman's classification of the music-image and music-narrative relationship as "mutual implication" (Gorbman 1987, p. 15), Cook suggests considering the various roles played by these components in terms of denotation and connotation. He explains that "words and pictures deal primarily with the specific, with the objective, while music deals primarily with responses—that is, with values, emotions, and attitudes…. the connotative qualities of the music complement the denotative

qualities of the words and pictures" (p. 22). Cook sets forth three basic ways in which different media can relate one to another: *conformance*, *complementation*, and *contest*. Predicated upon the identification of similarities and differences between the component media, the model provides a two-step process for determining the existing relationship. The initial stage, identified as the "similarity test," involves the determination of whether component media are consistent with one another. To apply this test to a motion picture, one would ask "Is the same information being presented via both the auditory and visual modalities?" To use Cook's terminology, we are asking whether the music and image are *consistent* or merely *coherent*, i.e., providing a variant meaning or differential elaboration. Ultimately, if we can state that the relationship is invertible without changing the perceived meaning (i.e., it is equally valid to say that the music projects the meaning of the image or the image projects the meaning of the music), then the multimedia example has passed the similarity test and the relationship exhibited is one of *conformance*. In those instances where component media are determined to be coherent rather than consistent (i.e., failing the similarity test), one moves to the second step of the model: the "difference test." The answer to this query determines whether or not the inter-media relationship is one of contradiction in which the meanings of the component media are in opposition one to another, producing a collision or confrontation. If such contradiction exists, the relationship is one of *contest*. Otherwise, the relationship is one of *complementation* – neither consistency nor contradiction – in which the various media "are generally aligned with one another and share the same narrative structure, but each medium elaborates the underlying structure in a different way" (Cook 1998, p. 102). Cook's model has proven quite useful, both as an analytical tool and as a means of providing a consistent and coherent vocabulary for the discussion of dynamic inter-media relationships.

Table 1. Gorbman's list of principles for composition, mixing, and editing in the "classical" Hollywood film (1987, p. 259).

Principle	**Description**
Invisibility	The technical apparatus of nondiegetic music must not be visible.
"Inaudibility"	Music is not meant to be heard consciously. As such it should subordinate itself to dialogue, to visuals—i.e., to the primary vehicles of the narrative.
Signifier of emotion	Soundtrack music may set specific moods and emphasize particular emotions suggested in the narrative, but first and foremost, it is a signifier of emotion itself.
Narrative cueing	*referential/narrative*: music gives referential and narrative cues, e.g., indicating point of view, supplying formal demarcations, and establishing setting and characters. *connotative*: music "interprets" and "illustrates" narrative events
Continuity	Music provides formal and rhythmic continuity—between shots, in transitions between scenes, by filling "gaps"
Unity	Via repetition and variation of musical material and instrumentation, music aids in the construction of formal and narrative unity.

What Film Music Conveys

As confirmed by dozens of published theoretical treatises, the words of film music composers themselves, and the research cited previously, it is undeniable that a film score, in its typical role, serves to reinforce and/or augment the emotional content of a cinematic narrative. In the paragraphs below, we will propose an extended set of ways in which the soundtrack can

serve to communicate meaning through sound (including music), taking into account the director's – and, therefore, the composer's – intentions, the narrative content of the film, and the overall strategy of the director in constructing the multifaceted soundtrack. Throughout the remainder of this chapter we will use the term "director" as a metonymy for the complex collaboration and decision-making process involving composer, sound designer, screenwriter, editor, and director, but which is ultimately shaped and controlled by the director, to whom the responsibility for the final decision typically falls. The following list of methods by which a cinematic soundtrack can communicate from director to audience represents the various ways a soundtrack can elicit emotional response and/or convey the dramatic intentions of the film narrative. Once delineated, we will further clarify the enumerated possibilities by analyzing two well-known boxing movies, revealing specifically how choices made by directors, composers, and sound designers determine the meaning that the soundtrack – and, thus, the motion picture – will convey to the audience.

Music Can Convey the General Mood of a Film

Musical sound provides a cue for the listener concerning whether the narrative is supposed to be perceived as scary, romantic, funny, disturbing, familiar, comforting, other-worldly. In this capacity, the role of music is significantly enhanced by the *level of ambiguity* inherent in the visual scene. This characteristic was referred to as "abstraction" by Lipscomb and Kendall (1994, p. 80) and was used by Boltz (2001) as a criterion for visual stimulus selection. Specifically, the more ambiguous the meaning of the visual image, the more influence is exerted by the musical score in the process of interpreting the scene.

Music can convey the *scope* of a film, effectively communicating whether the motion picture is an epic drama (*Star Wars* 1977; *Gone With the Wind* 1947) or a story that exists on a

more personal scale (*Ghost World* 2001). Music can convey the *quality and size of a space*; what Gorbman refers to as "depth in space" or "physical volumes" (1987, p. 25). For example, in *Alien* (1979) and Olivier's *Hamlet* (1948) the music serves at times to make small and/or artificial spaces seem more grand and to enhance the sense of realism. In addition, music can establish a narrative's *placement in time.* Motion picture scores often serve to "authenticate the era" or to provide a sense of *nostalgia* (Stuessy and Lipscomb 2003, pp. 410-411). Examples of the former would include *Amadeus* (1984) and *Immortal Beloved* (1995), while a sense of nostalgia is communicated through the music selected for films such as *American Graffiti* (1973) and *The Big Chill* (1983).

Music can convey a sense of *energy*. In narrative theory and screenwriting, it is understood that stories are often driven by the manipulation of perceived energy. For example, a loaded gun pointed directly at a character has a lot of potential energy, while a post-coital couple has a low level of energy. Music and sound can reinforce or alter the perceived level of energy at a given point in a film and/or the overall perceived energy level of the film. For example, the level of perceived energy is significantly increased by the presence of Herrmann's musical score and the repetitive sound of the windshield wipers in the previously mentioned "rainstorm sequence" from *Psycho* (1960), and the tranquil image of a seascape is dramatically transformed from relaxing and peaceful to menacingly frightening with the appearance of John Williams' well-known musical motive in *Jaws* (1975). Alternatively, the level of perceived energy can be manipulated downward by the presence of music, as happens when Barber's "Adagio for Strings" appears on the soundtrack during battle scenes in *Platoon* (1986).

Music is also capable of *conveying the overall perspective or message intended* by the director, as related to both characters and on-screen events. The same events can be portrayed

differently – resulting in changed audience interpretation – by altering only the musical content (Bullerjahn and Güldenring 1994; Lipscomb and Kendall 1994; Marshall and Cohen 1988). Spaceships can be portrayed as elegant and beautiful (*2001: A Space Odyssey* 1968) or threatening machines of war (*Star Wars* 1977). Boxing can be portrayed as heroic (*Rocky* 1976), strategic (*When We Were Kings* 1997), or brutally tragic (*Raging Bull* 1980). Based on the use of different music and sound, the topic of war can be presented as brutal and chaotic (battle scenes in *Terminator 2: Judgment Day* 1991), tragic (the "Letters" scene in *Saving Private Ryan* 1999), transcendent (the use of Samuel Barber's "Adagio for Strings" in *Platoon* 1986), romantic and filled with adventure (*Casablanca* 1942; *African Queen* 1952), insane (*Apocalypse Now* 1979; *Barry Lyndon* 1975), heroic (*Schindler's List* 1993; *Glory* 1989), or even comic (*M*A*S*H* 1970). Borrowing from the field of linguistics, Gorbman applies the term "*commutation*" to describe the capability of music to influence the meaning of a film in this way (1987, p. 16). As an example of the dynamic manner in which cinematic meaning can be manipulated by sound, the musical score is often used to accompany montage sequences, conveying not only the passage of time but implying changes that have occurred – personal, interpersonal, or even global – during the intervening period (e.g., the well-known "breakfast montage" from *Citizen Kane*; see Gorbman 1987, p. 26)

Music Can Convey the Internal Life, Thoughts, and Feelings of a Character

One of the most effective ways in which a musical score can augment the narrative is to express the unspoken thoughts and unseen implications that underlie the drama; what Prendergast refers to as "psychological refinements" (1992, p. 216). Music can convey *character*. Rather than just associating a character with a particular musical theme, a director can choose to define a character by sound, musical or non-musical. Without the sound, the

character(s) would cease to exist or be less than fully realized (e.g., the mother character in *Psycho* or Hal in *2001: A Space Odyssey*).

The most consistently used technique to communicate musically through association is the *leitmotif*, used to great effect in Wagner's 19th century music dramas (including *Lohengrin*, 1850; *Tristan und Isolde*, 1857-59; *Der Ring des Nibelungen*, 1857-74). A leitmotif is …

> a theme, or other coherent musical idea, clearly defined so as to retain its identity if modified on subsequent appearances, whose purpose is to represent or symbolize a person, object, place, idea, state of mind, supernatural force or any other ingredient in a dramatic work." (Whittall 2003)

The history of film music is replete with examples of such recurring themes, one of the most familiar is the set of themes composed by John Williams for George Lucas' *Star Wars* series … both the original trilogy (*Star Wars* 1977; *The Empire Strikes Back* 1980; and *The Return of the Jedi* 1983) and the two prequels released to date (*Episode I: The Phantom Menace* 1999; and *Episode II: Attack of the Clones* 2002). The appearance of any of the character themes serves an identical purpose to that of the leitmotif in the Wagnerian music dramas.

Music Can Convey Narrative Structure

In addition to communicating general mood or character representation and development, a well-crafted musical score can clarify – or even establish – a sense of order by presenting a clearly perceived formal structure. According to Prendergast (1992), "music can provide the underpinning for the theatrical buildup of a scene and then round it off with a sense of finality" (p. 222). In films that incorporate extant compositions (*2001: A Space Odyssey* 1968; *32 Short Films About Glenn Gould* 1993), it is arguable that the visual scene is structured around the musical form, rather than vice versa. It is also possible that the shape of the music determines –

or assists in determining – the shape of the narrative. The appearance, disappearance, and reappearance of musical sound can *provide or clarify the narrative structure* of the film. There are instances in which the narrative structure and the formal structure of the music coalesce to create the resulting sense of order. The narrative in both *The Thin Blue Line* (1988) and *Magnolia* (2000) can both be perceived in a manner similar to the movements of a large-scale musical composition. In this way, music can be used to *emphasize beginnings or endings*. Likewise, a sense of structural *unity* is provided by the recurrence of musical themes.

Music can convey messages about where in the frame the audience should *focus attention*. Research has shown that music that is assigned a "negative" or "positive" connotation "significantly biased viewers' interpretation and subsequent remembering of a film in a mood-congruent fashion" (Boltz 2001, p. 427). Specifically, when music with an assigned connotation is combined with an ambiguous scene, memory of objects in the visual scene is influenced significantly by the music. In her discussion, Boltz states that

> overall results from the recognition memory task illustrate that *music does not simply convey different moods* that can bias the interpretative framework or visual imagery of an individual, even in the absence of an accompanying film. Instead, *music appears to exert a direct influence on the cognitive processing of a film* by guiding selective attending toward mood-consistent information and away from other information that is inconsistent with its affective valence. (p. 446; emphasis added)

In addition to mood congruent relations between audio and visual components, salient moments in the musical sound draw attention to salient events occurring concurrently within the visual image. This "*temporal coincidence*" (Gorbman 1987, p. 16) or "accent structure alignment"

(Lipscomb in press; Lipscomb and Kendall 1994) is an important *focusing device* at the disposal of a film music composer and can range on a continuum from Mickey-mousing (Alan Silverstri's score for the opening scene of *Who Framed Roger Rabbit*, 1983) to mid-range level synchronization (Bernard Herrmann's score for the "shower scene" in *Psycho* 1960) to the use of "stingers" to emphasize significant events (examples from Max Steiner's score for *Mildred Pierce* are cited in Gorbman, 1987, p. 88).

Music can readily convey *pace*. By establishing patterns in the use of music, sound effects, and silences and then manipulating these established patterns, a film can be made to feel subjectively like it is speeding up or slowing down. For example, in the "Dawn of Man" section at the beginning of *2001: A Space Odyssey*, each scene ends with a fade to silence. As the sequence continues, the silences between scenes are eliminated and the ambient shift between scenes becomes more extreme creating the impression of a quickening pace. Alternatively, music can *facilitate the continuity* of or *provide background filler* for the narrative; smoothing cuts between shots, scene transitions, and filling "gaps" to serve as modern day incidental music over scene changes (Gorbman 1987, p. 34). Within a cinematic context, the presence of film music serves to lower the audience member's "threshold of belief" (Gorbman 1987, p. 6). The fact that nondiegetic music is heard in places where it would not appear as part of the diegesis, allows the audience to more readily become lost in the drama.

Mismatch Conditions Between the Audio and Visual Components

All of the previous functions of music assume a certain level of coherence between the meaning of the visual image and the sound heard … music, as well as other auditory components. There are numerous instances in the cinematic repertoire in which an intentional mismatch or disconnect occurs between the information sent to each sensory modality (*contest*).

Music can convey *irony*. For example, a scene involving murder or graphic violence can be accompanied by upbeat music (e.g., "Singin' in the Rain" accompanies a violent rape scene in *A Clockwork Orange* 1972; "Somewhere Over the Rainbow" is heard during an intense shootout in *Face/Off* 1997). Such a mismatch can *invite intellectual processing* and active participation (Lipscomb and Kendall 1994). The audience member asks – consciously or unconsciously – what is the intended meaning? How do I resolve the conflict between the incompatible meanings I am receiving from the sound and image? If the music is familiar, the audience member may ask: How does this music I am used to hearing in one context relate to what am seeing now?

Another type of mismatch, results when we hear a *leitmotif* but do not see the associated character. The musical sound causes us to anticipate the arrival of the referenced character, to understand that a visible character is thinking about the referenced character, or realize that the referenced character is significant in relation to events occurring onscreen (Bordwell 1985, Chapter 3). It is also possible that the *absence of music* (or other sounds) may create a sense of mismatch. If based on the conventions of a genre or an established pattern set up within the specific film, there is an expectation for the presence of music in a specific scene, but no music is heard, the affected audience member asks: Why has the music been deleted? How does it change the perception of a character or the audience interpretation of the narrative? Emotionally, such realization tends to make the audience uneasy, desiring – perhaps unconsciously – some kind of cognitive resolution of the perceived dissonance. Silence in the cinema can be deafening … silence beyond any that can occur in real world experience. With the high quality of sound reproduction systems in most theaters – and now in many homes – and the greatly improved signal-to-noise ratio inherent in digital recording and media formats, theatrical silence can be near complete. Such "*nondiegetic silence*" (Gorbman 1987, p. 18), involving either the entire

soundtrack or excluding the sound associated with selected characters or objects, can be quite unsettling. An example of the former, *Y Tu Mamá También* (2001) incorporates complete silence prior to the narrator's dialogue, while the "Omaha Beach" scene in *Saving Private Ryan* (1999) exemplifies an obvious incongruity between action and sound, with the intentionally muffled accompanying soundtrack effectively communicating both the physical trauma and mental anguish of Tom Hanks' character.

Analyses: Film Music as an Integral Part of Cinematic Sound

Now that we have enumerated the various ways in which musical sound can communicate within a cinematic context, analysis of excerpts from two classic films will provide an opportunity to illustrate and make tangible the abstract categories discussed above. The following paragraphs will describe musical functions in two of the three boxing films, incorporating bracketed italicized text to identify references to specific musical techniques enumerated in the preceding pages. Similarly detailed analyses of the science fiction dramas and westerns have been performed but, due to length restrictions for the present chapter, will be published elsewhere (Lipscomb and Tolchinsky in preparation). The following paragraphs will provide a comparative presentation concerning the role of music in *Raging Bull* and *Rocky*. Timings referenced for these excerpts are taken from the DVD releases: *Raging Bull* (MGM 906040), *When We Were Kings* (Polygram 4400458472), and *Rocky* (MGM 1001736).

Raging Bull (1980)

In *Raging Bull*, music serves two primary roles. First, the use of contemporaneous popular music is practically omnipresent throughout the film, authenticating the era during which the events portrayed actually occurred [*placement in time*]. Second, and more unique to this example, music is used to structure the film at a macro level [*provide narrative structure*] and

communicate the intended meaning of the narrative [*convey the overall perspective or message intended*]. Only three times during the motion picture do we hear foregrounded nondiegetic instrumental music: with the opening credits, during a montage sequence in the middle of the film, and accompanying the end credits. In contrast to the music one might expect to accompany a movie about athletic competition, however, the instrumental music we hear is that of 19th century Italian operatic composer Pietro Mascagni, an example of Cook's (1998) "contest" relationship. The orchestral selections are excerpted from *Cavalleria rusticana* (1890), *Guglielmo Ratcliff* (1895), and *Silvano* (1895), operatic tragedies from the late Romantic period. It is no coincidence that Giovanni Verga's play, upon which the first of these was based, is credited with "inaugurating the *verismo* period in Italian theater" (Girardi 2003) and Mascagni's compostion is cited as the first operatic example (Sansone 2003). The verismo style presented human circumstances and emotions realistically, as typical in everyday experience rather than in the idealized form represented in previous theatrical eras. *Raging Bull* fits the mold of a verismo tale perfectly … a boxer whose life story becomes – through his own actions – nothing short of a full-scale tragedy.

The use of "Intermezzo" from *Cavalleria rusticana* underneath the opening credits and to accompany the image of Robert DeNiro as Jake La Motta warming up in the boxing ring sets the tone for the film [*convey the general mood*]. This scene provides an exemplary illustration of the use of *nondiegetic silence* in which Robert DeNiro, as Jake La Motta, shadowboxes in slow motion around a boxing ring, apparently in preparation for a match. There is no roar of the audience, no Foley sounds representing the boxer's footsteps or sweeping arm motions, only the tragic strains of the "Intermezzo." The music flawlessly foreshadows the events to come. The appearance of "Barcorolle" from *Silvano* underneath the end credits confirms the tragedy. Only

the middle appearance of "Intermezzo" from *Guglielmo Ratcliff* requires explanation. This music supports a montage of home movies, representing the passage of a significant amount of time during which La Motta is married, his brother gets married, children are born and raised, and La Motta's boxing career continues on an upward trajectory, as represented by intercut still images. As with both other appearances of nondiegetic music, there is no dialogue or sound effects … the music of Mascagni is the sole component of the soundtrack. The isolated music at this point in the narrative effectively serves the important structural function of letting the audience know that this is the culmination of the "happy" part of the film … and of La Motta's life [*emphasize beginnings and endings*]. The remainder will turn out to be La Motta tumbling downwards. The music underscores and reminds us of the tragedy that is about to occur [*reinforces the intended tone*]. It also acts as a respite from the violence and in-your-face sound effects that accompany the boxing sequences. The absence of sound effects, coupled with still images and grainy-looking "home movies" throughout this montage sequence point to the film as separate from reality, reminding the audience – if only temporarily – that they are observing voyeuristically, not participating in, the unfolding drama.

Rocky (1976)

The use of music in *Rocky*, when compared with the soundtrack for *Raging Bull*, is much more typical of the functions associated with a mainstream classical Hollywood film score. Throughout the movie, it serves to enhance or augment the emotional content of the narrative, primarily through either conformance or complementation (Cook 1998) [*convey the general mood* and *convey the intended message*]. The opening title sequence presents a brief brass fanfare preparing us for the eventual victory – in life, if not in the boxing ring – that the protagonist will experience [*foreshadowing* and *character development*]. This music is heroic

and reveals at the outset that Rocky will prevail, as the tragic music in La Motta's story foreshadows the boxer's ultimate failure. Though the boxing scenes themselves are bereft of musical scoring, examination of two non-boxing scenes will dramatically illustrate the use of music to underscore the actions of Rocky Balboa as he prepares for his shot at the title. The first (1:11:46), accompanies the "Morning Run" scene in which Rocky begins his workout routine; the second is from the chapter entitled "In Training" (1:30:32) and reveals the tremendous change that has occurred to the underdog as a result of his mental and physical conditioning. "Morning Run" begins with a solo French horn playing open fourths and fifths, a legato performance in a slow, relatively free tempo. As his jog progresses, strings enter and a piano assumes the lead melodic role, gradually taking over completely as he climbs, practically stumbling, up the 99 steps of the Philadelphia Museum of Art. This is hardly the kind of music that generates a sense of urgency, proclaiming the presence of a contender. Instead, the audience is led to wonder if Rocky is up to the challenge [*convey character*]. After a series of scenes documenting his training, we see (and hear) a new challenger … ready this time. This second jogging scene reveals, visually, a much more invigorated challenger with an energetic bounce in his step. The brass-dominated music, initiated by the same fanfare heard at the beginning of the film, supports this dramatic change in character. What appeared initially to be a pitiful attempt at working out has become second nature to the man … now a worthy contender. The rock beat, the densely voiced brass fanfare, and stable harmonies portray the man musically as ready for any challenge. The lyrics for the song ("feeling strong now") become superfluous … the instrumental music and imagery say it all.

Conclusions

Citing many empirical studies, this chapter has shown that recent research into the combination of sound and image is beginning to reveal to us unambiguous ways in which the auditory component of a motion picture adds depth and meaning to the cinematic experience. Several of these studies have gone so far as to propose specific models of film music perception (Cohen 2001; Lipscomb 1995; Lipscomb and Kendall 1994; Marshall and Cohen 1988). In addition, many scholars have developed unique theories regarding the various ways in which the coexistence of sound and image symbiotically produces affect in the audience member (Brown 1988; Cook 1998; Gorbman 1987; Wagner 1849/1964). Though few who have experienced a motion picture will deny the important role fulfilled by the musical soundtrack, this chapter attempted to identify many specific ways in which musical sound in this context can communicate information to the listener, enhancing the filmic experience. An analysis of two specific cinematic examples served to provide a practical application of this set of possibilities, identifying which specific techniques were utilized by the composer within the excerpts discussed. The dramatically different uses of music in these two films (*Raging Bull* and *Rocky*) demonstrate several of the many ways that music – as a primary component of the motion picture soundtrack – can serve and, at times, expand upon, the dramatic demands of the cinematic narrative.

Postlude

Though the title for this chapter includes the phrase "*music* communication," the present authors maintain that "music," in a cinematic context, may move beyond the boundaries of what is typically recognized as such. Within a film, the soundtrack contains not only the musical score, but ambient sound, dialogue, sound effects, and silence, any of which may be either

diegetic or nondiegetic. We would argue that the composite mix of these sounds becomes a complex communicative form that could be considered – in toto – "music" (i.e., ordered sound), existing "in harmony" with the visual image. As musical harmony can be consonant, dissonant, or anywhere on the continuum between these two extremes, so can the relationship between sound and image be consistent, contradictory, or anywhere on the continuum connecting these extremes (Cook 1998; Lipscomb and Kendall 1994). Expanding the definition of music is not an unprecedented step to take and, in fact, a similar leap has already been accomplished in the world of Western art music. For example, many works by John Cage (*4'33"* 1952; *Radio Music* 1956) and György Ligeti (*Poème symphonique* 1962) challenge willing listeners to reconsider the fundamental concept regarding what constitutes "musical sound," as the Dadaist movement of the early 20th century did for visual art. The present authors' analysis of *2001: A Space Odyssey* (Tolchinsky and Lipscomb in preparation) reveals that, when music is not present as part of the soundtrack, ambient sounds and (quasi-)dialogue can perform many of its typical functions. The roles of each component of the soundtrack became more blurred as the Hollywood film evolved toward the 21st century. Is it possible any longer to separately consider – in the context of the dramatic scenes of conflict in a given segment of the *Stars Wars* saga, for example – the function of John Williams' massive orchestral score, the sound effects, ambient sounds, etc.? The orchestral "hits" merge with the sound effects and alternately share the spotlight with dialogue and other salient auditory events … all supporting and augmenting the emotional impact of the visual image. If the *Star Wars* example alluded to above can be considered a representative example – and we believe it can – it may be time to consider expanding the definition of "film music." Rather than insisting upon its consideration as a separate and distinct entity, the present authors encourage analysis of the entire soundtrack, upon which musical sound, dialogue, sound

effects, silence, and some sounds that fall in the cracks between traditional categories all exist for the purpose of enhancing the intended message of the motion picture. One might ask whether music does have a unique function that rightly justifies its being set apart from these other auditory components. Currently, there appears to be an implicit assumption on the part of film theorists and film music researchers, that the musical score is a separate entity. There is certainly a benefit, especially within the context of experimental investigations, in limiting the world of empirical inquiry. We suggest, however, that as the field continues to mature, the constituent elements that comprise the soundtrack should be studied as a whole. Cognitive models of music communication, carefully formulated on the basis of results from past experimental research, can undoubtedly serve as a valuable starting point for such future investigations, though the design for these studies was intentionally more reductionist to gain the necessary experimental control. Now that a significant amount of this empirical work has been completed, investigators can begin to incorporate stimuli that more closely resemble sounds and images experienced in authentic cinema and to consider the various components of the soundtrack either in isolation or in their symbiotic relationship one to another.

Within the framework of a finished motion picture, roles of the various individuals involved in the music-sound communication process – like the sonic components themselves – become multifaceted and difficult, if not impossible, to disentangle one from another. It may, in fact, be absolutely essential to revise the basic components of Kendall and Carterette's (1990) model of music communication to include additional creative partners in the process, when considering the role of music within a cinematic context. The role of the *composer*, typically, is dramatically influenced by the wishes and expressed input of the *director* (altered model component: *composer-director*). The sonic component generated by the *performers* involved in

recording the score cannot be separated from the role of the *sound editor*, who is eventually responsible for the manner in which the sound and image are combined and the final audio-visual product (altered model component: *performer-sound editor*). Finally, the *listener* is transformed from a hearing-only individual into a *listener-viewer*.

Though the ideas expressed above may appear radical upon initial consideration, they provide yet another means of moving from the realm of reductionist methodology toward the real, ecologically valid world of the *Gesamtkunstwerk* – or *Gestalt* – that cinema has become.

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