

# Musical, Textual, and Visual Meanings in Bang on a Can's *Lost Objects*

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Contemporary compositions involving music and other media, whether they be staged performances (Philip Glass's *Einstein on the Beach*, John Adams's *Doctor Atomic* and Thomas Ades's *The Tempest*), video (Steve Reich's *Three Tales*, the Glass and Godfrey Reggio *Qatsi* films), or other non-musical domain, are richly complex not only in the interactions between the music and other domains, but also in the narrative that these works attempt to convey. Unraveling meaning in these works is challenging, in that they often intentionally defy singular interpretations. Take for instance the Glass/Reggio *Qatsi* films. *Qatsi* is a Hopi language word meaning "life," and, when combined with other words, creates compounds that describe ways of life. In a panel discussion about the trilogy, Reggio remarked on the title of the film *Koyaanisqatsi*,

"...the word means crazy life, life in turmoil, life in conflict, life out of balance, and in summing it up, a way of life that calls for another way of living. So these are heavily laden words that are for me extraordinarily descriptive of an event."<sup>1</sup>

Reggio goes on to describe the translation of the remaining titles in a similar fashion, never allowing a single idea to define the films. With Reggio and Glass working from a loose metaphorical framework, making interpretations of meaning in the films becomes a difficult endeavor. Equally challenging is Bang on Can's *Lost Objects*, which features unique staging, disparate musical ensembles, and a live DJ, all while emphasizing a theme of loss, both from personal and global per-

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<sup>1</sup>The panel discussion at NYU is a special feature on *Nagoyqatsi*, DVD, directed by Godfrey Reggio (Miramax, 2003).

spectives. The result is a complex look at how we deal with loss, both individually and as a society.

The following essay shows that much of the music of *Lost Objects* makes use of a pitch-class interval cycle used beneath discontinuous musical moments. This interval cycle ties melody and harmony to the central narrative. Though composed largely in diatonic space, the specific pitch-class motions are difficult to describe in tonal terms. The space in question, a multi-aggregate double-interval cycle, is traversed through adjacencies (motion around the cycle from one pitch class to the next), and through gaps (large leaps from one part of the cycle to another). After further defining several important characteristics in this unique pitch-class space, I will introduce an analytical model that connects the motions around and through this pitch-class cycle to the dramatic and visual domains of the multimedia work. The aim is to unravel some of the ambiguity inherent in such a composition.

In 2001, the composers of *Bang on a Can* composed the oratorio *Lost Objects*, which features an eclectic group of participants, including a Baroque ensemble (performed by the Köln Orchestra), the *Bang on a Can* Ensemble,<sup>2</sup> voices, and popular performing artist Paul Miller, also known as DJ Spooky. The *Talmud*, the book of traditional Jewish law, subtly guides the oratorio as a basis for understanding the nature of loss. Topics range from everyday lost items such as socks and umbrellas to extreme cases of lost people, including missing children and the disappearance of Amelia Earhart. It was not until 2004 at the Brooklyn Academy of Music that the work was recast as a staged oratorio under the direction of François Girard, director of *The Red Violin*. This article references this performance at the Brooklyn Academy of Music; however, the commercially available audio recording from 2001 can be used as a reference for the musical examples.<sup>3</sup>

Pitch-class cycles are often employed to help explain pitch and harmonic motions in twentieth- and twenty-first-century music that defy common-practice sensibilities. Work by Philip Lambert on the music of Charles Ives employs single-interval cycles to explore the composer's experimental works that do not feature quotation as a main

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<sup>2</sup>The core instrumentation for the ensemble includes bass, percussion, guitar, and clarinet. This instrumentation is often augmented with guest artists as needed; in the case of *Lost Objects*, there is no clarinet and a keyboard has been added.

<sup>3</sup>I am extremely grateful to executive director of *Bang on a Can*, Kenny Salvelson, and composer Julia Wolfe for their assistance in obtaining a video of the performance. The 2001 audio recording is available as *Bang on a Can, Lost Objects*, released May 15, 2001, Teldec 84107, compact disc.

compositional element.<sup>4</sup> José Martins tackles the discontinuities in Stravinsky's *Serenade in A* through use of Guidonian space, a triple-interval-cycle space with an interval pattern of a half-step followed by two whole-steps.<sup>5</sup> Seemingly unorthodox pitch motions can be made somewhat more clear when viewed as mutations of pitch-classes in this space. Edward Gollin also uses multi-aggregate interval cycles to better engage the music of Béla Bartók.<sup>6</sup> In much the same way as Martins, Gollin illustrates that pitch-class motion through a cycle can elucidate otherwise complicated surface melodic motion. Additional work by David Lewin and Keith Waters and J. Kent Williams employs similar multi-interval cycles as a means of better understanding diatonic and tertian harmony in a new context.<sup>7</sup>

In the present case, two movements from *Lost Objects* contain a specific multi-aggregate double-interval cycle. This interval cycle alternates between interval-classes (ic) 3 and 4, and as a result, fully completes the aggregate twice before repeating. The ic3,4 cycle is shown in Figure 1. The cycle itself has several interesting characteristics. Any 7 adjacent pitch-classes are equivalent to a diatonic set. As will be shown in the analysis that follows, diatonic sets are often used as referential spaces in the cycle and motion beyond them expands this space, often with meaningful implications. Additionally, the poles of the cycle are always tritones, so the POLE operation describes motion between tritones in music that otherwise adheres to the order of the cycle. Martins uses the mutation (MUT) operation to describe a motion between a pitch-class and its repeated partners elsewhere in the cycle.<sup>8</sup> The Guidonian cycle, like the ic3,4 cycle, is a multi-aggregate cycle. However, the Guidonian cycle repeats each pitch-class 3 times, therefore the cardinality of the

<sup>4</sup>Philip Lambert, "Interval Cycles as Compositional Resources in the Music of Charles Ives," *Music Theory Spectrum* 12, no. 1 (1990): 43–82.

<sup>5</sup>José Antonio Martins, "Stravinsky's Discontinuities, Harmonic Practice, and the Guidonian Space in the "Hymne" from the *Serenade in A*," *Theory and Practice* 31 (2006): 39–63.

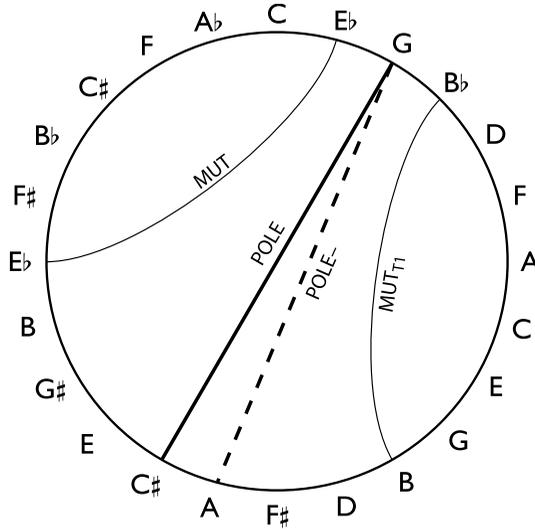
<sup>6</sup>Edward Gollin, "Multi-Aggregate Cycles and Multi-Aggregate Serial Techniques in the Music of Béla Bartók," *Music Theory Spectrum* 29, no. 2 (2007): 143–76.

<sup>7</sup>David Lewin, "Some Thoughts About Aspects of Harmony in Mahler's Symphonies," essay in *Music and the Aesthetics of Modernism*, ed. Karol Berger and Anthony Newcomb (Cambridge: Harvard University Press, 2005); and Keith J. Waters and J. Kent Williams, "Modeling Diatonic, Acoustic, Hexatonic, and Octatonic Harmonies and Progressions in Two- and Three-Dimensional Pitch Spaces; or Jazz Harmony after 1960," *Music Theory Online* 16, no. 3 (2010).

<sup>8</sup>Martins, 46.

operation is necessary to indicate which duplicate pitch-class is being invoked ( $MUT_1$  for the next closest pitch-class duplication,  $MUT_2$  for the pitch-class duplication after that). The ic3,4 cycle only doubles the aggregate, so only  $MUT$  is needed to describe the transfer from one pitch-class to its repeated partner. Adapting this methodology further, I also define transpositions of  $MUT$ , where  $MUT$  is altered by 1 or 2 semitones. These are indicated by  $MUT_{T1}$  and  $MUT_{T2}$  respectively, where the numeral indicates the number of semitones removed from  $MUT$ .  $POLE$  can be considered in a similar manner, where  $POLE$  is shifted to the left or right of the actual  $POLE$  by one position on the cycle. This is indicated by  $POLE+$  or  $POLE-$  (+ if the alteration is clockwise from  $POLE$  and - if the alteration is counterclockwise from  $POLE$ ).<sup>9</sup> Note that this alteration of  $POLE$  direction dependent; in Figure 1,  $POLE-$  results from pitch-class G moving to pitch-class A. The opposite motion, from pitch-class A to pitch-class G would create  $POLE+$ . Interestingly,  $POLE+$  and  $POLE-$  will create either ic2 or ic3, depending on where in the cycle the operations are used. Therefore,  $POLE+$  and  $POLE-$  have the potential to create two adjacent ic3's in this otherwise alternating ic3,4 cycle.

FIGURE 1. ic3,4 cycle with  $POLE$ ,  $POLE-$ ,  $MUT$ , and  $MUT_{T1}$ .



<sup>9</sup>I intentionally limit this offset of  $POLE$  to a single position to the left or right of a real  $POLE$ . Notice in Figure 1 that an offset of the  $POLE$  by two positions to the right or left (from the G or C♯) would result in a motion better described as  $MUT_{T1}$ .

EXAMPLE 1. Initial formation of the upper voice referential space along the ic3,4 cycle in "Acoustic Aphasia."

Violin 1  
Violin 2  
Violin 3

1 2 3

EXAMPLE 2. The upper voice referential space expanded down to  $A\flat$  when the lower voices drop to  $A\flat$  in “Acoustic Aphasia.”

The image shows a musical score for five instruments: Violin 1, Violin 2, Violin 3, Viola, and Cello/Bass. The score is written in 4/4 time and covers measures 10, 11, and 12. The key signature has one flat (B-flat). The instruments are arranged vertically from top to bottom: Violin 1, Violin 2, Violin 3, Viola, and Cello/Bass. The notation includes stems, beams, and notes, with some notes marked with a flat symbol (b). The score is divided into three systems, with measure numbers 10, 11, and 12 indicated at the beginning of each system.

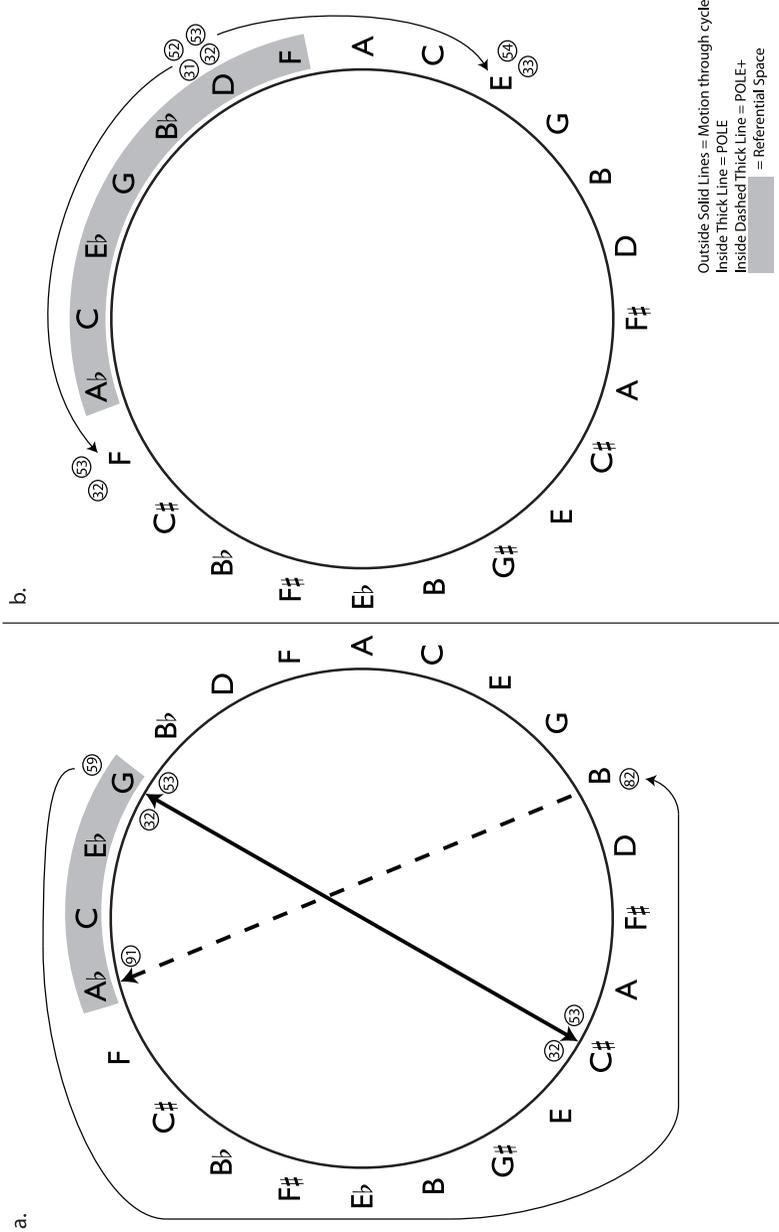
EXAMPLE 3. The upper voice referential space (a C-minor collection) is fully established in “Acoustic Aphasia.”

The musical score for Example 3 consists of five staves. The top staff is for the Voices, with lyrics "I hear the sound" under measures 19 and 20, and "com -" under measure 20. The vocal line features a long note in measure 19 and a half note in measure 20. The four instrumental staves (Violin 1, Violin 2, Violin 3, and Cello/Bass) play arpeggiated triads in a 4/4 time signature. The strings repeat arpeggiations of various triads as determined by the alternating major and minor thirds descending through the cycle.

“Acoustic Aphasia,” the third movement of *Lost Objects*, presents a largely uncomplicated use of the cycle, with most of its surface pitch-class motion appearing as adjacencies along the cycle. In fact, MUT is not needed to explain any pitch-class motion in this movement. It does, however, provide a relatively simple example of the ic3,4 cycle at work. Example 1 is a brief excerpt from the beginning of the movement. The strings repeat arpeggiations of various triads as determined by the alternating major and minor thirds descending through the cycle. The initial upper voice referential space of C-E $\flat$ -G-B $\flat$ -D is quickly expanded down to A $\flat$  when the basses, bass guitar, and keyboard enter in measure 8, playing an eighth-note ostinato first on pitch-class C, then A $\flat$  (see Example 2). It is when the lower voices descend to A $\flat$  that the upper voices are pulled down to A $\flat$  as well. The upper voices then fully realize their referential space for the movement (the C-minor diatonic space) when the vocalists enter in measure 19 (see Example 3). The lower voices continue to add pitch-classes as well, ultimately defining the A $\flat$ -C-E $\flat$ -G tetrachord, a subset of the C-minor space, as its referential space. Most of the pitch-class motion in the movement is confined to these referential spaces.

There are, however, three significant motions away from the referential spaces. The first occurs in measure 32, where the upper voices invert the direction of their arpeggiated figure and ascend to pitch-class E. Meanwhile, in the same measure, the lower voices drop a tritone to pitch-class C $\sharp$  (see example 4). Figure 2 maps these moments onto the ic3,4 cycle. For the sake of clarity, the lower and upper voices are mapped separately as Figure 2a and 2b respectively. In both cycles, the shaded areas indicate the referential spaces of the A $\flat$ -C-E $\flat$ -G tetrachord and the C-minor collection. Motion outside these spaces is indicated by the

FIGURE 2. ic3,4 cycle with pitch-class mappings from “Acoustic Aphasia.” (a) maps the lower voices and (b) maps the upper voices.



lines inside and outside the cycle, the latter indicating motion through adjacencies. Circled numbers are measure numbers that aid in tracking the voice motions through both cycles. As seen in Figure 2a the tritone drop in the lower voices is indicated with the POLE operation between pitch-classes G and C#. Figure 2b shows the upper voice motion ascent to pitch-class F at the same time. Both of these ventures away from the referential spaces are repeated in measure 53. The second move away from the referential space occurs in the lower voices only, beginning in measure 59. The lower voices descend through adjacent pitch-classes, eventually landing on pitch-class B before dropping out of the texture entirely. This is shown in Figure 2a by the long counter-clockwise arrow from pitch-class G to B. When the lower voices reappear in measure 91, they sound pitch-class A $\flat$  as a quarter-note ostinato until the end. While A $\flat$  was part of the original lower-voice tetrachord, the direct motion from B to A $\flat$  is POLE-, creating two consecutive ic3's. While the appearance of this A $\flat$  breaks the cycle's ic3, ic4 alternation, it is actually the upper voice motion (or more appropriately lack of motion) at this moment that is of interest. Recall that when the lower voices had previously descended to pitch-class A $\flat$  earlier in the movement, the upper voices conceded and fell down to A $\flat$  as well (see example 2). The upper voices in measure 91, however, doggedly maintain the same descending thirds figure seen in Example 1, refusing to continue down to pitch-class A $\flat$ .

Also of note here are the vocal parts. This movement features a small ensemble of female voices that occupy the upper voice C-minor referential space. However, the counter-clockwise arrow from pitch-class D to pitch-class F in Figure 2b reveals that the voices also briefly escape the referential space. Example 4 shows this descending vocal line followed by the upper and lower voice motions away from their referential spaces discussed earlier. While pitch-class F, the goal of this descending line, is a member of the upper voice referential space, this specific F, which is the MUT of the collection's pitch-class F, is not the same, as it is achieved through a different path on the cycle. While this difference is mostly trivial in this movement, MUT becomes a much more important operation in the next movement to be discussed.

The ic3,4 cycle in the eighth movement "Fw:Fw: Please Look" remains as salient to the listener as it did in "Acoustic Aphasia," but is complicated by several MUT, MUT transposition, and POLE operations. Also like the previous movement, the cycle is used in different, yet complementary ways between lower and upper voices. That is, however, where the similarities end. While the upper and lower voices

EXAMPLE 4. Vocal descent, landing on the MUT of the upper voice referential space pitch-class F in “Acoustic Aphasia.”

The musical score is presented in a system with five staves. The top staff is labeled "Voices" and contains the vocal line with lyrics: "31 Can you re - peat af - ter me 32 33 34". The lyrics are positioned below the notes. The vocal line shows a descending melodic phrase starting on a G4 note at measure 31, moving down through F4, E4, D4, C4, and B3, ending on an F3 note at measure 34. The other four staves are labeled "Violin 1", "Violin 2", "Violin 3", and "Cello/Bass". Each of these instrumental staves contains a complex, rhythmic accompaniment consisting of sixteenth-note patterns. The key signature has one flat (Bb) and the time signature is 4/4. The system is divided into measures 31, 32, 33, and 34 by vertical bar lines.

in “Acoustic Aphasia” generally stayed in the same area of the cycle, the respective parts in this movement are consistently on opposite sides of the cycle. Figure 3, like Figure 2, maps the lower and upper voice motions during the movement. Lines outside the cycle still indicate adjacencies on the cycle, but lines inside the cycle indicate MUT or MUT transposition operations. The thick line in the upper voice cycle (3b) indicates POLE. While the voice motions, and therefore the mapping of the motions on the cycle, are much more complex in this movement, there are several instances where the seemingly bizarre surface of the music is made clearer by comparing the two cycles.

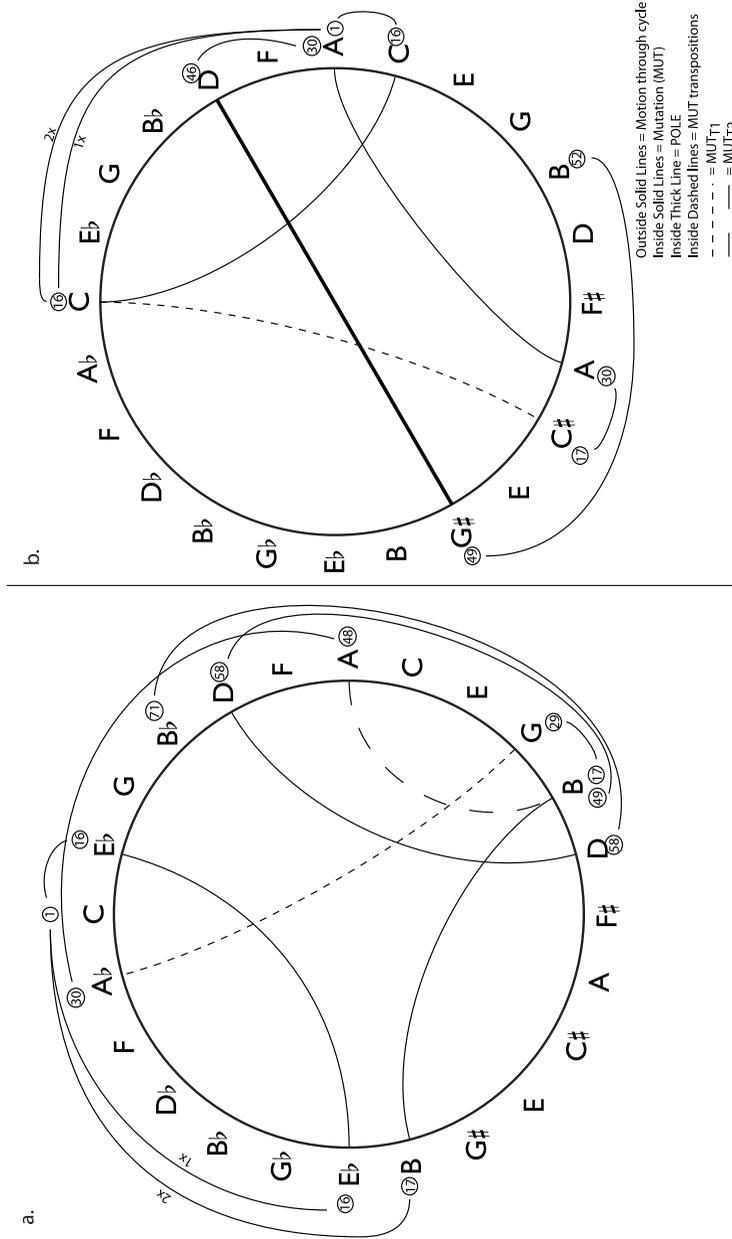
The movement begins with both upper and lower voices sharing pitch-class C; the lower voices start there and proceed C-A $\flat$ -F-D $\flat$ -B $\flat$ -G $\flat$ -E $\flat$ , while the upper voices begin on pitch-class A and move A-F-D-B $\flat$ -G-E $\flat$ -C, ending on the shared pitch-class C in measure 16. Essentially, the lower voices have claimed the B $\flat$ -minor diatonic region of the cycle while the upper voices established G-minor. In tonal terms, it is hard to reconcile the use of these two diatonic regions simultaneously, but considering the cycle and the shared pitch-class C provides some rationale. This section of music then repeats, indicated by the 1x and 2x lines.

The music then proceeds to make two different MUTs in measure 17. As shown in Example 5, the lower voices continue past pitch-class E $\flat$  onto B, but when looking ahead, it is clear that this pitch-class B is actually MUT B, given that the next pitch-class heard is G $\sharp$ . If the lower voices were continuing to sound adjacencies along the cycle, this pitch-class would have been G $\sharp$ . The upper voices move by MUT<sub>T1</sub>, resulting in pitch-class C $\sharp$  as opposed to C $\sharp$ . In both cases, the voices have traveled to opposite sides of the cycle, continuing to thwart the establishment of complementary referential spaces heard in “Acoustic Aphasia.”

As Figure 3 indicates, most of the jumps (MUT, MUT transposition, and POLE) occur either at the same time or within just a few measures between the voices, almost as if they are actively arguing as to the correct way to move forward. In fact, only for a brief moment, from measures 30 and 48, do the voices overlap in the same area of the cycle, but this reconciliation is quickly abandoned via POLE in the upper voices and MUT<sub>T2</sub> in the lower voices. Also of interest is the last pitch-class in each part, with the lower voices ending on pitch-class B $\flat$  and the upper voices on pitch-class B $\sharp$ .<sup>10</sup>

<sup>10</sup>While the B $\sharp$  in the upper voices is reached for the first time in measure 52, it is held and repeated while the lower voices move from pitch-classes D to B $\flat$ . Both voices end together in measure 71.

FIGURE 3. ic3,4 cycle with pitch-class mappings from “Fw:Fw: Please Look.” (a) maps the lower voices and (b) maps the upper voices.<sup>11</sup>



<sup>11</sup> Editor’s note: There are links to animations from “Fw:Fw: Please Look” on our website, <http://music.indiana.edu/ITR> (on the “Supplemental Material” page).

EXAMPLE 5. MUT and MUT<sub>T1</sub> at measure 17 of “Fw:Fw: Please Look.”

The image shows two staves of music. The top staff is for Soprano and the bottom for Bass. Measure 12 is marked with a circled 12. The lyrics for measure 12 are "Miss - ing child please look and for - ward - on". Measure 17 is marked with a circled 17. The lyrics for measure 17 are "I am ask - ing you beg - ging". An annotation "MUT" points to the beginning of measure 17. An annotation "MUT<sub>T1</sub>" points to the first measure of measure 17. There are also circled numbers 3 above the notes in measure 17, indicating triplets.

The ternary form of the movement also serves to emphasize the unsettled quality of the music. The thematic material introduced at the beginning returns in measure 49, but as Figure 3 indicates, neither the upper nor lower voices return to the diatonic collections that started the movement. In fact, they establish the collections of F# minor and A minor, a half-step below the original collections. So while the thematic material achieves a return, the movement is denied closure by not returning to the original pitch-class space on the cycle.

Combining these musical observations with the work's complex narrative and visual domains is difficult, yet several different models have attempted to provide a methodological framework with which to unite these disparate domains. Nicholas Cook proposes a model that utilizes aspects of metaphor and semiotics to determine to what degree the music and non-music domains agree.<sup>12</sup> This model is largely successful when comparing the same music in different visual and/or narrative contexts. In fact, much of the scholarly work using Cook's model analyzes the music used in television commercials, where the same music can have different meanings depending on the visual and narrative context. Therefore, Cook's model is not as useful when analyzing a single work whose domains are relatively fixed. Nowhere in *Lost Objects* does the same music occur with significantly different visual or narrative accompaniment.<sup>13</sup> In contrast, Lawrence Kramer describes multi-

<sup>12</sup>Nicholas Cook, *Analysing Musical Multimedia* (Oxford: Oxford University Press, 1998).

<sup>13</sup>The one exception to this might be the DJ remix movements, where DJ Spooky rises from the pit and performs a live remix of the music performed

media as the relationship between music and what he refers to as the *imagetext*.<sup>14</sup> He defines *imagetext* as any extra-musical component in a mixed-media environment, including a visual domain, a spoken or sung domain, or both. Avoiding the binary bias of metaphorical comparisons, which only allows for two objects to be compared at a time, Kramer's approach is instead derived from Lacanian philosophy, in which the comparative object can exist purely in the mind. For Lacan, language can never accurately describe reality in objective terms; the analyst's own subjective views, no matter how small, will always be present. Kramer echoes Lacan arguing that the analysis of meaning is always, to some extent, based on subjectivity, and the Lacanian model justifies his more subjective readings.

While these approaches differ in terms of methodology and subjective bias, neither is fully capable of addressing a highly ambiguous work such as *Lost Objects*. Instead, I propose a new model that, like Cook, also borrows from semiotics and metaphor, but couches them in a more useful way when engaging a single composition. The Model for Interpreting Musical Multimedia (MIMM) is a three-input-space conceptual integration network. The three input spaces allow for the musical, textual, and visual domains to each contribute to a possible interpretation of a given composition. The MIMM is a variant of the more typical two-input-space network introduced by Gilles Fauconnier and Mark Turner and applied to music by Lawrence Zbikowski<sup>15</sup>. A representation of the model is shown in Figure 4. Based on metaphor, these networks allow disparate objects to be compared within the parameters of a generic space that describes qualities found in each object. The MIMM lacks this generic space, but instead allows a single domain to temporarily act as a *focusing domain* (shown in bold and abbreviated FD) that establishes the parameters upon which the other domains will be compared. Shifting the focusing domain often results in a slightly

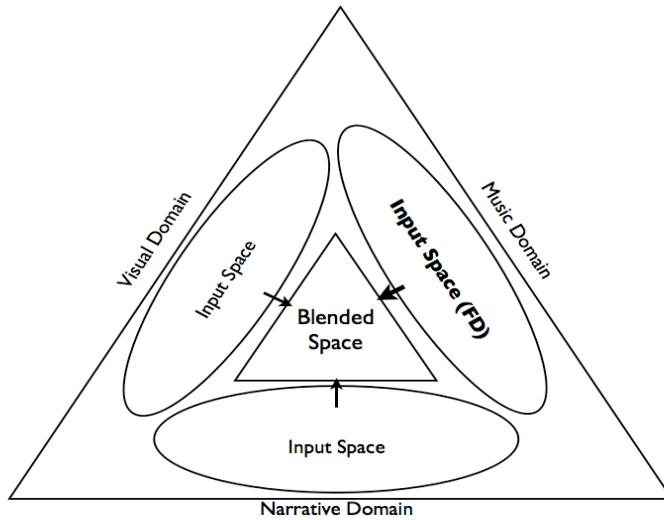
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in previous movements. While the samples he uses are technically repetitions of musical material in a different context, the remixes are an entirely different musical gesture, created by DJ Spooky and not the composers. Whatever meaning they may have held in previous movements does not necessarily accompany their appearance in these remixes.

<sup>14</sup>Lawrence Kramer, *Musical Meaning: Toward a Critical History* (Berkeley: University of California Press, 2002).

<sup>15</sup>Gilles Fauconnier and Mark Turner, "Conceptual Integration Networks," *Cognitive Science* 22 (1998): 133-87 and Lawrence Zbikowski, *Conceptualizing Music: Cognitive Structure, Theory, and Analysis* (Oxford: Oxford University Press, 2002).

FIGURE 4. Model for Interpreting Musical Multimedia.



different, yet equally valid interpretation. The surface level details of the work comprise the outside edges of the model, while the ovals inside the model depict a first-order, denotational meaning in each domain. As much as is possible, this first-order meaning is determined without consideration of the other domains. Indeed, it is only in the middle blended space that the domains participate in the tripartite cross-domain map to determine an interpretation.<sup>16</sup>

The staging of *Lost Objects* consists of a primarily vertical design, utilizing the space above the stage floor rather than the space from front to back. Each level of the three-tiered structure is home to a particular ensemble; the Baroque orchestra always occupies the middle level and the vocalists and Bang on a Can Ensemble move between the upper and lower levels as the piece progresses. DJ Spooky rises from the pit only during his remix movements, utilizing live samples of material from other parts of the work. Below the structure is a large collection of “lost” objects, ranging from suitcases to umbrellas, which remain on stage throughout. At various times during the production, opaque screens descend in front of the stage, blocking certain parts of the vertical structure from the audience’s view. In addition a translucent screen

<sup>16</sup>My dissertation further elaborates on the semiotic and metaphoric components of the model and provides several examples of the model in use. Sean Atkinson, “An Analytical Model for the Study of Multimedia Compositions: A Case Study in Minimalist Music” (Ph.D. diss., Florida State University, 2009).

FIGURE 5. Three-tiered structure with text overlay on translucent screen, *Lost Objects*.



remains in front of the stage at all times, allowing text and images to be displayed on it while not obscuring the musicians behind. Figure 5 is a still frame from the production that shows the three-tiered structure as well as the text overlay.

As suggested by the title, the text of “Fw:Fw: Please Look” appears to be taken from a forwarded email message, alerting people to a missing child.

Missing Child,  
Please look, then forward on...

I am asking you, begging  
Please forward this email to everyone.  
I have a daughter named Chelsea.  
She has been missing since 4 PM.  
If you know anything,  
If you see anything,  
If you hear anything, please.

Missing Child,  
Please look, then forward on...

All prayers are appreciated.<sup>17</sup>

<sup>17</sup>The libretto of *Lost Objects* was written by Deborah Artman.

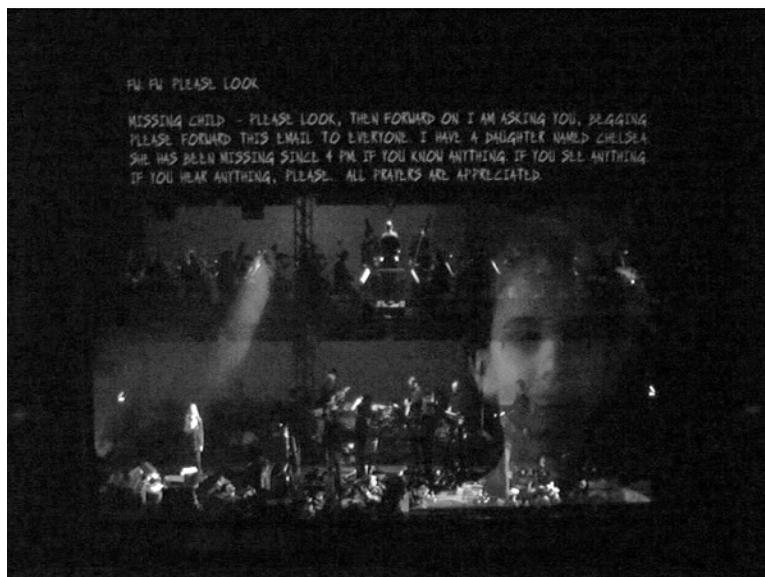
The main subject is of course the missing child, and the author of the email pleads for people to help find the child. Repeated words such as “please,” along with “asking” and “begging,” create a strong sense of desperation. Also of note here is the method of communication itself, a forwarded email message. As frequent users of email know (especially in 2001 when the movement was written) these types of emails tend not to be regarded with much urgency. There is no way of knowing how many times it has been forwarded, or if the recipient even knows the child in question, not to mention the likelihood that the message could be a hoax, or worse, a scam. Indeed, there is a degree of skepticism involved with the method of communication itself; perhaps a comment on the loss of trust caused by the internet.<sup>18</sup>

The visual domain during this movement is quite rich. A solo vocalist is positioned stage left on the stage floor. The Bang on a Can Ensemble and the other vocalists are also on the stage floor, each vocalist equipped with a flashlight. The movement begins with a darkened stage, and only the soloist illuminated. Meanwhile, the other vocalists search throughout the cluttered stage floor for something, presumably the missing child. Soon after the beginning, the soloist turns her attention toward the other vocalists, telling them the story of the missing child. It is at this point that a large projection of a child is displayed on the translucent screen stage right. The vocalists all point their flashlights towards it and begin moving in that direction. Once directly behind the projection of the child, the vocalists line up and shine their lights on their own faces from below. At the same moment the soloist turns her attention back towards the audience. The movement ends as the soloist sings “All prayers are appreciated,” while the lights and the projection of the child slowly fade to black. A still frame from the movement is shown in Figure 6.

The projected image of the child appears to be in distress, and while there are no accompanying child-sounds, the face of the child looks as if she is scared and crying. Oddly, the child does not become distressed until just before the vocalists’ flashlights find her. This suggests that even though they appear to find the child, she is not noticed. The vocalists are instead blinded by the very tools they use to search. The child’s distressful state remains intact from this point until the end of the movement.

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<sup>18</sup>Of course, the role of forwarded emails today has largely been assumed by social media outlets such as Facebook and Twitter. Appropriately, though unintentional by the librettist or the composers, this plays right into the larger narrative of lost things; in this case, the notion of a lost use of technology.

FIGURE 6. Still frame from “Fw:Fw: Please Look,” *Lost Objects*.

The main subject is the missing child, indicated not only by the text, but also by the staged searching. The visual domain highlights the fact that the child becomes visibly upset when the flashlights locate her on stage, presumably because they manage to overlook her. The musical domain, with its ternary formal structure, in the end returns to previous material, yet is heard in the wrong key and never achieves closure. By their very nature, forwarded emails also have no closure, having been continuously forwarded to more and more people, likely ending up in the inbox of someone with no direct relationship to the original author. This lack of formal closure in two of the domains results in a tragic reading of the movement. Using the music as the focusing domain, the model shapes an interpretation that despite the desperation and pleading in the email, the child is likely to remain missing indefinitely. Figure 7 illustrates this interpretation in the MIMM.

Obviously, this is but one interpretation of many when dealing with such an ambiguous and multi-faceted work. However, the MIMM allows for more than one interpretation to emerge. Figure 8 illustrates the results of shifting the focusing domain to the text. This places the comparative emphasis on the forwarded email, and posits an interpretation with more far-reaching consequences. The nature of email forwards is somewhat endless (countless numbers are sent every day); this could be read as an escalation of the topic from one missing child to missing children everywhere.

FIGURE 7. An interpretation of “Fw:Fw: Please Look” with the music acting as the focusing domain.

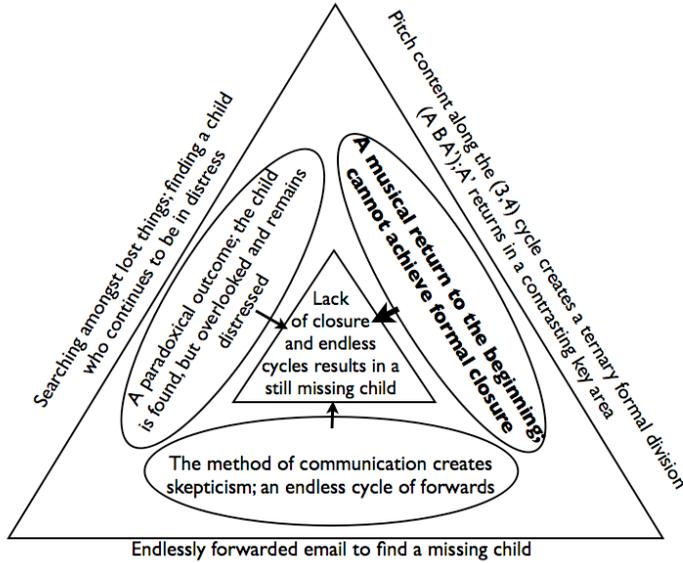
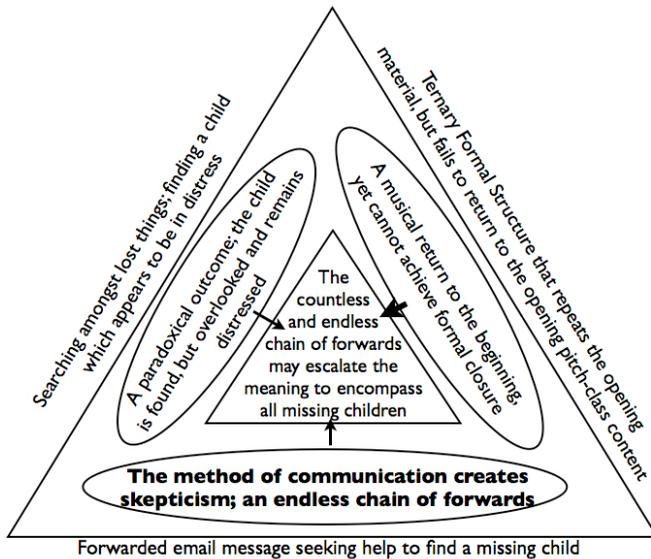


FIGURE 8. An interpretation of “Fw:Fw: Please Look” with the text acting as the focusing domain.



Let us now return to the discussion of “Acoustic Aphasia.” The title alludes to the medical condition of aphasia, which is a disorder that affects a person’s ability to comprehend or produce speech. Typically caused by a heart attack or stroke, the type and severity of each case can differ greatly from person to person. Combined with the word “acoustic,” the listener is left to assume that some kind of aural misunderstanding is the main subject of the movement.

The text of “Acoustic Aphasia” issues a direct question, and in doing so, creates a dramatic possibility for the movement.

I hear the sound coming from your mouth  
 but I do not understand the words  
 Can you repeat after me?  
 ABCDEFG<sup>19</sup>

“Can you repeat after me?” is not a rhetorical question, but a question that demands a response. This simple question, thus, creates a dramatic situation requiring two characters, an interrogator and a respondent. Since no attempt at repeating the letters A through G is offered in the text, one might assume that the respondent is suffering from some form of aphasia and cannot understand the directions or the material to be repeated.

Visually, the movement begins with the top tier of the vertical structure blocked, hiding the Bang on a Can Ensemble, the Baroque ensemble in the middle, and the vocalists on the lowest level. As with other movements from *Lost Objects*, the text is displayed somewhere on the translucent screen; in this case, the words are projected on the blocked top tier. Figure 9 illustrates the stage setup with a screenshot from the performance.

The vocalists are divided into two groups; a trio of voices surrounded by a vocal sextet with three to the right and three to the left. As the movement begins, only one member of the trio is in place. All of the other vocalists appear to be searching for objects amongst the items located on the lower level. A majority of them continue searching throughout the movement while the trio and sextet pull away from the group and take their places. A spotlight illuminates only the group that is currently singing, visually separating them. The screen shot in Figure 9 shows the trio being highlighted. As the movement progresses, the text on the top tier fades away and is slowly replaced, one at a time, by

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<sup>19</sup>Librettist Deborah Artman.

FIGURE 9. Still frame from “Acoustic Aphasia,” *Lost Objects*.

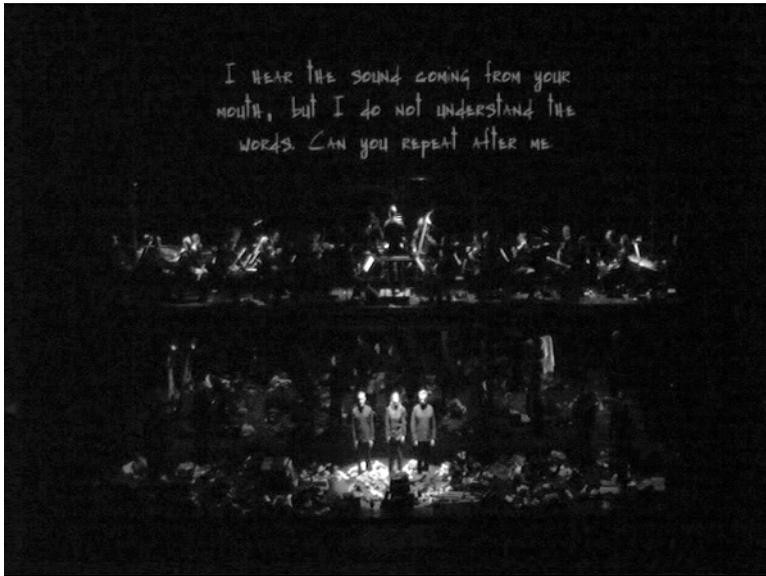


FIGURE 10. Grid of lost languages from “Acoustic Aphasia,” *Lost Objects*.



a grid of “lost languages” that encompasses the entire height and width of the performance area, a screenshot of which is shown in Figure 10. This grid remains visible until the end of the movement, slowly fading away as the music subsides.

As you may recall from the beginning of the article, the music in this movement creates tension between the C-minor referential space on the cycle and subsequent motion away from that space. Referring to Figure 2, the upper and lower voices only move away from established C-minor collection on a few occasions, culminating in the long descent by the lower voices in measure 59. Perhaps these are moments when the music itself becomes lost.

The text, in relationship to the music, wonderfully complicates its own question. The text alone would have the listener believe that the respondent is aphasic, due to the lack of a response. However, the letters A through G are not just spoken as text, but are sung. It is also hard to ignore the musical implications of the letters chosen; yet they are not set to the corresponding pitch of each letter.<sup>20</sup> The letters are instead set to the same descending melody of the question (see Example 2). This is an apparent mismatch of information. On one side are the pitch names ascending in step, and on the other, actual pitches descending by thirds. This would seem to indicate that the interrogator is suffering from aphasia, confused over how to properly perform the spoken pitch names. This result is in direct opposition to when just the text is considered. However, a possible resolution lies in the ic<sub>3,4</sub> cycle itself, specifically those times in which the pitch collection deviates from the C-minor collection.

The music that sets the question occurs in measure 31, shown in Figure 2b as the line moving from pitch-class D to pitch-class F. The immediate response to the question is actually the music, not the text. Figure 2 shows that in the measure following the question, the other upper voices ascend to pitch-class E while the lower voices move by tritone POLE to C#. The musical question, then, a descent through the C-minor area of the ic<sub>3,4</sub> cycle, is answered musically by pitch-classes that lie outside of those bounds. The respondent and the interrogator

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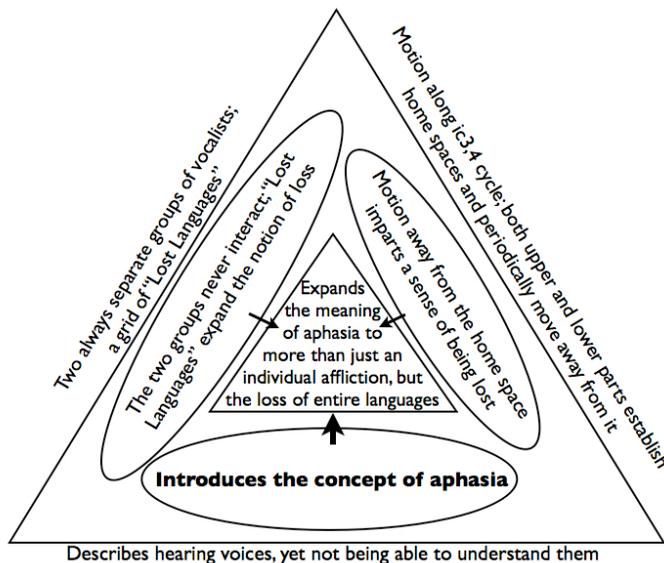
<sup>20</sup>There are numerous examples of the musical alphabet being set to the actual notes being spoken. One example is Leonard Bernstein’s *Mass*, where the singer states, “I believe in F#, I believe in D,” and is set with the corresponding pitches. The singer even mentions changing keys, and the music obliges. The non-conformance of the music to spoken letters in the text appears to be the less common, and therefore marked, way to set the music.

are, in a sense, speaking different languages; they are completely unable to communicate.

Perhaps even more striking is when the grid of lost languages (Figure 10) combine with the ic3,4 cycle to deepen and extend the meaning of aphasia. The languages slowly appear on the screen, initially without context. However, as more languages appear, it becomes clear that they all belong to a larger category of lost languages. It is at this moment that the cellos and basses begin their long descent through the cycle (See Figure 2a), and moments later the words “Lost Languages” appear, confirming the categorical grouping. This falling bass line, reminiscent of a lament bass, mourns not the loss a single person’s ability to speak, but the loss of whole languages from existence.

The constellation of meanings is illustrated on the MIMM in Figure 11. Allowing the text’s references of aphasia to become the focusing domain, an underlying subtext of the movement becomes apparent. Not only does the music drift away from its home space in the cycle, but that drift also aligns with the concepts of loss and aphasia. The visual domain augments the text by associating the movement with lost languages. The loss of an entire language, after all, would be the ultimate manifestation of aphasia.

FIGURE 11. An interpretation of “Acoustic Aphasia” with the text acting as the focusing domain.



The other movements in *Lost Objects* continue to focus on the Talmudic ideas associated with lost things, though none makes such explicit use of this multi-aggregate ic3,4 cycle.<sup>21</sup> It is interesting, nonetheless, that the cycle itself can not only reinforce concepts introduced in the text and visual domains, but also add subtle nuance and expansions to the interpretations. While the domains in these two movements mostly agree with one another (what Cook would call conformance<sup>22</sup>), it is often the moments in a piece where there is intentional conflict between the domains that cause the most interest. To that end, consider again “Fw:Fw: Please Look.” Recall from the analytical discussion of the music (see Figure 3) that throughout the movement, the upper and lower voices never occupy the same space of the cycle, apart from a brief moment in measures 30 to 48. Shifting the music domain to focus on this idea rather than the form emphasizes not a lack of closure, but a lack of overall conformance. This disagreement also lies in direct opposition to the shared, cooperative nature of the both the email (which despite the skepticism inherent to the communication medium, requires a user’s cooperation to send) and the large group searching together on stage. Does this opposition among domains also foreshadow a tragic ending for the child in question? But what about the moment of pitch-class convergence in the music from measures 30 to 48? Measure 30 also coincides with a rhetorical change in the text; the author momentarily stops begging and pleading, and instead offers details about the child, including her name and when she originally went missing. The music, at least in this brief moment, appears to show empathy through unity in pitch space. While this is not enough to change the overall interpretation, it perhaps eases the tragic story of this missing child. Clearly, incorporating different aspects from each domain in the model reveals a myriad of interpretive possibilities.

Complex multimedia works are often overlooked in the music analytical literature for several reasons. The most obvious is the presence of a visual domain with which many analysts may not be entirely comfortable. The growing field of film music analysis may signal a positive change to this perception, but analyses still tend to diminish the role of a visual component or to ignore them altogether. Also, as seen with *Lost Objects*, these works tend to intentionally defy simple, uncomplicated interpretations, instead demanding a more nuanced and multi-

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<sup>21</sup> Of the three primary Bang on a Can composers, Michael Gordon composed both of the movements under discussion here.

<sup>22</sup> Cook, 100.

faceted approach. This essay addresses both of these concerns by focusing on a single, unifying musical device and applying it in an analytical model designed for addressing multimedia compositions and allowing for flexible interpretations. However, an analysis that incorporates the visual domain of a staged work assumes that the staging will remain static. This presents a possible complication, as there is a tendency to restage works like these on subsequent performances.<sup>23</sup> For that reason the MIMM might be better suited to works that have a fixed visual domain, like the *Qatsi* films or Reich's *Three Tales*.<sup>24</sup> That is not to say an analysis of a staged work using this model is undesirable, but rather should be considered a performance-specific interpretation, subject to change upon future performances.

While no analysis of this type is ever final (nor should it be), the goal here is to provide a method of addressing this rich corpus of contemporary compositions. Indeed, we should embrace the complexity of these works in terms of both the musical setting and the integration of that setting in a larger framework of domains, allowing the ambiguity inherent in their creation to be further debated and explored.

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<sup>23</sup>One can look to the Metropolitan Opera production of John Adams's *Doctor Atomic* as a recent example. Director Peggy Woolcock completely redesigned the original staging crafted by Peter Sellars, causing previous analyses of the opera to become specific to the original, not necessarily applicable to the newer version.

<sup>24</sup>I discuss several scenes from *Three Tales* in reference to the MIMM in Sean Atkinson, "Canons, Augmentations, and Their Meaning in Two Works by Steve Reich," *Music Theory Online* 17, no. 1 (2011).

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