

THE ROLE OF MUSIC COMMUNICATION IN CINEMA

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ABSTRACT

[*Authors' note:* This paper is an abbreviated version of a chapter included in a forthcoming book entitled *Music Communication* (D. Miell, R. MacDonald, & D. Hargreaves, Eds.), to be published by Oxford University Press.]

Past research leaves no doubt about the efficacy of music as a means of communication. In the following pages, after presenting a general model of music communication, the authors 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. We shall then enumerate the many ways in which the motion picture soundtrack can supplement, enhance, and expand upon the meaning of a film's narrative.

The relationship between the auditory and visual components in cinema is both active and dynamic, affording a multiplicity of possible relations than can evolve – sometimes dramatically – as the narrative unfolds. This paper will take a cognitive approach to the study of musical communication in cinema. As a result, much credence will be given to the results of empirical research investigating human cognitive processing in response to the motion picture experience.

In conclusion, the present authors will argue for a more inclusive definition of the term “film music” than that utilized or implied in previous publications. In our view, film music is one component of a sonic fabric 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, creating a harmonious counterpoint to the visual image.

1. A MODEL OF MUSIC COMMUNICATION

Many studies have investigated various aspects of musical communication as a form of expression (Bengtsson & Gabrielsson, 1983; Clarke, 1988; Clynes, 1983, Gabrielsson, 1988, Seashore, 1967/1938; Senju & Ohgushi, 1987; Sundberg, 1988; Sundberg *et al.*, 1983). A tripartite communication model was proposed by Campbell and Heller (1980), consisting simply of a composer, performer, and listener. Using this previous model as a foundation, Kendall and Carterette (1990) elegantly expanded upon this model of music communication, detailing a process involving multiple states of coding, decoding, and recoding. 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.

2. MODELS OF FILM MUSIC COMMUNICATION

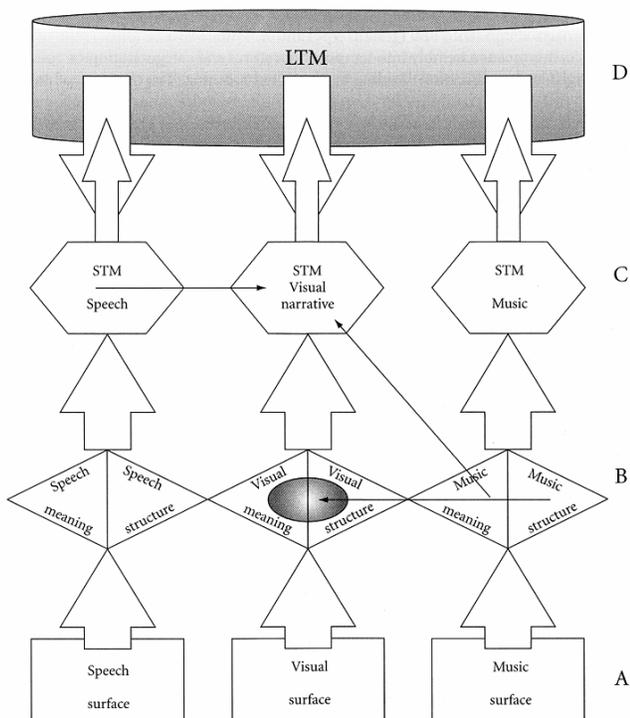
2.1 Empirical Evidence

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. 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. 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 & Cohen, 1988), accent structure alignment plays a dominant role. As the stimuli become more complex (e.g., multi-object 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 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 1). 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 definitively.

Figure 1. Cohen's "congruence-associationist framework.



2.2 Theoretical Evidence

Richard Wagner, creator of the idealized *Gesamtkunstwerk* 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). 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, typically, 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. *Cultural musical codes* are exemplified by music that has come to be associated with a certain mood or state of mind. 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.

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, naturally, a sonic component. Therefore, all sounds that are understood to be heard by characters in the narrative – including music – 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 particularly 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). These principles included *invisibility* (technical apparatus associated with nondiegetic music must not be seen) and *inaudibility* (film music is not meant to be consciously heard). Music is intended as a *signifier of emotion*. Music provides *referential and narrative cues*. Music provides *rhythmic and formal continuity*. And, finally, music aids in the *construction of formal and narrative unity*. 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).

The second theoretical 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 is 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.

3. 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, alter, and/or augment the emotional content of a cinematic narrative. In the following paragraphs, 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.¹ Our list will include a variety of possibilities for the manner in which film music may elicit emotional response and the many ways in which it can function to convey the dramatic intentions of the film narrative.

3.1 General Mood of a Film

Musical sound provides a cue for the listener concerning whether the narrative is intended 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. 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 high level of potential energy,

while a post-coital couple has a low level of energy. Music can reinforce energy at a given point in a film and/or the overall perceived energy level of the film. 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 & Guldénring, 1994; Lipscomb & Kendall, 1994; Marshall & 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 tragic (*Raging Bull*, 1960). 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).

3.2 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 the present (*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.

3.3 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 Herrman's score for the "shower scene" in *Psycho*, 1960) to the use of "stingers" as a means of emphasizing 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 within the temporal flow, a film can be made to feel subjectively like it is speeding up or slowing down. 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.

4. CONCLUSIONS

Citing many empirical studies, this paper has shown that recent research into the combination of sound and image is beginning to reveal 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 & Kendall, 1994; Marshall & 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.

Though the title for this paper 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 within the continuum between these two extremes, so can the relationship between sound and image be consistent, contradictory, or anywhere in between (Cook, 1998; Lipscomb & 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 their concept of 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 & 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 any 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 cited 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 constitute the soundtrack should be studied as a whole. Within the context of a finished film, roles of the various individuals involved in the music communication process 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. 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 method toward the ecologically valid world of the *Gesamtkunstwerk* – or *Gestalt* – that cinema has become.

5. REFERENCES

- Bengtsson, I. & Gabrielsson, A. (1983). Analysis and synthesis of musical rhythm. In *Studies of music performance* (ed. J. Sundberg), pp. 27-60. Royal Swedish Academy of Music, Stockholm.
- Bolivar, V.J., Cohen, A.J., and Fentress, J.C. (1994). Semantic and formal congruency in music and motion pictures: Effects on the interpretation of visual action. *Psychomusicology*, 13, 28-59.
- Boltz, M. (2001). Musical soundtracks as a schematic influence on the cognitive processing of filmed events. *Music Perception*, 18(4), 427-454.
- Brown, R. (1988). Film and classical music. In *Film and the arts in symbiosis: A resource guide* (ed. G.R. Edgerton), pp. 165-215. New York, Greenwood Press.
- Bullerjahn, C. and Gldenring, M. (1994). An empirical investigation of effects of film music using qualitative content analysis. *Psychomusicology*, 13, 99-118.
- Burt, G. (1994). *The art of film music*. Northeastern University Press, Boston, MA.
- Campbell W. & Heller, J. (1980). An orientation for considering models of musical behavior. In *Handbook of music psychology* (ed. D. Hodges), pp. 29-36. National Association for Music Therapy, Lawrence, KS.
- Chion, M. (1994). *Audio-vision: Sound on screen* (C. Gorbman, Trans.). Columbia University Press, New York. (Original work published in 1990)
- Clarke, E. (1988). Generative principles in music performance. In *Generative processes in music*, (ed. J.A. Sloboda), pp. 1-26. Clarendon Press, Oxford.
- Clynes, M. (1983). Expressive microstructure in music, linked to living qualities. In *Studies of music performance* (ed. J. Sundberg), pp. 76-181.: Royal Swedish Academy of Music, Stockholm.
- Cohen, A.J. (2001). Music as a source of emotion in film. Oxford University Press, New York.
- Cook, N. (1998). *Analysing musical multimedia*. Oxford University Press, New York.
- Driver, J. (1997). Enhancement of selective listening by illusory mislocation of speech sounds due to lip-reading. *Nature*, 381, 66-68.
- Gabrielsson, A. (1988). Timing in music performance and its relations to music experience. In *Generative processes in music* (ed. J.A. Sloboda), pp. 27-51. Clarendon Press, Oxford.
- Gorbman, C. (1987). *Unheard melodies: Narrative film music*. Indiana University Press, Bloomington, IN.
- Kendall, R.A., & Carterette, E.C. (1990). The communication of musical expression. *Music Perception* 8(2), 129-163.
- Langer, S.K. (1942). *Philosophy in a new key: A study of the symbolism of reason, rite, and art* (3rd ed.). Harvard University Press, Cambridge, MA.
- Lipscomb, S.D. (1989). Film music: A sociological investigation of influences on audience awareness. Paper presented at the Meeting of the Society of Ethnomusicology, Southern California Chapter, Los Angeles.
- Lipscomb, S.D. (1995). *Cognition of musical and visual accent structure alignment in film and animation*. Unpublished doctoral dissertation, University of California, Los Angeles.
- Lipscomb, S.D. (in press). The perception of audio-visual composites: Accent structure alignment of simple stimuli. *Selected Reports in Ethnomusicology*, 12.
- Lipscomb, S.D. and Kendall, R.A. (1994, Spring/Fall). Perceptual judgment of the relationship between musical and visual components in film. *Psychomusicology*, 13, 60-98.
- Marshall, S.K. and Cohen, A.J. (1988). Effects of musical soundtracks on attitudes toward animated geometric figures. *Music Perception*, 6(1), 95-112.
- Prendergast, R.M. (1992). *Film music: A neglected art*. W.W. Norton and Co, New York.
- Seashore, C.E. (1938). *Psychology of music*. McGraw-Hill, New York. (Reprinted, New York: Dover, 1967)
- Senju, M. & Ohgushi, K. (1987). How are the player's ideas conveyed to the audience? *Music Perception* 4, 311-323.
- Stuessy, J., and Lipscomb, S. (2003). *Rock and roll: Its history and stylistic development* (4th ed.). Prentice-Hall, Upper Saddle River, NJ.
- Sundberg, J. (1988). Computer synthesis of music performance. In *Generative processes in music* (ed. J.A. Sloboda), pp. 52-69. Clarendon Press, Oxford.
- Sundberg, J., Frydn, L., & Askenfelt, A. (1983). What tells you the player is musical? An analysis-by-synthesis study of music performance. In *Studies of music performance* (ed. J. Sundberg), pp. 61-67. Royal Swedish Academy of Music, Stockholm.
- Thomas, T. (1991). *Film score: The art & craft of movie music*. Riverwood Press, Burbank, CA.
- Thompson, W.F., Russo, F.A., and Sinclair, D. (1994). Effects of underscoring on the perception of closure in filmed events. *Psychomusicology*, 13, 9-27.
- Tolchinsky, D.E., and Lipscomb, S.D. (in preparation). 2001: A Space Odyssey – "Music" in the absence of a score. Pre-publication draft available from <<http://faculty-web.at.northwestern.edu/music/lipscomb/docs/2001Analysis.pdf>>

Wagner, R. (1964). Orchestra's power of speech; analogy with gesture. In *Wagner on music and drama: A compendium of Richard Wagner's prose works* (ed. A. Goldman and E. Sprinchorn; H.A. Ellis, trans.). Dutton, New York. (Original work [*The Artwork of the Future*] published in 1849)

Whittall, A. (2003). Leitmotif. In *The new Grove dictionary of music online* (ed. L. Macy). Grove's Dictionaries, New York. [Retrieved August 16, 2003 from <http://www.grovemusic.com>]

¹ Throughout 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 falls.