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Musicology Alone?

Nicholas Cook, *Analysing Musical Multimedia.* Oxford: Clarendon Press, 1998. 278 pp., ISBN 0-19-816589-7, $65.00 (cloth).

The autonomy of music or "music alone" has been the focus of much discussion (e.g., Kivy, 1990). Belief in the autonomy of music underlies traditional music analysis that examines the relations within the music rather than the social context or the effects of accompanying media on these relations. In *Analysing Musical Multimedia*, Nicholas Cook re-examines the notion of "music alone" and responds to the need he perceives to open up music analysis to multimedia contexts.

Just over 275 pages in length, the book is dense, drawing on material from musicology, film criticism, semiotics, linguistics, philosophy, aesthetics, psychology, cultural history, classics, and critical theory. Cook's chatty, though erudite, style carries the reader along fantastic voyages from ancient Greece across more recent French, German, and Russian cultural histories through to contemporary British and American musicology, and film criticism. These individually enjoyable excursions around the globe and across the centuries defy any simple geographical or chronological organization and sometimes challenge an attempt to follow Cook's primary arguments. Whether by design or by chance, this style is consistent with a theme of the book that rivaling forces contribute to the creation of meaning. Efforts to stay on Cook's roller coaster are well rewarded with an exciting and meaty read.

In this review, I will first establish the context for the book, then highlight the content and arguments of the consecutive chapters, and finally, discuss the book from the perspective of cognitive psychology.

Nicholas Cook is a Research Professor of Music, former Dean of Arts at the University of Southampton, and current editor of the *Journal of the Royal Musical Association,* among other editorial positions. Prolific in the field of musicology, he has authored or co-authored one book a year on average since 1987, with translations in eight languages. In spite of, or perhaps because of, his knowledge of the psychology of music and some first-hand experience of psychological research (Cook, 1987a), he separates the enterprises of psychology and music analysis, and he has previously warned against premature relations between the two (Cook, 1994). The current book has a strong musicological and nonpsychological intent. Neverthe-

less, I believe that the book will prove useful and stimulating for cognitive psychologists of music, as well as musicologists and media specialists.

In the preface, Cook notes that much has been written about traditional multimedia, like song and opera, but no general theory has been developed. Although more recent forms of multimedia have been submitted to analysis, typically the focus is not on the music. In *Analysing Musical Multimedia*, Cook sets out a "music-to-other-media approach: it seeks to extend the boundaries of music theory to encompass—or at least map the frontier with—words and moving images (and bodily gestures...)" (p. vi). The book has two parts. The first introduces the theory and the second its application.

There are three stated aims. The first is to reclaim for music analysis the new multimedia genres, like music videos or music films (a term that refers to the rare dramatizations or animations, such as Disney's *Fantasia*, which are inspired by music they accompany). The second aim is to reclaim for music analysis the "traditional multimedia genres like song and opera—to claim them, that is to say, for an approach that theorizes them as *multimedia*, and so helps the transference of insights from these particular generic fields to the understanding of musical multimedia as a whole" (p. vi). The final broader aim is "to contribute to the current reformulation of music theory in a manner that loosens the grip on it of the ideology of musical autonomy" (p. vi).

The introduction to Part I, "Music and Meaning in the Commercials," begins with analyses of several clever British television advertisements for automobiles, insurance, and snack food. Cook details the intent and structure of the separate music, video, and speech media, and their interactive and emergent effects on sensory and semantic levels. Here he makes his main point: the interaction between music and the other media causes new meaning to emerge. For example, in the advertisement for Citroen "the attributes of the music are transferred to the car; the liveliness and precision of Mozart's score ... become the liveliness and precision of the ZX 16v." (p. 6). The musical selection has "a *potential* for the construction or negotiation of meaning in specific contexts. It is a bundle of generic attributes in search of an object. Or it might be described as a structured semantic space, a privileged site for the negotiation of meaning" (p. 23). Thus, music always has meaning, but a precise meaning may only emerge in a specific context, so clearly seen in the commercial that must communicate meaning efficiently.

Chapter 1 is entitled "Synaesthesia and Similarity." Synesthesia entails cross-modal redundancy (the scale of E major may bring to mind the color yellow to one person, metallic blue to another and, of course, no color at all to the majority). It furnishes no new meaning in the sense that both audio and visual are perfectly correlated. But, according to Cook, multi-

media entails the emergence of new meaning from nonredundant sources; hence, Cook suggests that synesthesia has more to tell about "what multimedia is *not*" (p. 29). Nevertheless, the detailed analysis and critique of the rare exploitation of synesthetic concepts in Skriabin's symphony *Prometheus* and Schoenberg's opera *Die glückliche Hand* introduces the concept of similarity, which is important for the rest of the book. Cook points out that most people do not experience synesthesia but they have quasi-synesthesia, for example, the appreciation of the similarity of visual brightness and high pitch. Cook argues that quasi-synesthesia "forms one of the essential enabling mechanisms of multimedia" (p. 29), a point he takes up in the next chapter. After touching on the 19th century Symbolist movement that dwelt on "hidden correspondences between different sensory phenomena," Cook discusses and rejects Messiaen's synesthetically inspired compositional principle because it was based on imagination rather than on perception. Instead, Skriabin's perceivable musical-key color association is a good example of synesthesia, although because of its redundancy, it is a poor model for musical multimedia.[1] The chapter ends with Schoenberg, who is described as understanding that different media could carry different information. Because from Cook's viewpoint "Multimedia lies in the *perceived* interaction of media" (p. 33), Schoenberg paves the way to a proper conception of multimedia.

Chapter 2, "Multimedia as Metaphor," first focuses on the Russian film director Eisenstein and the German musicologist/composer Eisler, comparing the discrepancies between what each said and did with respect to music-film interactions.

> Both Eisenstein and Eisler, then, assert the principle of counterpoint, but fail to theorize it: they reject the principle of synaesthesia, but cannot escape its language...they are trying to use a language predicated on similarity in order to articulate a principle predicated on difference (p. 65).

In addition, and in contrast to film-music composers for narrative cinema of the last 50 years, Eisenstein and Eisler failed in "jumping the diegetic gap" (pp. 66–67). The term, "diegesis" refers to the "real world" of a narrative and, because characters in that world cannot hear the accompanying music (unless they are cast as musicians, or are watching a band parade, etc.), music belongs to the nondiegesis. Such music can mimic the rhythm of the motion on the screen, as Eisler did in his scoring for *Rain*,

1. Skriabin's color keyboard in theory would not add information that is not already contained in the music, though Cook notes that the color could clarify certain music-structural relations, like tonality, that would not otherwise be apparent to listeners who lacked absolute pitch. Minimizing the contribution of duplicated multisensory information to the emergence of new phenomena is a possible weakness in Cook's approach.

adding nothing to the diegesis, in Cook's view. However, music can add new information for the diegesis. For example, in Bernard Hermann's score for Hitchcock's *Psycho*, "Rather than corresponding to anything that is visible, the music jumps the diegetic gap, so to speak, 'seeking out' and uncovering the turmoil in Marion's mind, and thus transferring its own qualities to her" (p. 66). Cook says it is important now for theory to go beyond the descriptions of this phenomenon, already well documented in the film-music literature, and instead to "reduce this interaction to its essentials" (p. 67). To do this, he first directs attention to a study by Marshall and Cohen (1988) of the effects of film-music on the interpretation of a short animation and the actions of its three geometric characters. Based on evidence that different music produces different interpretations of the activity of the three "characters" in the film, Marshall and Cohen proposed a Congruence-Associationist model. In Cook's words, "if the respective attributes of the two media intersect ... then some or all of the remaining attributes of the one become available as attributes of the other" (p. 69). He then notes the similarity between this process and that of metaphor as described by psychologist L. Marks (1978), and proposes "metaphor may be seen as a viable model of cross-media interaction in general" (p. 70).

A precondition for metaphor is an "enabling similarity" of attributes common to two domains that provides the path for transfer of the different attributes from one domain to the other domain in the creation of new meaning. Consequently, "emergence is a defining attribute of multimedia" (p. 71). From here Cook applies the concept to the record album jacket (i.e., CD jewel box enclosure). He says "the very fact of juxtaposing image and music has the effect of drawing attention to the properties that they share, and in this way constructing a new experience of each; the interpretation is in this sense emergent" (p. 73). Having illustrated the approach for the static situation, he applies it to the more common dynamic case in which music accompanies motion. He notes that while enabling similarities are typically iconic, that is the music and the film simultaneously share the same sensory level characteristics (e.g., temporal, intensity), the enabling similarity can be at a semantic, noniconic level. For example, with reference to a specific automobile commercial, the music and car share iconic characteristics, that is, "the hi-tech sheen of the electronic music matches that of the car," and they share symbolic characteristics, "the association of woodwinds and family values" (p. 77). And these similarities that establish the intersection between the music and the pictures, enable "the advertiser's message to 'absorb' ... all the music's other attributes..." (pp. 77–78). Finally, "the emergence of signification in multimedia" depends on "a *limited* intersection of attributes, as opposed to either complete overlap or total divergence" (p. 82).

The relevance of the notion of emergence is supported by the fact, well known to directors, that knowledge of the separate sources (i.e., music and

visuals) cannot predict all the resulting phenomena. This is consistent with the basic principle of montage theory as explained by Eisenstein: "*two film pieces, of any kind, placed together, inevitably combine into a new concept, a new quality, arising out of that juxtaposition*" (p. 84). Eisenstein extended this also to "vertical montage," the combination of sound and picture. The discussion of metaphor theory positions Cook for his attack on the concept of "music alone": "Pure music it seems is an aesthetician's (and music theorist's) fiction: the real thing [music] unites itself promiscuously with any other media that are available" (p. 92, my addition of [music]).

The final chapter of Part I, "Models of Multimedia," presents three interrelated theoretical models of relations between media. Cook has "characterized multimedia as predicated on a distinctive combination of similarity and difference" (p. 98) and he feels that it logically follows that the three models relate to each other through what he calls the similarity and the difference test. Based on Lakoff and Johnson's (1980) discussion of consistent and coherent metaphors, Cook distinguishes two kinds of similarity: consistency and coherence. Two expressions A and B are coherent when each is a variant on the same concept C but each emphasizes different aspects of C's range of meaning. If, however, A and B express identical meaning, they are instead consistent. So, if the outcome of the similarity test reveals that music and video say exactly the same thing, expressed in separate modalities, A and B are consistent and if consistent, Cook chooses to refer to them as conformant.[2]

Conformance is presented as the first of Cook's three models of multimedia but "not so much as an overall model of multimedia, but as a model of the relationship of constituent media within an IMM" (Cook's abbreviation of "instance of multimedia," p. 102). Cook also distinguishes three subcategories of conformant relations on the basis of the emphasis placed on one or the other medium involved in the relation. Unitary conformance refers to dominance by one medium to which a second one conforms. Dyadic conformance refers to equal correspondence between one medium and another, and triadic conformance refers to the case when two domains express identical meaning to that in a third domain. Conformance, however, is typically absent in multimedia examples, according to Cook, and therefore the relation between the information in the two media is merely coherent.

To determine which of the two remaining models best describe the relation between two coherent (i.e., nonconformant) media, the difference test

2. Why Cook introduces a new and somewhat "stilted" (p. ix) word, *conformance,* instead of the original term, *consistency,* or even some other everyday word is explained early in the Preface. He prefers to use the "not run-of-the-mill terms" like conformance as "reserved words," and let the other words "remain available for informal, everyday use" (p. ix). But in my view, the same reasoning does not hold for the choice of the two remaining terms of his trio of models, *complementation* and *contest,* to be described shortly.

is performed, having two possible outcomes. On the one hand, the separate media can add independent, functionally nonredundant information to the overall work; Cook uses the term *complementation* for this second model. On the other hand, the separate media can be functionally redundant and in competition. This model is referred to as *contest.* A simplistic example of complementation is that the video provides denotative, dictionary-definition information and the music provides connotative, emotional information, and together they provide the total meaning of the multimedia work. Whereas complementation entails gap filling, contest involves collision. An example of *contest*, Cook claims, is that of a pun. Puns "articulate a collision between the different levels of signification, with the lexical similarity masking a semantic contradiction" (p. 103). For Cook, contest is the prototypical model of musical multimedia. "With its radical deconstruction of the component media and its generation of new meaning, contest covers its own traces, eradicates its own past; for this reason I see it as the paradigmatic model of multimedia" (p. 106). A multimedia example of contest is that of the insurance commercial in which associations generated by classical music conflict with the visually represented dreams of a young man whose career ambitions are that of a pop musician. The contesting classical and pop music associations intersect via the enabling similarity of the concept of music.

From what I understand, all multimedia examples are subject to the similarity test. Anything that is not conformant is still coherent. Cook says nothing about simultaneous media that have absolutely nothing in common. Presumably there should be a way of filtering them out from coherent events. Is it that the shared temporal dimension is sufficient to endow any two simultaneous media with coherence? Cook doesn't say, but allowing all multimedia examples the status of coherence seems to violate the original ideas of Lakoff and Johnson (1980), which limit coherence to events that express meaning within a single conceptual domain.

In the last sections of the chapter, Cook shows how his new terminology accommodates the terminology of past multimedia theorizing. He repeatedly criticizes "the impoverished language of traditional film criticism" (p. 115, see also p. 107) for categorizing the function of music in terms of either parallelism or counterpoint. Instead "we can do justice to multimedia only by means of a theory that is based on the concept of attribute transfer, and on the structural framework within which such transfer takes place" (p. 115).

This final development section of the chapter serves to support Cook's claim that the new models can apply to and illuminate traditional multimedia performance and their associated literature. According to Cook, unitary conformance, as exemplified by Plato's decree that musical rhythm and melody should conform to speech, resulted in the view of music as

"servant art" (p. 107) from classical Greek civilization to the present era. However, a change in emphasis from the literal (e.g., sensory aspects) to the semantic level of conformance has taken place over the centuries. Complementation fits into the current literature that divides the functions of text and music, for example, in terms of denotative and connotative functions, as described initially by Kerman (1956), or more generally that "each art makes explicit the dimension that the other leaves tacit" (p. 119), as expressed by Kramer (1984). Cook criticizes this narrow, essentialist view and offers the greater power of the contest model for representing multimedia interactions as they really are. To this argument he brings to bear Abbate's (1989) and Kramer's (1984) metaphors of war and conflict, used to describe relations between music and text. The stage is now set for the application of the theory to the less traditional multimedia genres, those that begin with music rather than add it in at a later stage.

In the introduction to Part II, entitled "Steps towards Analysis," Cook suggests approaches to the analysis of multimedia that will create insights beyond the "sedimented" and possibly incorrect initial conceptions of a work. In order to simplify the "plurality of relationships" (p. 135) between media, he suggests focusing on separate pairs at one time. He also finds it useful to practice inversion, that is, to consider the role of an apparently less dominant medium on the primary one. From the perspective of complementation, "reading for gaps" (p. 141) may heighten awareness of the roles of the separate media in contributing to the functional whole, for example, in establishing an implication in one medium and resolving it by the other. A final technique is distributional analysis, which entails creating an inventory of oppositions within the medium (e.g., tonal, atonal; technological, human) and subsequently seeing how these oppositions line up simultaneously across the media. This of course allows contest to become evident (i.e., by revealing the alignment of opposite concepts in music and text, or music and video). A general aspect of the analysis protocol is to determine how one medium effectively breaks up the hierarchies within another (e.g., alignment of visual cuts with music rhythm may draw attention to a low level of cinematic structure—the cut—that typically goes unnoticed in subordination to the grammar of the cinematic narrative, thus breaking up the traditional cinematic narrative hierarchy).

In contrast to the standard top-down approach in traditional music analysis, Cook is advocating a "resolutely bottom-up" procedure (p. 146). He warns, however, not to take his protocol too seriously. It is a way to get the analysis started. Two comparisons help to place this in perspective. First, we can compare the suggested "steps" with the suggestions made in his *Guide to Music Analysis* (Cook, 1987b). In that book, he stresses the importance of familiarity with the musical work, writing down initial impressions on first serious exposure to the piece, but not jumping into the full

analysis until one is able to imagine the sound of the notes from reading the score (p. 237). In *Analysing Musical Multimedia*, the issue of familiarity and when to jump in is overlooked. I compare this to a passage in M. Mark's (1997) *Music and the Silent Film*, where the extraordinary difficulty of analyzing film is described, as well as the need for special viewing machines "which facilitate repetitive viewing and frame-by-frame analysis" (p. 5). I am surprised that Cook says nothing of the complexity of the task ahead. Perhaps he feels that matter is irrelevant when only short works are considered, as here.

Chapter 4 focuses on pop artist Madonna's *Material Girl*. Following the protocol described in the previous chapter, Cook examines words and music, pictures and music, and then pictures, words, and performance. The lyrics and essential musical notation are provided in their entirety. The music is considered metrically, harmonically, through pitch-class tables, through a type of distributional analysis, and through a search for gaps. Returning empty-handed from the search for gaps, he makes it clear that the picture versus music hierarchies are poised more for contest than complementation. Cook claims that his analysis will reveal how contest serves to "destabilize" the meaning of the words and how the pictures "open the song up to the emergence of new meaning" (p. 159). The distributional analysis of the pictures and music is depicted in a graph. The horizontal axis of the graph represents time, and the vertical axis represents six gross classifications of the music (e.g., verse, refrain), two classifications of shots reflecting the two characters of the *Material Girl*, and the mean duration of each shot. The rhythms created by cutting from one shot to another are also shown and reveal that the cuts are aligned with, but do not duplicate, the rhythm of the song. This is typical of music videos, and the effect is that this visual aspect becomes a parameter of the music, not an invisible parameter of the narrative that has its own temporal structure unrelated to the cuts (p. 165). Because the cuts may be perceived and do not align with the visual narrative, their conformance to music disrupts the narrative hierarchy and justifies Cook's quip that "In the contest between the narrative and song hierarchies, then, the first round goes to the song" (p. 165). At this point, Cook grasps for other possible insights by examining the profile of the mean durations of the shots and, noting the obvious, observes that it "falls into a series of waves" (p. 166). He self-critically notes that the search for a golden section is often a "symptom of analytical desperation" (p. 166), but goes on to point out two curiously coincident golden sections within the piece. For me, the important thing is that examples of cross-media conformance (same meaning), complementation (combined message), and contest (competing messages) are illustrated as creating new meaning in *Material Girl* and show the viability of what I call Cook's "3 Cs" scheme.

Disney's animated visualization of Stravinsky's *Rite of Spring* in *Fantasia* is the subject of Chapter 5. Cook notes a symmetric narrative that be-

gins and ends with outer space, has an intermediary focus on "the earth in turmoil" and a middle section he calls the "pageant of life" featuring prehistoric water creatures and the extinction of the dinosaurs. Although some aspects of the music preserve the symmetry, the use of color themes conflicts with it. Cook delves into Stravinsky's variously stated views of exploitation of his music and on whether the ballet contradicted or conformed to the musical structure. The first part of the animation is analyzed microscopically, sometimes at an almost frame by frame, dinosaur by dinosaur, note by note resolution (though the basic unit of analysis used is the bar). Comparisons between the structures of the ballet and the animation provide interesting examples of coherence, whereby two visualizations, A (Nijinsky) and B (Disney), depict aspects of C, the music of the *Rite*. Cook regards the Stravinsky/Nijinsky and the Disney visualizations of the *Rite* as ideals of conformance, but, he says, "conformance can never be more than partial" (p. 209); so he also discusses the work in terms of contest.

Chapter 6 focuses on filmmaker Jean-Luc Godard's unusual dramatization of a portion of the 17th-century opera *Armide* by Lully. The production is part of the video entitled "Aria," which includes 10 opera visualizations by well-known directors. Cook places the present selection within the context of five centuries of almost 100 dramatic works, all inspired by the story of the sorceress Armide who intends to kill a captured knight but falls in love with him instead. Godard's retelling takes place in a fitness center; Armide's enemy is replaced by body builders, and the female role is taken by two women, sometimes nude, who wield alternately knives and dishtowels. The visual content might be regarded as unnecessarily sordid, but Cook's objectivity enables the reader to focus on the structural and semantic aspects of the video material. The essential notation of the two arias that take up more than 90% of the film is fully presented along with analytic sketches showing key change and chord progression. Cook notes parallels between the mood of the music and that of the narrative, but a microscopic analysis reveals other musical principles at work. What Cook is getting at is expressed by:

> Godard's primary strategy in deconstructing operatic or cinematic diegesis is to subordinate referential content to repetition, alternation, permutation, symmetry, and other purely relational structures. This is what we mean when we talk about 'musical' construction in films, and in 'Armide' it refers to two things: the direct co-ordination of picture structure and music ... and the use of commensurable principles of organization in different media. (p. 253)

For part of one of the arias, Godard has permuted seven different pictorial themes, some of which are presented during five successive shots. In Cook's words, "a linear narrative is chopped up and reconfigured on the basis of autonomous durational principles. One might say that a 'musical

logic' is being brought to bear upon the continuities and certainties of narrative representation" (p. 253). I am convinced that this type of analysis is an improvement over that of Yosefa Loshitsky (referred to by Cook on pp. 218–219, 250–254), who failed to consider any aspect of the soundtrack whatsoever. Still, it is not always clear which approaches from music theory are used by Cook in his attempt "in this chapter and in the book overall, to bring approaches derived from music theory to bear on the analysis of multimedia" (p. 249). Do his approaches go beyond the discussion of tonality and musical themes, or does he refer here to the cultural historical analysis? Are the permutational and temporal analyses derived from musicology or are they simply what anyone, musicologist or not, would be inclined to conclude on his or her own?

The final chapter entitled "The Lonely Music" begins abruptly with the question, "just what is a medium?" Some ways of considering the problem are rejected, in particular that of cognitive psychology, which would lead to "psychological reductionism" and its "unwelcome consequences" (p. 262). The answer then is given: the meaning of medium has to do with "a structural definition based on the idea of variance" (p. 263). Cook refers to "independent dimensions of variance," for example, in the way that elements of human motor behavior in dance may covary independently of the covariance of the elements within music. Having defined medium to his satisfaction as a dimension of variance, Cook realizes the need to distinguish a true medium from a mere parameter (i.e., music from its components of pitch, rhythm, harmony, etc.), which, like a medium, has "material trace, sensory mode, and cognitive process" (p. 264). To get out of this dilemma, Cook posits that the same principles operate within music as between music and other media. And this extends the application of the 3 Cs: "conformance, complementation, and contest should be useful in the analysis of 'pure' or absolute music" (p. 264). The fact that the same principles of analysis apply within and between media helps his argument that "music never *is* alone" (p. 265). At this point, the concept of multimedia seems to know no bounds. Musicology now is an example of multimedia (to which the 3 Cs should apply) for two reasons: first, it is text about music, and second, it involves notation that includes visual symbols and music. Words about music compensate (complement) or contradict (contest) it (p. 268), whereas notation is an example of conformance between the picture of the notes and the sound of the notes at some level. "[T]hen it follows that what applies to all multimedia applies to critical and analytical discourse about music: words do not transparently represent meanings that already exist in the music, but instead contribute to the emergence of meaning" (p. 270).

So, Cook has in fact presented a few tools with which to analyze the very book in which the tools are presented. Now we can ask, how do the rela-

tions of conformance, complementation, and contest between the words of the text and the notes of the music to which it refers contribute to the meaning of the two media together? Other examples of this approach to written music analysis will be developed in Cook's forthcoming book, *The Myth of the Musical Work: Towards a Musicology of Performance*. According to the book's prospectus (cf. http://www.soton.ac.uk/~ncook/MYTH.htm), he will use the 3 Cs to describe the interrelation between text (here I believe he means notation for the most part), performance, and the listener. It is probably better to pursue this line of discussion after we read that book. Instead, having now reviewed some of the highlights of each chapter, I will make some general comments, particularly from the perspective of the cognitive psychology of music.

In analyzing musical multimedia, Cook admits at the outset that he is also analyzing music analysis. He takes the "from music-to-other-media approach" only to come back to music more strongly. Indeed, he opens *Music: A Very Short Introduction* (Cook, 1998) with the same analysis of the insurance commercial that appears in *Analysing Musical Multimedia*. Throughout my reading of *Analysing Musical Multimedia*, I imagine in the background a rousing variation on an old Broadway show tune, "I enjoy being a musicologist," but wonder whether it doesn't mask a case of latent cognitive-psychology envy. My point is, if it doesn't, it should. How can Cook refute the ideology of "music alone" while holding strong to "musicology alone" (i.e., musicology without cognitive psychology, especially in the analysis of musical multimedia)? He stresses the need to go beyond the mere descriptions of the interactions between music and other media, but—consistent with his past and present concerns about the pitfalls of psychological reductionism—he leaves cognitive psychology to the cognitive psychologists. Take a concept like medium, which he wants to understand in terms of dimension of variance. Who other than cognitive psychologists has paved the way for dealing with the notions of dimension of information, correlation of information, integrality and separability of dimensions? In the classic paper "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information," George Miller (1956) pointed out: "'The amount of information' is exactly the same concept that we have talked about for years under the name of 'variance'" (p. 81). Wouldn't the analysis of multimedia stimuli benefit from over 40 years of cognitive psychology that followed Miller's (1956) paper with insights into the analysis of structure, gestalt properties, and auditory stream segregation, for example? I don't mean to be too critical. Cook has done extraordinarily well in incorporating specific examples of the sparse psychological literature on synesthesia and film-music perception. It is encouraging to see that ideas from experimental psychological research can be translated to general music multimedia analysis, especially by someone who has warned

about the difficulties of such translations. It is Cook's unwillingness to endorse the cognitive psychology experimental approach in general that is the problem.

Regardless, Cook is such a captivating writer that inadvertently he may have described general perceptual and cognitive phenomena in multimedia in a way that will grab the cognitive scientist's attention. If he has done this, the book will stimulate psychological experiments and the translation of the concepts of conformance, complementation, and contest into the vocabulary of cognitive psychology, a vocabulary that Cook hints at in his final chapter—the physical, sensory, and cognitive representations of a medium or its subdimensions. For cognitive psychological multimedia frameworks that might begin to accommodate Cook's concepts, see Lipscomb and Kendall (1994) and Cohen (1999a, 1999b).

Many of the ideas in the book should be testable experimentally. Here are five examples drawn from a few consecutive pages of the Fantasia analysis (pp. 179–182) regarding: (1) conscious attention ("the music tends towards primacy in the sections with relatively abstract visuals, whereas there tends to be a tension between music and narrative during the more representational visualisations"), (2) cross-modal figure-ground relations ("the melody-accompaniment relationship of the music corresponds to the figure-ground relationship of the visual, and so the one articulates or clarifies the other"), (3) effects of music on perceived synchrony ("explosions appear to take place in strict synchronization with the strings' sixteenth notes (though the effect of rhythmic precision disappears if you look at the film without the music)"), (4) the effects of synchrony on awareness of the music ("the music seems to intrude upon the pictures as a result of the constant synchronization between the two)," and (5) the effect of music on the perceived quality of activity ("the pizzicati in the lower strings bring out the balletic quality of the jogging dinosaurs"). While initial studies may validate Cook's observations, a necessary next step is extension to materials other than animation (e.g., Krumhansl & Schenck, 1997; Lipscomb, 1999).

We need the insightful analytic descriptions of musicologists as well as the research of cognitive psychologists and neuroscientists. Unfortunately, Cook here and earlier (e.g., Cook, 1990, 1994) has argued against this. When it comes to understanding music, he asks us to proceed from the overlap between music and other media. But when it comes to understanding musicology, he asks us to ignore the overlap between musicology and cognitive psychology. Why is the intersection, the enabling similarity, to be exploited in one case but not the other? To avoid cognitive psychological reductionism? But Cook's 3 Cs scheme is also reductionist. Even if musicological reductionism were better than psychological reductionism, wouldn't the best theory emerge from consideration of both disciplines? To put it bluntly, when was the last time you wore earplugs in a movie theater? A theory that is true to both musicology and cognitive psychology requires

full knowledge of two disciplines, not one. To create such a theory of musical multimedia analysis is an enormously difficult but important challenge and ideal. There is no need to rule it out as a worthwhile goal, as Cook has done.

For a book that is so multidisciplinary, a glossary would have been a nice addition for terms like semantic differential, golden section, serial music, Gesamtkunstwerk, cut, shot, diegesis, montage, and poesis, that may not be familiar to all readers. Of course, a glossary presents problems. The meanings of some basic terms like medium and multimedia are actually developed throughout the course of the book. The references are given as footnotes to each page in a format that unfortunately excludes the name of the publisher (however, this is standard format in the humanities). Apart from that minor gripe,[3] the editing and book production overall seemed impeccable.

So, if you have plans for a weekend of relaxation with some favorite videos, a new DVD, or a film, an opera, or musical theatre, postpone them. Instead, settle down with Cook's *Analysing Musical Multimedia*. To get the most out of the experience, consider having on hand a French, a German, and an English dictionary, a VCR, and Madonna's *Material Girl*, Disney's *Fantasia*, and Godard's *Armide*. It will be a stimulating multimedia event and, if Cook is correct, and I think he generally is, it will enhance your insight into music, musicology, and your future appreciation of any media experience. If you are a cognitive psychologist, keep a notebook handy and jot down the testable hypotheses.[4]

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3. More minor still is the one occasion of duplicated bibliographic information (pp. 109–110) and a double "that" that made no sense (p. 211).

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