

NEVER ODD OR EVEN: USING TEMPORAL STRUCTURES
IN COMPOSING MUSIC FOR DANCE

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This study engages the collaboration of dance and music, focusing primarily on experiences in the production of a large scale collaborative concert entitled *Never Odd or Even*. Famous historical collaborations offer archetypal collaborative models, the more unconventional of which are applied to the pieces of the concert. Issues and observations regarding cross-influence, project evolution, and application of the collaborative models are engaged to determine effective means of collaboration given different circumstances.

The key focus of the study, the temporal relationship between music and dance, is explored in great detail to determine three models for relating time between music and dance. These temporal relationship models are applied to the pieces and evaluated on effectiveness and potential strengths when applied to dance.

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PART I
ON THE RELATIONSHIP BETWEEN MUSIC AND DANCE

Chapter 1

Introduction

Though the art forms of music and dance have often shared the stage throughout history, there also exists a sort of imbalance in this perceived relationship. For instance, while music may stand alone in its own performance, to many the idea of dance without music would seem alien. From a music-centric perspective, there once existed an assumption that in a collaboration dance acts as the subservient "handmaiden" to the music and that the typical relationship for a collaboration between composer and choreographer involves the creation of the score prior to the choreography.¹ However, this presumption on the traditional roles between both art forms limits the creative potential to only one possible approach for the collaborators, and neglects a number of other possible collaborative relationships with their own artistic potential - and indeed this past presumption is shattered by the groundbreaking developments of twentieth century choreographers and the composers who explored and engaged the creative drive of these choreographers. In the spirit of developing not only artistic but collaborative endeavors, I conducted a hands-on exploration into the unconventional relationships between music and dance in a large-scale collaborative concert entitled *Never Odd or Even*.

In collaborating on this project, a number of working models were tested and a number of strategies were undertaken with the intent of determining the most effective compositional approach for a given collaborative situation. Additionally, the collaborative effort allowed us to examine elements of influence from one media to the

¹ Stodelle, Ernestine, "Sensing the Dancer's Impulse," *Art Times* (November 1983).

other throughout all stages of creation in order to maintain a cohesive artistic tone while determining the course of influence in more unorthodox collaborative models (such as models wherein both media may influence the other throughout their simultaneous development). Throughout this process the close attention to the relationship between music and dance brought to discourse a number of unique perspectives from either discipline, the most important of which was manifested in a keen awareness of the temporal relationship between the two art forms. This realization tied intrinsically to my musical contribution to *Never Odd or Even* and played a key role in developing effective compositional strategies for a number of the collaborative models explored in this endeavor. The end result is not only a better understanding of the compositional needs when working with dance, but a proposed model of possible temporal relationships to be considered when music interacts with another time-based art form.

Chapter 2

An Overview of Collaborative Models Between Music and Dance

Before engaging the collaborative project, it is important to first define the possible working models by which a collaboration between music and dance may occur. While laymen typically call to mind only one traditional working model (the music composed first, followed by the development of the choreography), a number of other possible working orders exist and offer their own unique potential for influence and dialogue between the art forms throughout the creation stage. These collaborative orders are defined as: (1) music composed first, (2) dance choreographed first, (3) both art forms created simultaneously, and (4) both art forms created in isolation of one another. These basic working models were employed throughout a number of collaborations in the twentieth century and provide a necessary overview for composers first experimenting with music for dance.

Indeed, the traditionally presumed relationship of music composed prior to choreography strikes the average musician as the most straightforward approach: simply composing a work and letting the choreographer use the finished product as a template for his or her own work. However, truly meticulous and artful collaborations often require direct exchange and dialogue: an astute awareness of the possibilities of dance from the composer's perspective, and a knowledge of the musical elements such as phrasing and rhythm from the choreographer's perspective. Throughout history this collaborative model has ranged from almost full artistic control on the part of the

composer, to greater opportunities for creative discourse evidenced in collaborations from the twentieth century. Stravinsky's collaboration with the choreographer George Balanchine exemplifies the potential for this sort of collaborative order through many of their famous works (such as *Agon* and the choreographed version of Stravinsky's Violin Concerto in D). Balanchine's musical background and skill as a pianist allowed for a keen understanding of the musical score and its potential applications to choreography, resulting in choreography carefully tied to minute details of the music. In collaborating on the ballet *Agon*, Balanchine allowed Stravinsky's composition to serve as a guide for the choreographic development, and referred to rhythm on a large scale capable of covering not only the time organization of phrases but also to an organization of events, larger formal structures, and divisions. The final choreography follows the musical structure closely: formal divisions and changes within the music are accompanied by changes to the choreographic material or the patterning of dancers on the stage, creating a clear delineation of sections for both music and dance. Additionally, the structure and rhythm provided by the music is met with intelligent counterpoint from the dance: dancers acting within the silences, soloists pulling away from the rhythmic structure of the music, and an overall rhythmic interplay between both art forms.²

To be sure, presuming that this collaborative order of "music first" is the key element in allowing this dance/music relationship downplays the skill and teamwork of these two great geniuses. However, the results are indeed a testament to the potential

² Jordan, Stephanie, "Agon: A Musical/Choreographic Analysis," *Dance Research Journal* Vol. 25 No. 2 (Autumn 1993).

model that allows for the finished music to lay a groundwork for many interactions to be placed throughout the collaborative work. While composing the music prior to the dance appears at first glance to be the most straightforward and easy of the collaborative models (indeed, composers may be in their most natural element of simply composing music), an astute awareness of the choreographer's desires is essential, as is as the consideration of writing music that anticipates and accommodates the dance. An informed composer composer aided by an articulate and decisive choreographer are therefore capable of devising a musical work that leaves many opportunities for intelligent discourse to occur when the dance is set, resulting in a truly powerful collaborative work.

In contrast to the typically assumed role of music taking primacy, developments in the Twentieth Century have expanded dance beyond the "handmaiden to music" role that seems to have pervaded its earlier history. As choreographers moved dance into its own, the creation of movement before music became an increasingly plausible working method and necessitated a somewhat rare composer willing to undertake the collaboration from this perspective. Composer Vivian Fine made great success in the dance community by engaging such a collaborative model, composing music to dance already developed by choreographer Doris Humphrey and other works by the Humphrey-Weidman Dance Company. In composing to the guidance of a choreographer (which can be seen as a sort of role-reversal), Fine's music was designed with an initial stimulus that was not a sonic idea but rather ideas formed by the choreographer. Such collaborations

relied on the validity of the choreographic idea as its own entity first, and then as a dance movement with physical gestures capable of evoking the necessary sonic material to inspire the composer.³ In much the same way as having the music created first, the composer is given the choreography (and in some cases supplemented by dramatic guidance) often structured by counts and durations to outline the musical accompaniment. More importantly, Fine describes a sense of "gesture" established by the dance which the composer must absorb and translate into a musical gesture, a response to the dance similar to the way dance responds to music.⁴

In many ways, these two collaborative models (music first or dance first) are highly related in that the art form that is completed first takes on a guidance role for the creation of the other. In either case, one takes a primary role with the other using the work as reference for its own development. Given collaborators with a thorough awareness of one another's work, both models are capable of responding to the previously finished work with a contribution that illustrates the interplay and interaction between both media. The main case for choosing between either working model may mostly be one of preference: one collaborator developing a fully formed idea while the other chooses to act as a response to that idea once it is completed.

While the above collaborative models work from different ends of the same process, both rely on one of the components (either the music or dance) to be completed

3 Fine, Vivian, "Composer/Choreographer," *Dance Perspectives* Vol. 16 (1963).

4 Elaborating on of Roger Sessions' description of music as a gesture. Ibid.

far enough in advance as to allow the other to respond to it through its own development. In that regard, one forms a great deal of the structural framework necessary to guide the other. However, there also exists the possibility for simultaneous creation of both dance and music from the earliest stages. This working model allows for both collaborators to influence the project from the earliest possible stages and often results in a creative exchange applied directly to the rehearsals. With both facets created simultaneously, one common case results in an episodic work wherein either the dance or music outpaces the other and in turn provides an influence for the other as it catches up to that same point. While the precise details of the creative process may vary, the key characteristic of simultaneous creation is the potential for one medium to exert influence on the other and vice versa. *Variations V*, a collaborative work by John Cage and Merce Cunningham, broke from the duo's experiments in developing independence between the two art forms by devising, through technological means, an environment wherein the dancers exert as much influence on the musical performance as the musicians.

Alternatively, one can make the case that free improvisation also constitutes the simultaneous creation of dance and music in collaboration. Indeed, this approach relies on the same basic principle of witnessing and responding to each other's art form, except that it is in a real-time context. While not entirely in the vein of free improvisation, elements of *Variations V* also incorporate an improvisatory approach: Cage used no conventional score to govern his performance (relying on an outline of sound generation methods and media sources), and is said to have worked "in the spirit of improvisation".⁵

5 Miller, Leta E, "Cage, Cunningham, and Collaborators: The Odyssey of *Variations V*," *The Musical*

The creative dialogue between performers in this setting is most evident, and requires an ability to communicate desires and agree upon gestures (both physical and musical) while in the midst of the performance.

Finally, there also exists the possibility for both music and dance to be created in isolation of one another. This method was made famous in the experimental collaborations between John Cage and Merce Cunningham and is manifest in works such as *Tossed as It is Untroubled* and *Spontaneous Earth*, which arranged alignments between music and dance only at key points, and was taken further in later works such as *Points in Space* which removed even these points of prearranged intersection.

With very little (if anything) to guide the alignment of the music and dance, it is important that what demarcations do exist provide a clear agreement for both the composer and choreographer. In most cases, this manifests itself as an agreed duration for both artworks, and allows the two entities to exist autonomously of one another in all other regards. Such an isolated creation process embraces the potential for coincidental alignments to occur rather than attempting to stage or otherwise prearrange the synchronism. This in itself is born out of Cage and Cunningham's philosophies and experiments with chance as a compositional tool. Indeed, this model offers a potential for varied works and extensive experimentation, but requires both composer and choreographer to engage a great deal of trust for one another throughout the creative process.

Quarterly (Fall 2001).

By no means are these working orders completely rigid. Even with a number of collaborations wherein one media was created prior to the other, a clear creative discourse between both creative minds greatly strengthens the sense of cohesion when both art forms come together. The rationale for choosing any of these working models may range from the practical to the aesthetic, and each has its own benefits to the collaborative team depending on the skills and knowledge of the artists.

With these working models established, the collaborative project to create *Never Odd or Even* is put into context. A large scale production in collaboration with a student choreographer, this project offered a hands on opportunity to engage a number of collaborative working models and to experience the established techniques of composing music for dance. In developing this concert, key concerns regarding the relationship between music and dance from the planning stages to the perception of time produced decisions both artistic and pragmatic. The end result is not only a large scale intermedia program, but an endeavor for artists of different disciplines to gain understanding on the perspective of one another's art form: a necessary understanding that forms the basis of truly effective collaborations.

Chapter 3

The Compositional/Collaborative Approach to *Never Odd or Even*

Overview of the Collaboration and Concert

Collaboration on the concert *Never Odd or Even* began at the end of 2010 when Terryann Davis requested my service as the composer for her dance concert, after our having spent a semester working in close relation on a number of smaller dance pieces. As choreographer, writer, and video artist, Ms. Davis planned to draw upon a multitude of different styles, media, and themes over the course of the evening length concert, incorporating not only music and dance, but also the use of film and other possible creative disciplines. In the time working with Ms. Davis prior to *Never Odd or Even*, the basic collaborative models described in Chapter I were all explored, and there developed a definite understanding of the different artistic languages inherent in the respective media and working methods. For instance, simple terminology and phrases common in one collaborator's artistic language often resulted in a different interpretations from the perspective of the other collaborator. In this early stage, it was essential to develop a general consensus on key terminology so as to provide a proper articulation of one another's intent. Music visualization also played a prominent key in this early collaborative development as both composer and choreographer determined the representation and interrelationship between the visual (dance) and the aural (music). Above all, the sense of phrasing and musical/choreographic depiction were negotiated and defined from the perspective of both collaborators.

Additionally, the use of video projection played an important role in the choreography for a number of pieces on the program, both as a means to augment the staging and as another focal point for the audience's attention. Given the technical capabilities of the space and a desire for variety throughout the program, the addition of video as a choreographic element ranged from a visual ambience of light and shape, to a second visual entity with a sense of timing and rhythm related to the dance, to a self-contained film with no live performance element. However in all of these cases, the compositional strategy required not only a sensitivity to composing for dance, but also the sensitivity to either compose a musical element for two simultaneous media or to negotiate the musical element between emphasizing the film aspect or the dance.

Throughout three preliminary pieces developed with Ms. Davis before the long-term collaborative project, several topics were discussed, including the governance of pulse, the development of phrasing from the pulse, and overall formal structure. While these topics may be interpreted as typically music-centric, the learning experience required both the musical and the choreographic perspectives in order to gauge the overall sense of structure of both art forms by both collaborators. This sense of naturally occurring structure shed light not only on the formal development but also the perception of time and formal subdivision inherent in either collaborator's perception of time over the course of an artwork, an understanding that would play a key role in the greater understanding of temporal relationships between music and dance.

While previous collaborations were undertaken joining music and dance, the majority were small-scale pieces, each with a static, continuous theme. However planning a full length concert necessitated a great aesthetic variety and offered a number of opportunities for engaging the relationship between dance and music on multiple levels. The result was an evening length concert that not only employed a variety of themes and styles, but also acted as a testing ground for these collaborative intermedia approaches.

Table 1: Concert Order and Major Characteristics of Pieces

Never Odd or Even Concert Order					
Title	Duration	Instrumentation	Collaborative Order	Temporal Relationship	Notes
(dis)Connect	3'41"	2-Channel Stereo	Simultaneous	Time Dependent	
Prime I	2'05"	Film Score	Dance First	Time Dependent	
Never Odd or Even	~5'	2-Channel Stereo and Voice	Dance First	Time Dependent	Shortened in concert
Stone.Fire.Light	3'38"	Piano and Electric Guitar	Simultaneous	Hybrid Relationship	
Prime II	1'40"	Film Score	Dance First	Time Dependent	
The Interview	4'42"	2-Channel Stereo	Dance First	Time Independent	
Intermission					
44014	4'30"	Piano and Voice	Simultaneous	Hybrid Relationship	
Prime III	1'45"	Film Score	Dance First	Time Dependent	
Wind.Water.Air	4'07"	Piano and Voice	Simultaneous	Hybrid Relationship	
Assise	~5'48"	Silence	Simultaneous*	Time Independent	Initially with music
Prime IV	1'30"	Film Score	Dance First	Time Dependent	
Absolution	11'12"	2-Channel Stereo	Dance First	Time Independent	

Applying the Temporal Relationships Between Music and Dance

While the previous collaborations with Ms. Davis experimented with the established collaborative models, from the early planning stages of the project it was understood that the majority of dance pieces for the concert were to be created prior to the music. This somewhat unorthodox model can be interpreted as a role-reversal of the traditional relationship wherein the composer would establish the music first for the choreographer to set the dance. This approach allowed for some initial pre-compositional

material to be planned before the choreography, but a majority of the musical material only kept pace with the choreographic material as it was developed, and rarely extended further than the progress of the dance. This afforded a unique opportunity to view the dance based on the choreographer's parsing of time, which proved essential in determining how the musical pieces would organize time in a manner that would be pragmatic for both dancers and musicians. While it seems obvious that the methods the choreographer used to structure time within the dance were influential in determining the temporal structure of the music, a number of unanticipated factors warranted a closer perception of the use of time. What developed were three "temporal relationships" by which both media would parse the use of time with regard to phrasing, cues, and tempo in the most effective way based on the temporal conditions in place.

Temporal Relationship I - Time Dependent

A time dependent relationship follows the most traditional relationship between dance and music. Counts and beats determined by the choreography formed the basis of phrasing for both the dance and the music resulting in the most strictly unified structure of all the temporal relationships. However, with the dance established prior to the music it became necessary for the music to occasionally take a different interpretation of the choreography's beat structure for purposes of phrasing and pacing. Likewise, musical elements finished before the dance would have a distinct influence on the pacing and trajectory of the choreography.

The music to the opening piece, "(dis)Connect," required one such consideration. Gestures and choreographic phrases were established over counts of either five or ten which would alternate throughout the piece. Though an overarching pulse was set, the tempo established was roughly seventy-two beats per minute and did not produce an adequately quick pacing to match the quick actions that subdivided the pulse. The decision was made to have the pulse establish measures rather than beats within the music thereby allowing for five-measure phrases with subdivisions of the measures adding more activity and density necessary to propel the dance forward.



Figure 1. A sequencer interface displaying MIDI data alongside dance rehearsal footage for "(dis)Connect." Each measure demarcated along the top of the session represents counts from the choreography, subdivided into measures of three beats. For example, a five measure phrase begins at subdivision 74.

The piece was composed to rehearsal footage that included a set beat that was verbally counted by the choreographer. This established form and beat subdivision provided a ready structure for the composition, and moreover allowed for distinct cues and synchronization points to be composed to the movement. As the choreographic gestures and phrases were also subdivided under the pulse, the musical subdivisions applied a hemiola effect at times in order to suit the greater level of density, not only in the movement but in the video projection that accompanied it. As the dance neared a conclusion, the roles reversed and the music extended to the end prior to the dance, providing a framework for the dance to structure its own ending. In collaborating on this piece it became apparent that having at least one component (musical or choreographic) completed farther along provides a framing device for the other to structure new events. Though the practice is obvious in traditional collaborations, the discovery prompted a new consideration in that both pieces were created simultaneously and alternating between them would provide new framing for the other. While all of the pieces created simultaneously exhibited this same feedback model, only a few of the pieces defined as strictly time dependent displayed such a definite structural influence on one another.



Figure 2. Photo taken from "(dis)Connect."

Additionally, "(dis)Connect" relied heavily on video projection of text on screens behind the dancers. The appearance of words and their subsequent alteration by the appearance of the prefix "dis" created its own rhythmic structure that moved asynchronous to both the dance and music, with the closest correlation existing only in the sense that the speed and rapid introduction of text coincided with the increased speed and activity that distinguished the B section of the music as well as the dance. This sense of temporal relationship between the video to both the dance and music was a result of the video element being created after the completion of both the choreography and music and thus relying more on formal structure as a framing device than a close alignment with any one media. Focusing on the temporal relationship of the video element, this can be

interpreted as a perspective on time independency that is explored in later pieces.

Three of the four "Prime" films fall under the category of time dependent relationship, from the earliest drafts to the final product, despite a number of conceptual changes along the way. The pieces were initially conceived as an exploration of prime numbers as a phrasing and structural device between two dancers. Physical gestures were based on durations of prime number beats unique to each dancer resulting in alignments and that would occur in irregular patterns. Initially, the scoring incorporated a similar approach by using prime numbers to form the phrasing for a number of textures which would allow for similar alignment instances as those of the dancers, with dynamics to emphasize the phrasing that is currently in alignment at each instance. What resulted was a very dense activity that relied on dynamic shifts to alter the prominent sounds in accordance with alignment to the dancers.

Example 1. Score excerpt from the earliest draft of "Prime I." Initially, the music called for live performance with phrases constructed from prime number time signatures.

♩ = 220

I. The Drive

The musical score consists of three staves. The first staff (labeled '1') is mostly empty, with some notes in the final measure. The second staff (labeled '2') contains a melodic line with dynamic markings *mf*, *p*, and *mf*. The third staff (labeled '3') contains a bass line with dynamic markings *pp* and *mp*. The time signatures are prime numbers: 5/8, 7/8, 11/8, 13/8, 17/8, and 19/8. The tempo is marked as ♩ = 220.

The dances themselves were set to be performed in public spaces and necessitated filming in order to present them at the final concert. It eventually became apparent that while the dances were choreographed and set in real-time, the filming process need not comply with the choreography, in what would essentially be a single long-take with its sole purpose being to record the dance. Cuts, close-ups, and other film techniques were now available to give visual emphasis and direct the eye of the audience in ways that a live, technologically unassisted performance cannot. The aesthetic impact of emphasizing the film approach also influenced the new direction of the films to adopt a comedic tone and the visual imagery of silent films from the early twentieth century complete with film

grain and title cards. The new opportunities afforded by a more film-centric approach, as well as the discrepancy in time use between a cinematic and a choreographic model, became major factors in the development of "Prime", to the point that it warranted a significant new direction for the musical component.



Figure 3. Scene taken from "Prime IV." The film was made in the style and visual appearance of early silent films, complete with dialogue cards.

When the scope of the films changed to this final structure, the decision was made for a more traditional score with a greater emphasis on the timing and pacing of the films themselves rather than solely focused on the dance within the films. A new set of pieces was composed for all but the third "Prime" film (discussed later), and took on a more straightforward musical approach than the original music, which was characterized by a higher density of prime number phrases. Significant physical gestures were still taken

into account, but the overall musical pacing was also heavily influenced by the cuts and scene changes that became the visual focal point, an approach more analogous to the traditional practice of film scoring with a reliance on cuts and scene changes as well as moments of choreographic synchronization. Even during this concept change, the overall process still maintained the original collaborative model: the choreography and film were finished prior to completion of the final music, and provided the framework and pacing by which the music was composed. However, the shift from scoring the dance to scoring the film of the dance did alter the scope of the temporal relationship. While the initial musical concept was designed with an attempt to have potential alignment for either dancer at any prime number phrasing, the final version was a degree removed from such a close fit. With the addition of cuts and scene changes throughout the dance films it became necessary to prioritize synchronization points or moments of alignment on either a film or choreographic level that would occur throughout the work. Such a prioritization formed a backbone for the work in time independent relationships explored later.

The unique aesthetic of the "Prime" films also influenced the large scale structure of the entire program. Placed at relatively regular increments throughout the concert, distinct visual and musical style the films offered a reprieve of sorts for the audience: a limited use of media (only film) with a humorous change of pace that countered the more abstract and emotional themes of the other works. The lighthearted nature of the "Prime" films served an important function as the refrain in the overall meta-structure of the concert.

"Assise" deserves special note in that the initial concept of the piece was that of a time dependent relationship. Music and dance were created simultaneously with shared rehearsals that served as brainstorming sessions. With the dance created in a mostly linear fashion, the compositional process took on a similarly linear approach in order to keep pace with events developed in the choreography. A number of alterations were taken to fine tune the music, as choreographic movement was honed and executed in a faster, more fluid manner; but for the most part, the musical development would not exceed past the choreographic development with the exception of sketches and basic planning for future events in the piece. This would not be the case in the final incarnation of the work, but nevertheless, it provides a distinct situation in such a collaborative model wherein both works are created simultaneously with strict temporal relationship.

The title piece "Never Odd or Even" was another piece composed simultaneously with the dance. However, rather than the relationship that occurred with "(dis)Connect", the majority of the dance was developed prior to composition and thus constantly supplied a framework for the music throughout the compositional process. The distinct counts and phrase structure of the music were clearly derived from the dance structure, and the active ostinato pattern propelled the movement forward while using the same dynamic phasing originally intended for the "Prime" films to alter the timbral quality throughout. The material of the B section provided a moment of ambient suspension in

order to suit the change in dance, punctuated by the vocalizations that were without definite metric drive. While the music was still defined by the pacing and formal structure of the dance, the less rigid adherence to phrases combined with only minimal synchronization points results in a piece that was perhaps the least strict of the time dependent works, while still remaining intrinsically dependent on time with regard to the overall collaborative relationship.



Figure 4. Photo taken from title piece, "Never Odd or Even."

The key benefit present in time dependent relationship is that once a universal time structure is agreed upon, both music and dance can be created in a very straightforward, traditional manner. With a great understanding of both musical and choreographic phrasing, this relationship has the potential to be very strictly aligned with

tight synchronous movement, both musical and choreographic, akin to the choreographic works of Balanchine. However, the success of this relationship hinges on both collaborators' mutual understanding of one another's media. An understanding of the musical score is just as essential to the choreographer as the understanding of the choreography is to the composer: both allow for an intimate grasp of the phrasing and motives that are present both sonically and visually.

For the composer, this type of temporal relationship proves most efficient when composing to a medium that has already been finalized, or vice versa. This falls into the most traditional model of having either the music or the dance created first and establishing the overall pacing, framework, and event structure for the remaining collaborator. In the case of the "Prime" films, the choreography was already established and filmed before the music was added, much the same way that a film score is approached. A slightly reversed approach was taken with "(dis)Connect", in which the B section material provided a framework for the remainder of the choreography. Such a structural format determined by the first finished medium can be viewed as both a guideline and a potential constraint, but with cooperation between the collaborators, this temporal relationship allows for a tightly synchronized collaboration with a unified sense of form. This model works efficiently should one medium be finalized prior to the other or if the collaborators are accustomed to working quickly. However there is an obvious time constraint in necessitating one media to be finished before the other. Though it seems obvious to state, a great deal of rehearsal with the finished material will also be

necessary in order to establish tight coordination for time dependent relationships that involve very strict synchronization.

Temporal Relationship II - Time Independent

Seeking a "time independent relationship" between music and dance does not necessarily imply a complete isolation from synchronization of events but rather allows for a greater flexibility of time within said events. The main restriction is that the choreographer and composer agree upon only a few key points of synchronization, change, or other significant events for the piece. For a majority of time independent relationships that used this particular collaboration, a standard length for each event, significant points of change, and an overall length for the whole piece were the only key considerations in plotting the temporal relationship between the music and dance.

The initial concept of "The Interview" lead to an early attempt at a time dependent relationship, as the choreography was already completed prior to the initial collaboration. However, formal and structural changes were considered for the choreography that would change the overall events within the dance, thus necessitating a more free-form approach to the musical composition, as key events present in the first version of the dance may or may not remain in the final version. Four key event points that delineate three sections were established for the overall structure, but the precise location of these points within

the piece were originally determined by the initial compositional process. Relying on visual elements present in the video and the theme of the text, the overall sonic environment was created to suit the established event points, with transition from section to section emphasized by sudden sonic changes and key phrases spoken by the narrator. Aside from the aforementioned event points and transformations, few other considerations with regard to synchronization of events were given as strong an emphasis throughout the compositional process. The end result was a work with a great fluidity with regard to time both in conception and execution.

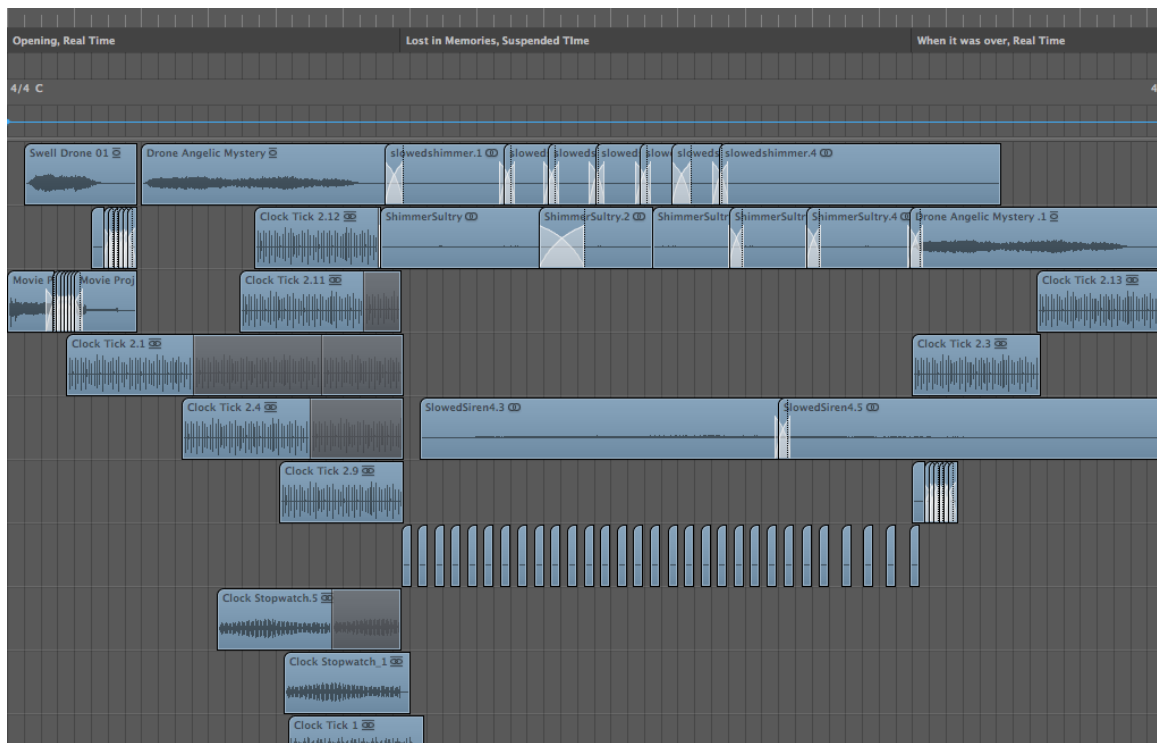


Figure 5. Sequencer interface of "The Interview" outlining the three basic sections of the piece with predetermined formal divisions at 1'33" and 3'35".

Perhaps the most important consideration that was maintained, however, was the visual and thematic aesthetic. The visual style was inspired by the imagery of the police interrogation scene often used in film noir. The music in turn explored the concept of inner monologue that the protagonist would take, with an emphasis on the passage of time during such an event. Using the text as a framing device to assist with significant musical changes, the musical component engages symbolic time versus imaginary time with regard to the narrator/protagonist. The imagery of the narration coincides with an auditory "slowing down" of time within the piece as the sound is time-stretched and the density of clock ticks is reduced to a single low strike, which itself is also time-stretched. Despite this new sonic environment in the B section, the narration and dance continue moving at an appropriate speed. This serves to illustrate the dichotomy between symbolic time (accurate passage of time as denoted by clocks) and imaginary time (the subjective approximation of time duration for an event), which are both at work from the narrator's perspective. This also evokes a more aesthetic sense of "time independency" in that the B section is characterized by its lack of complementary pacing between the music and dance. Key event and state changes still govern the piece, but it is due to this less-restricted formal structure that such discrepancies in timing and pacing are easily achieved.

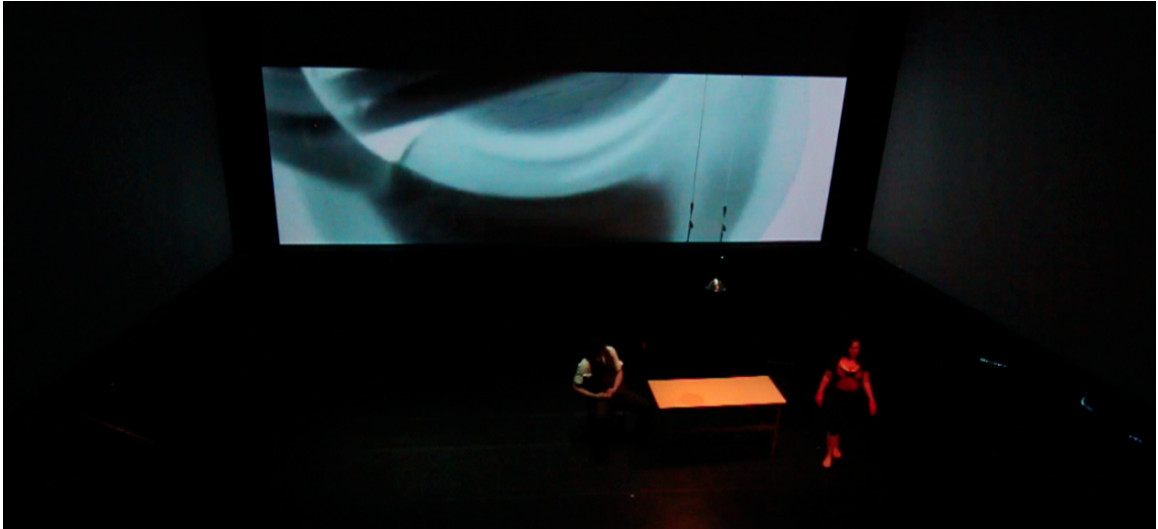


Figure 6. Photo from "The Interview." The stage was set to resemble an interrogation chamber, with a lamp suspended over the table and chairs.

The third "Prime" film, though produced in the same way as its counterparts, was given a different direction in regard to the musical component. The elevator setting and the humor derived from awkward interactions lead to a decision to make elevator music with a distinctly low quality, bothersome sound. A roughly ten second segment was written and inserted throughout the film with only two synchronization points established: the initiation of the first iteration, and the termination the last iteration at the end. Different lengths of silence created awkward pauses that would occasionally synchronize with paused movements, but for the most part these were placed solely to create awkward pauses with regard to the musical environment.



Figure 7. Scene from "Prime III" staged in a cramped elevator.

"Assise" is a particularly unusual case in that it was initially conceived as the most temporally strict piece in the program. Music was composed to the dance following strict beats and rhythms, and ultimately following an episodic collaboration quite similar to that of "(dis)Connect" and other works with time dependent relationships. However, an unexpected occurrence during performance resulted in an audio malfunction that left the dance in mostly silence with only very soft interjections by the disklavier piano that would sound sparingly throughout the dance. The resulting sparse musical component created a new interpretation of the piece: the dancer was made an extreme point of fixation unencumbered and unobstructed by dense sound, which further emphasized the

emotional content of the dance. Placed close to the end of the concert, this striking absence of music also provided a distinct moment of change within the concert as a whole. Moreover, the final version's relationship can be seen as an extreme example of time independency, wherein neither the dance nor the remaining sonic environment are in any sense intentionally synchronized. Naturally, this final version proved slightly problematic in execution as the dancer was accustomed to counts and beats supplied by the music. However, the choreography was first developed and rehearsed prior to the addition of musical accompaniment, the dancer was still capable of executing the movements and choreography without musical support, as brought on by this unexpected situation. While the initial planning intended for a more dense sound and strict temporal relationship, the surprising result of this new independency strengthened the dramatic effect of the piece overall, while exploring the polar opposite of temporal relationships typically associated with traditional collaborations.



Figure 8. Photo of "Assise" depicting the lone dancer, emphasizing her sense of isolation in the silence.

The final piece of the concert, "Absolution", was previously choreographed before the initial collaboration, and thus provided an overall structure and framework of events. However, like "The Interview," this piece was considered for choreographic revision and thus warranted a flexible approach to the music to allow for the developing choreography. The ten minute piece was subdivided into five sections that were characterized by the dancers and thematic content unique to each movement. Beginning and ending times for each movement were established as well as basic outlines for transitional phases between certain movements, all determined by the initial choreography. This in turn allowed for the basic structure within each section to be composed alongside rehearsal footage in a

purposes of this piece, masculine design elements were considered those that appeared manmade, artificial, and rigidly regimented while feminine design elements were considered more organic and free flowing without a need for restriction and careful order. From this perspective, a use of rhythmic patterns and metrical subdivision appeared as a constructed device for order and thus necessitated a music that did not emphasize such things. Manmade instruments were also removed in favor of female voices that were improvising, recorded to form the sonic raw materials, and finally transformed to create an electroacoustic piece derived almost entirely of female voices (with the exception of a piano recorded for the second movement, a choice made to evoke a greater sense of innocence and simplicity).



Figure 10. Photo from the final movement of "Absolution" with all five dancers present on the stage.

Improvised materials were without established tempo or metrical guidance, and the final implementation resulted in only brief moments of decidedly rhythmically structured organization. In this notable absence of rhythmic pulse, the relationship between the music and dance became less and less temporally strict, relying instead on the original event markers established by the dance as the main moments of alignment between one movement and the next. The end result was a sound environment that lasted for the duration of each section and provided occasional moments of alignment, but also allowed room for the choreography to hone and tighten without being restricted to a rigid temporal structure. More pertinent to the development of the concert, this aesthetic consideration to move away from evocations of rigidly manufactured structure first brought awareness to the time independent relationship at work between both media. Ultimately, this new understanding of temporal organization and coordination between dance and music influenced the approach taken in "The Interview," as well as the hybrid form explored in later pieces.

The time independent relationship offers many benefits for choreography that is still in development. The established event points take precedence over smaller subdivided synchronization points, which allows for thematic and formal continuity that may fluidly adapt to slight alteration in the choreography with minimal rewrites to the composition. Most importantly, it provides a means to compensate for the increased speed and fluidity that arise as choreographic movement is developed and honed to

perfection. Whereas a temporal relationship densely packed with synchronization points and heavily reliant on alignment may need extensive revisions should the choreography be altered, most of the revisions only affected transitional material between sections or the moment of transition between sections. Considerations of density, pacing, level of activity, and tone allowed for sonic environments that properly accompanied the choreography without becoming so detailed as to risk extensive revisions. Following the adage of "fitting close without fitting *too* close", the time independent relationship has the potential to create an effective accompaniment to the dance that is both flexible and accommodating to any developments within the dance at all stages of its creation.

Flexibility and lack of strict timing may also create distinct disadvantages for this temporal relationship: in moments without clear subdivisions of phrases or measures, or without a clear system of rhythmic beats, the dancers have no readily perceptible means of locating themselves temporally in the music. While the dancers may be structured within their own system of beats or within an overarching timeline, certain precautions and considerations must be taken in order to give the dancers a clear understanding of their place within the musical component. Perhaps the most successful solution provided within such a scenario was the inclusion of distinct audio cues in the music. The effect was much the same manner as combining live musical performance with prerecorded audio, as the sonic material itself provided the dancers with entrance/exit cues throughout "Absolution," while also providing moments to synchronize key physical movements or actions. In dealing with a temporal relationship that uses very few time points to provide

the structural framework, it is essential that these moments of alignment are keenly distinguishable. Just as pacing, timing, and dynamic help provide an impetus for the physicality of the dance, every effort must be made to also assist the dancers in locating themselves within the music. The flexibility and nebulous sense of time within a Time Independent relationship must be carefully tempered with a clear sense of guidance for the dancers to coordinate themselves.

Hybrid Relationship - Combining Time Dependent and Time Independent

The hybrid relationship is essentially a temporal relationship that uses elements of both time dependent and time independent relationships. While such a hybrid conceptualization has the potential to take many forms, the most commonly used model throughout the overall collaborative process took advantage of time dependent's ability to suit small-detail rhythmic patterns as well as providing a pulse for the dance in conjunction with time independent's ability to compensate for long expanses of time that require flexibility during transitional states. The hybrid relationship pieces were the only ones on the concert to rely solely on live performance unassisted by electronics, and thus this approach to the relationship was designed with the intent of facilitating live music performance alongside dance.

"44014" (read as "four forty fourteen") shows a slight use of the principles behind

the hybrid relationship that would become more sophisticated in later pieces. The piece began with a decidedly time dependent approach as both dance and music were created simultaneously with the music composed to the dance as it progressed. This potentially provided the ideal model to represent a strictly time dependent relationship, and indeed the score remains the most traditional and straightforward of all the pieces meant for live musical performance. However, the slight differentiation in speed and time that occurred as the dance developed necessitated moments that were more flexible, in order to accommodate the movement. Initially, this was addressed by the use of basic visual cues written into the score that would help the performers determine their own location in the dance, as well as occasional vamps and verbal indications of what transitional material may need to be stretched in order to accommodate the dancers.

Example 2. Score excerpt from "44014." Physical gestures are used as cues for entrances of the piano, designated for the performer to watch for during performance.

♩ = 78

Note: Vocalist must sing on an improvised language that has no inherent meaning or translation unless otherwise stated.

Cue piano gestures to the opening step of a dancer each time

Cue to raised sweeping arm between two dancers

This approach could not follow a strict beat value, as the constant adaptation and development in the choreography would produce changes in the timing that ranged from subtle to significant. Instead, changes had to be approximated as necessary by the

musicians following more of a *rubato* playing style with the pacing determined by the dance. While the dance often determined the pacing and formal structure in the other time dependent works, it was evident that this particular time dictation was given in real-time over the course of the performance. Rather than composing a strict musical piece to a strict choreography, the music for "44014" was more flexible and relied on the dancers to serve the function of a conductor. This performance interaction and the overall flexibility of time set a precedent for the further collaborative experiments in later hybrid relationship pieces.



Figure 11. Photo from "44014." Musicians are hidden stage-right, watching the dancers to guide their playing.

"Stone.Fire.Light" and "Wind.Water.Air" further explore the possibilities of the hybrid relationship. Both dances were conceived as "sister pieces" intended for the same

trio of dancers and exploring opposing ends of the same dichotomy. The choreography to "Stone.Fire.Light" took inspiration from resources and materials that must be shaped, and contained in order to be harnessed, while "Wind.Water.Air" took inspiration from resources that prove more difficult to harness and control. From the initial conception of these dances, the central dichotomy of the controlled versus the uncontrollable formed the backbone of the musical theme. The music to "Stone.Fire.Light" thus explored more rigid forms and a sense of concrete stability while "Wind.Water.Air" engaged a sense of organic free flowing motion, in part inspired by the approach in "Absolution".

While, the music for "Stone.Fire.Light" was established with the basic concept of rigid and structured forms, the actual execution was an exploration in the same "dancer-as-conductor" relationship as "44014". The music was composed simultaneously to the dance, with musical cells assigned to each basic dance segment. As precise timings for the dance segments would fluctuate over the course of the choreographic development, the musical cells were simply extended and the performers were provided with verbal indication of approximate length, as well as visual cues to determine transitions between cells. This approach to the score was partly influenced by time space notation with a degree of structured improvisation. Meanwhile the musical material was presented as modal pitch collections meant to be improvised over established set rhythmic patterns. This overall approach to the score allowed for identifiable musical cells to be activated by their corresponding dance segments. These cells were then able to last for as long as the durations of these segments would fluctuate throughout the choreographic development.

Example 3. Score excerpt from "Stone.Fire.Light". Each system is divided cells that are activated when dancers reach a certain point in the movement.

The musical score excerpt is divided into two systems. The first system includes an Electric Guitar part with an E-bow section marked *mp* and a Piano part with chords marked *p*. The E-bow section is annotated with "Pedal as needed" and "Cluster (on strings)". The second system features the Electric Guitar playing a tremolo effect, alternating between *sensu vibrato (SV)* and *molto vibrato (MV)*, with dynamics ranging from *pp* to *p*. The Piano part continues with a rhythmic pattern. Annotations include "Swaying, Backs to Audience: ~ 30\"", "Synch to rising dancers", and "To ord".

The second system is titled "Circle Walking: Cue next downbeat of the pattern as movement is transferred from one dancer to the next: ~ 15\". It features an Electric Guitar part with an ascending scalar pattern on specific pitches, marked "Restart climb again" twice, and a Piano part with a rhythmic pattern marked *p* and *mp*. Annotations include "Synch to third dancer rises twice".

In order to sonically emulate the thematic ideas of rigidity and structure, "Stone.Fire.Light" relied on rhythmic stability of regular eighth-note patterns as well as the general timbres of the piano and electric guitar. The electric guitar employed an electronic bow that produced a constantly transforming sound that would grow louder and bring out the higher harmonics out of time - morphing from a lower softer sound to a higher sound rich with harmonics in a manner evocative of the heat and warmth of fire. The electronic bow produced a sound free of attacks to complement the noticeable attacks achieved from playing the guitar and piano normally, while the quality of the dyads played in the piano gave a mechanical regularity over which the guitar would play.

Moreover, the use of musical cells negated a need to be perfectly aligned with the metric pulse of the dance, thus resulting in an almost perpetual motion and unrelenting mechanical accompaniment to act alongside the dance, punctuated by only a few clearly distinguishable synchronization points. The end result of "Stone.Fire.Light" evokes a sense of the manmade and the rigid, while being executed in an incredibly flexible manner with regard to the dance.



Figure 12. Photo of "Stone.Fire.Light." Guitarist and Pianist are hidden stage-right and rely on movements of the dancers to activate musical cells.

"Wind.Water.Air" relied on the same scoring technique but approached from the opposite end of the dichotomy, dealing with thematic ideas such as the flowing and the uncontrollable. Much like its sister piece "Stone.Fire.Light", the piece relies on the same use of musical cells tied to corresponding dance segments. In this particular case the use of musical cells was as much a pragmatic decision as an artistic one in that the dance

itself was also choreographed in segments, which themselves were often conceived individually. As these individual segments were developed, the music established its own continuity resulting in an overarching flow from one cell to the next. In keeping with the thematic content, the structured pitch collections were eschewed in favor of a more graphic representation of pitch contour. Feather-beamed eighth notes in this piece replaced the strict eighth note patterns of "Stone.Fire.Light" in order to create an undulating increase and decrease in speed accompanied with dynamic swells to evoke the sensation of small waves. Overall, the texture of structured eighth-note patterns established in "Stone.Fire.Light" was transformed to a less even rubato texture, more evocative of the fluid imagery of "Wind.Water.Air".

Example 4. Score excerpt from "Wind.Water.Air." Feather-beamed triplets were used to distinguish a constant sense of slight undulating speed.

Circular Spinning: Improvise melodic contour and accompaniment on this state, vary in response to the physical activity of the dancers; ~!
 Improvise sighing motion in the voice: Ah and Oooh, match swells to the energy of the dancers

Acceleration and deceleration over this pattern, undulate the dynamics and density to match the level of physical activity in the dance

Continue this pattern, variation as necessary

The score for 'Circular Spinning' consists of two staves: Voice and Piano. The Voice staff has a treble clef and contains a single note with a fermata. The Piano staff has a grand staff (treble and bass clefs) and contains several triplet patterns of eighth notes with feather beams. An arrow points from the instruction 'Acceleration and deceleration over this pattern...' to the first triplet. A long arrow points from the instruction 'Continue this pattern, variation as necessary' across the rest of the piano staff.

Circular running: Increase speed and energy to match dancers

Return to swaying: Sudden disperse of energy, very soft.
 diminuendo to a simple sighing motion, grow more lethargic

Reduce down to a short ostinato pattern and diminuendo

Soft sigh

slow swipe across strings

The score for 'Circular running' and 'Return to swaying' consists of two staves: Voice and Piano. The Voice staff has a treble clef and contains a single note with a fermata. The Piano staff has a grand staff and contains several triplet patterns of eighth notes with feather beams. An arrow points from the instruction 'Reduce down to a short ostinato pattern and diminuendo' to the first triplet. A long arrow points from the instruction 'Return to swaying...' across the rest of the piano staff. The word 'rit.' is written below the piano staff towards the end. A small graphic of a string section is shown at the bottom right with the instruction 'slow swipe across strings'.

Moreover, the nature of this different texture allowed for this particular hybrid piece to have a distinctive level of flexibility in its partnership with the dance. Much like "Stone.Fire.Light", this piece relied on distinct cells activated by corresponding dance segments. However, the music's synchronization with the pulse and gestures of the dance was a relationship of exchange: the rubato effect provided the dancers with an element of musical visualization to guide their movements. The specific enveloping phrases of dynamics and tempos that evoked the wave imagery provided the impetus for a similar undulating wave quality in the dance: a slow drawn out gesture that is repeated with a degree of regularity, the increasing and decreasing speed during spins, and a number of other gestures throughout the dance all inspired this distinct musical quality. In performance, the fluid but undulating tempo allowed for either the dancers or the musicians to guide the other through the gestures, resulting in a constant exchange of momentum between the two elements that allowed both media to be flexible in the gestures and timing but cohesive in the overall artistic intent.



Figure 13. Photo from "Wind.Water.Air." Circular movements (spinning, circular running, etc) factored heavily into the dance and formed a basis of the feedback loop between dance and music, each influencing the other's speed.

This experiment in hybridizing the abilities of time dependent and time independent temporal relationships was born of a necessity to accommodate the live musical performance in a pragmatic and efficient manner given the few rehearsals that included both groups of performers from both media. By using time dependency's ability to mark small subdivisions of time within a performance (meter, rhythm, and small phrases), the sense of alignment and cohesive relationship was strengthened on the musical cell level. Meanwhile, the key strength of time independency was the governance of the overall duration of formal sections, which allowed for a flexible time of arrival on the different cells. The end result allowed the "sister pieces" to have the ideal conditions to nurture a cohesive music/dance relationship in a limited number of rehearsals. This is

only one possible implementation of the hybrid temporal relationship, and begs the question regarding the potential for other methods in combining the strengths of both time dependency and time independency.

Throughout this large-scale collaborative effort there was a great deal of learning and self-discovery with regard to the perception of one's own art form from another's perspective. The key discoveries throughout this project more often than not involved a realization regarding how one artist may represent and respond to another's medium. Moreover, the pressure of creating and producing such a large-scale collaborative concert engaged the pertinent topic of practicality. The observations in music visualization, the influence inherent in collaborative order, and most importantly, the temporal relationships were all developed with the direct goal of engaging specific problems, maximizing efficiency, and determining an overall effective means to create a truly powerful collaborative work between the two art forms in a relatively short period of time. These theories on temporal relationships and their use as three potential models came from a distinctly pragmatic desire to suit each of the dance pieces, and that need for practical solutions formed the necessary impetus for this experimentation.

Chapter 4

Conclusion: Assessment and Possibilities

Assessment of Never Odd or Even

On a whole, the program itself demonstrated the effectiveness of the collaboration through a consistent sense of cohesion between music and dance. Moreover, in polling audience members and colleagues the overall consensus was that the collaborative order behind each piece was virtually impossible to determine without prior knowledge. To be sure, establishing a leading role in any of the pieces was not an objective of either collaborator, but the overall response to the pieces seems to suggest that the project was regarded as a joint effort with a unified purpose. I suspect this overall sense of cohesion is due in great part to the consistent cross-influence that resulted from a number of the simultaneous collaborations, which also factored into the concluding stages of the works that were not simultaneously composed. A clear exchange of ideas translates well onto the stage, and is a testament to the effect of communication on such a large-scale project.

It should be noted that the concert was not without its marvelous accidents. As mentioned above, the piece "Assise" was originally intended for solo dancer accompanied by an automated disklavier in an attempt to evoke a sense of solitude among a crowd and a sense of loneliness for the dancer. However, the sudden shift in relationship due to a system malfunction gave the performance an entirely new perspective: instead of solitude by existing alongside a great deal of sound, the effect was

heightened by the silence to an extreme that was never conceived; instead of a very strict time dependent relationship leading the dancer she was instead given an otherwise unimpeded presence to better impact the audience. While the shift was certainly shocking, this turn of events only served to enhance the piece into what I now consider to be its standard performance format. Furthermore, this change results in perhaps the most poignant relationship between time dependency and time independency, as the piece managed to flawlessly cross from one extreme to the other. This in turn influences one of the key elements of the temporal relationships: that they are very much a matter of perception, that they are all potentially capable of functioning and suiting a given work, and that a clear perception of time is essential in determining the most accurate fit for any given work.

In follow-up conversation with the dancers on their own experience with the music, the general consensus was on the importance of effectively telegraphing the pace and necessary event cues to the performers. Given that a number of the dancers were underclassmen only beginning their introduction to both modern music and modern dance, the sense of clear rhythmic drive provided by the time dependent and hybrid pieces allowed for a constant ability to locate oneself within the dance. Conversely, more advanced dancers and dancers with greater awareness to sound changes were able to respond well to the event changes of the time independent pieces by combining a clear sense of the choreography's pacing with an awareness of sonic changes over the course of musical sections. In particular, "Absolution" proved to be a very effective means of

guiding the dancers, as even the less experienced among them were keenly aware of the subtle change in sound characteristics that would accompany specific dance cues as well as the overall change in sound accompanying the transition from section to section throughout the piece. On a whole, this method still requires further refinement and consideration when accompanying dancers of any level, and will warrant more experimentation in future dance works. However, an orchestral or timbral diversity throughout a piece gives the greatest opportunity for dancers to navigate larger forms, while regular rhythmic textures help guide smaller time subdivisions. This may prove quite useful in large-scale Hybrid relationship pieces, where both considerations may be simultaneously employed.

Composers, Choreographers, and the Fractalization of Time

Vivian Fine describes the relationship between dance and music as a dialogue concerning the flow of time.⁶ With that in mind, any dialogue or discussion has at its core a difference in perception, in this case with regard to the flow and structure of time. In reviewing the works developed throughout this collaborative concert, it became evident that the key perception of dance from the musical standpoint involved some level of fractal representation of dance events. To be sure, the artists of both media acknowledge the existence of a certain formal structure in all works and both acknowledge the possible subdivisions of the overall pulse within a given work. However, the distinct sense of awareness for form and subdivision inherent in musical composition plays a great factor

⁶ Fine, "Composer/Choreographer."

in parsing the events throughout an already completed dance. Layers of time segments and subdivisions extend beyond the pulse of the dance, dividing into smaller subunits capable of recombining into new larger structures. This is most clearly evident with "(dis)Connect," wherein the pulse established in the choreography determined the musical hypermeter rather than the beats within a measure, restructuring the musical measures by groups of three even subdivisions of the pulse. This sense of subdivision also plays a key role in the time independent pieces: while small level subdivisions were not the primary concern, the larger dance forms were broken down into smaller sections for the ease of establishing distinct characters. Moreover, this fractal representation of time allows the process to be reversed in order to create larger forms out of smaller time units. This is evident not only through the musical accompaniment set to the "Prime" films, taking into account cuts and scene changes throughout the films, but was also a consideration when working with the hybrid relationship pieces in order to establish a musical connectivity between individual dance segments. Different time and phrasing structures may also be made to act over the same space simultaneously, stratified to depict distinct levels of time. The free sense of time in the time independent works allows for rhythmic phrases in both music and dance to act independently with only occasional moments of unity between the two media. The "Prime" films in particular display a number of temporal layers, with each dancer operating under unique prime number phrases and the music (as stated above) following its own time structure with regard to the film. The hybrid pieces explore this idea of stratified timings to different degrees as

well. This perception of time as a dimension capable of recursive subdivisions, recombinations, and layering is a key understanding engrained in composers from the earliest stages of training, a key observation that makes the proposed temporal relationship theory possible, and may prove to be a key strength when collaborating on any temporally based media.

Further Applications and Experiments

While the proposed temporal relationships were initially conceived as a purely logistic decision for this music/dance collaboration, the results and effects of such a consideration offer possibilities and applications that invite further experimentation. For instance, a number of the works in *Never Odd or Even* were composed either with the dance created first or with both made simultaneously; and there still remains the question of whether such temporal relationships will prove equally effective in collaborative relationships where the music is finished first, or if both media are created in isolation. Of particular interest is the notion of using a scoring technique similar to the hybrid relationship to produce the music first, as it potentially offers the chance for a composer to create a more modular architecture in order to guide the collaborators in a more flexible manner.

Additionally, while the experiments in temporal relationships for the concert primarily focused on the relationship between music and dance, and while video elements were incorporated in a number of dances, the resultant effect of the "Prime" films most

clearly indicates the benefit of these temporal models in collaboration with media other than dance. It begs the question as to the effectiveness of the three proposed temporal relationships with regard to other media that require music: e.g., live media such as stage plays, spoken word recitation, and puppetry, as well as fixed media such as film and animation. While seemingly similar when grouped under the veil of "performing arts" or "fixed media", the effective execution of time dependency and time independency may vary depending on the medium for which the music is composed. Thus experiments in the application of temporal relationships may yield modified techniques and scoring approaches more conducive to specific media. The nature of my proposed scoring for hybrid temporal relationship also warrants further experimentation in order to determine possible scoring/compositional approaches aside from cells and time space notation, and there stands a great likelihood that applications of hybrid relationships in particular with other media may warrant a different approach to scoring. While the video portion of the dances was often completed after the music, further experiments may also engage the composition of a musical element for multiple simultaneous media with regard to negotiating emphasis between said media.

The matter of live musical performance can also be further explored by incorporating technology beyond purely fixed media recordings: e.g., live electronics exploring the possibilities of automation, computer aided response, or other techniques resulting in the removal the human element from a musical performance. The hybrid relationship in particular offers the possibility of applications similar to score-following

programs, visual tracking of performers, and other interactive electronics that may drive particular state changes and event cues. Given the opportunity for flexible response and exchange between media in the hybrid relationship, the addition of response technology may augment an intermedia performance with an interactive musical component linked directly to significant actions of the performers while simultaneously cueing specific actions as well.

Outside of intermedia collaboration, the scoring approach used in "Stone.Fire.Light" and "Wind.Water.Air" showed positive results when used in a purely musical work. *Tikbalang*, a composition created after this collaboration, explored the possibility of using a similar approach to the activation and length of musical cells to evoke a more flexible relationship between two musicians - a stratification of time between two elements that is on this occasion solely musical. Rather than visual cues, sonic cues reached by either performer allowed for both musicians to initiate the next segment of the piece. With a distinct lack of measures, tempo marks, and clearly defined pacing, this piece allowed the performers to take the work at their own individual paces in order to evoke a sense of chase and urgency.

Example 5. Score excerpt from *Tikbalang*, a later work. A similar scoring approach was used to create only momentary alignments between the two musicians (designated by dotted bar lines).

The image shows a musical score excerpt with two staves. The top staff is a vocal line with the instruction "Ad lib breathing, like panting" above it. It begins with a dynamic marking of *f* and features a dotted bar line. The bottom staff is a percussion line, starting with "(snare on)" and a dynamic marking of *mf*. It includes a *subito p* marking and a section labeled "cresc. on high bongo". Above the percussion staff, there is a melodic line with a dynamic marking of *ppp* and the instruction "In the distance; Not in strict alignment with percussion" above it. A dotted bar line is placed between the two staves to indicate a momentary alignment.

Moreover, this piece provides a stepping stone for further modifications of the hybrid relationship with regard to scoring and application to other media. Should it be applied to live performance, this approach to scoring warrants further experimentation, with applications in works for larger groups as well as different media such as electroacoustic compositions.

Ultimately, the possibilities inherent in this approach to temporal relationships will require further exploration in order to determine the most effective applications through a number of collaborative models and media. The future of intermedia musical collaborations does not hinge on these studies; such experimental collaborations have happened before and will continue to happen. However, the awareness of temporal relationships inherent in an intermedia work allow for a number of different ways to represent time and pacing, which may prove effective to a given work. Whether the alignment is strict or flexible, whether the structure appears rigid or organic, the agreed parsing of time and events is key to achieving the desired cohesive effect.

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PART II

NEVER EVEN OR ODD

These scores represent only the pieces of the program designed for live performance. To reference the remaining electroacoustic works, please refer supplemental files.

44014

Score

For a Dance by Terryann Davis

Daniel Bernardo

$\text{♩} = 78$
Note: Vocalist must sing on an improvised language that has no inherent meaning or translation unless otherwise stated.

Cue piano gestures to the opening step of a dancer each time Cue to raised sweeping arm between two dancers

7 *n* Ah Ah

12

17 *pp* Ah Ah

© 2011 by Daniel Bernardo

2

22

Ah Ah

Pno.

27

Ah *gr*

Pno.

33

Pno.

38

mp accel.

pp mp

Pno.

Slightly Faster ♩ = 88

44014

3

Building sound as one dancer runs to the other, next section cues as the male dancer catches her

The musical score consists of five systems, each with a vocal line and a piano accompaniment (Pno.) line. The key signature has two flats (B-flat and E-flat), and the tempo is marked 'Slightly Faster' with a quarter note equal to 88 beats per minute. The dynamics range from *mf* to *mp*.

- System 1 (Measures 43-47):** The vocal line begins with a half note G4, followed by a whole rest. The piano accompaniment features a rhythmic pattern of eighth notes in the bass and chords in the treble, marked *mf*.
- System 2 (Measures 48-52):** The vocal line has a half note G4, followed by a whole rest. The piano accompaniment continues with the same rhythmic pattern, marked *mf*.
- System 3 (Measures 53-56):** The vocal line has a half note G4, followed by a whole rest, then a half note G4 with a slur and the syllable 'Ah'. The piano accompaniment continues, marked *mp*.
- System 4 (Measures 57-60):** The vocal line has a half note G4, followed by a whole rest, then a half note G4 with a slur. The piano accompaniment continues with the same rhythmic pattern.

4 44014
Slow, Grave ♩ = 60
 Enter as male dancer walks away from female dancer, pauses at the end of phrases

62 *p*

8^{va}
subito p

Slow pedal tone
 as duet continues

69 // *mp* // *p*

77 // *mp* // *p*

83

Pno.

88

Synch each iteration of this chord to the unison arm movement

Pno.

94

Sustain as long as possible, hold silence for the remainder of the dance.

Pno.

Score

Stone.Fire.Light

Improv Score to a Dance by Terrynan Davis

Daniel Bernardo

Opening Rise: Sync to each dancer moving form the opening pose, one at a time: ~ 30".

Swaying, Backs to Audience: ~ 30"
Alternate between *sensa vibrato* (SV) and *molto vibrato* (MV)
SV → MV → SV → MV

Sync to rising dancers
To ord

Electric Guitar

Piano

Pedal as needed

Cluster (on strings)

Circle Walking: Cue next downbeat of the pattern as movement is transferred from one dancer to the next; ~ 15". Sync to third dancer rises twice

Ascending scalar pattern on these pitches

Restart climb again

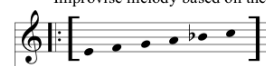
Restart climb again

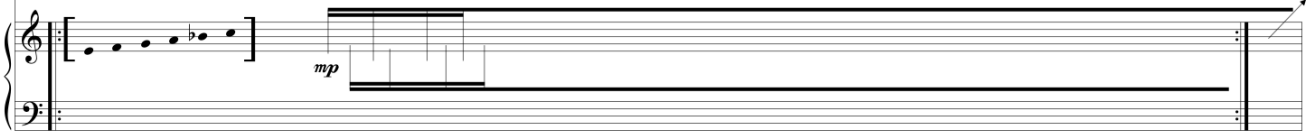
E.Gtr.


Pno.

Group Movement Across Floor: Repeat as necessary, transition out as one dance starts to walk away from the group; ~ 45"

Improvise melody based on these pitches

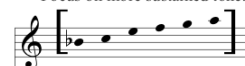
E.Gtr. 

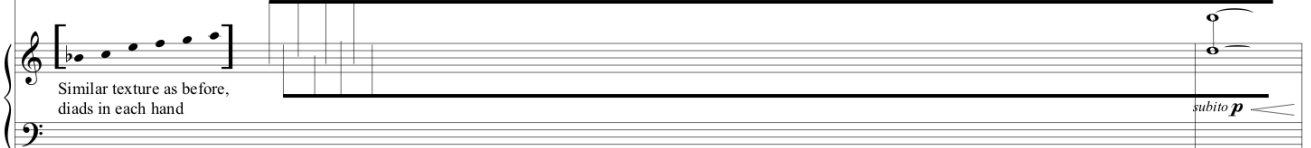
Pno. 

Ascend as she wals away 


Dancer Solo: Focal point on dancer isolated from trio. Continue until dancers move toward the soloist; ~ 45"

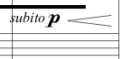
Focus on more sustained tones

E.Gtr. 

Pno. 

Similar texture as before, diads in each hand

Dancers suspend together, about to run. 

subito **p** 

Unison run to climax of energy: Build anticipation especially during the suspended motion; ~10"

Release of Suspended Energy: Transition to next section when all become stationary; ~10"

The score consists of two systems. The first system is for E.Gtr. and Pno. The E.Gtr. part starts with a treble clef and a key signature of one flat. It features a series of quarter notes with a 'subito p' dynamic marking and a 'rall.' tempo marking. Above the staff, a bracket labeled 'Build anticipation' spans the first four notes. The Pno. part is in grand staff (treble and bass clefs) and features a similar series of notes with 'subito p' and 'rall.' markings. A bracket labeled 'widen the register; hands move farther apart' spans the first four notes. A vertical dashed line separates the two systems. The second system continues the E.Gtr. part with a 'rall.' marking and a bracket labeled 'improvise as needed'. The Pno. part continues with a 'rall.' marking and a bracket labeled 'Big release of energy and slowly loose momentum in relation to the dancers; diminuendo'. An arrow points to the right across the Pno. staff.

Stationary swaying: gradually calming and dying down

Lights going down

The score consists of two systems. The first system is for E.Gtr. and Pno. The E.Gtr. part starts with a treble clef and a key signature of one flat. It features a series of notes with a 'To E-bow' instruction. Above the staff, a bracket labeled 'Keep dying down in relation to their dissipating energy' spans the first four notes. The Pno. part is in grand staff and features a series of notes with a 'continue diminuendo' instruction. A vertical dashed line separates the two systems. The second system continues the E.Gtr. part with a 'Stationary swaying: gradually calming and dying down' instruction and a bracket labeled 'Lights going down'. The Pno. part continues with a 'cluster (on strings)' instruction and a bracket labeled 'Stationary swaying: gradually calming and dying down'. An arrow points to the right across the Pno. staff.


Wind.Water.Air

An Improv Score to a Dance by Terryann Davis

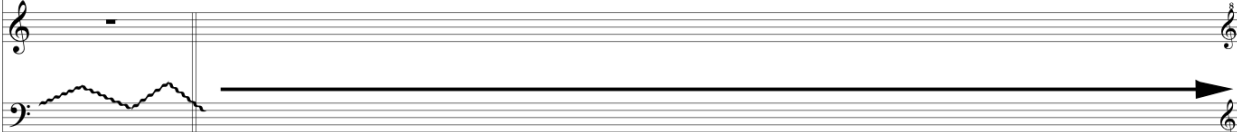
Daniel Bernardo

Score

As lights are going up **Swaying Bows: Focus phrasing based on the transfer of momentum as dancers contact, like Newton's Cradle; ~1'20"**

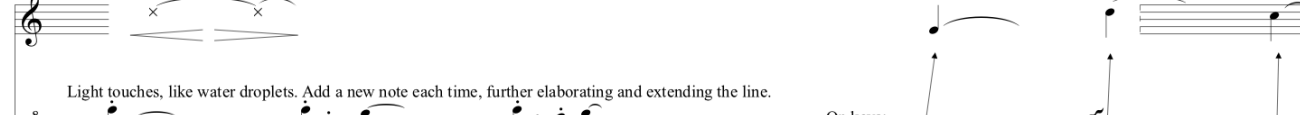
Voice 

Breathy inhale/exhale on significant moments of contact. Inhale as dancers bow forward, Exhale as dancers lean back. Following the sense of energy and tension that is transferred.


Piano 

Slow sweeps on the strings in the highest registers like windchimes; pedal throughout

Conjoined Walking: Transition out as they detach and start to move unconnect to one another; ~20" **Newton's Cradle: Synch rising sweep to the path of each dancer at her turn.**

Voice 

Light touches, like water droplets. Add a new note each time, further elaborating and extending the line.

On keys: 

Slightly lower, build like light waves on the sea.

2

Unison Movement, Back to Audience: ~15" **Canon Movement: pace phrases based on the dancers returning to the extended reaching pose: ~15"**

Neutral Syllable "Ah" Extend Sighing Wind. Water. Air Pitches Approximate

mf Slowly elaborate on motive, growing upward

Synch entrances with the reaching movement of dancers.

Improvise contour, unglating speed

Voice

Pno.

Unison Movement Across Floor: Improvise echo calls in the voice and fluid perpetual motion piano, elaborate and add to the phrase over time: ~30

Improvise sighing as needed

Expand range, add modal regularity


Increase speed, suggesting a compound subdivision (triplets)

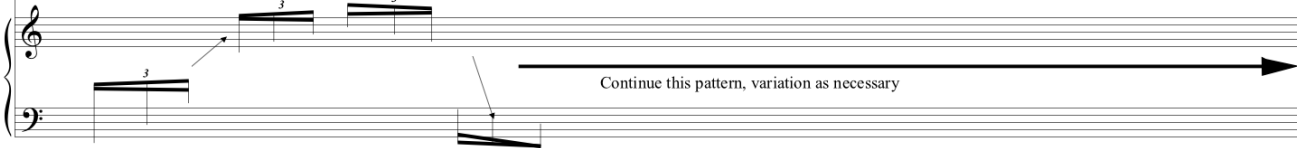
Voice

Pno.

Circular Spinning: Improvise melodic contour and accompaniment on this state, vary in response to the physical activity of the dancers; ~!

Improvise sighing motion in the voice: Ah and Oooh, match swells to the energy of the dancers

Voice 


Pno. 


Acceleration and deceleration over this pattern, undulate the dynamics and density to match the level of physical activity in the dance

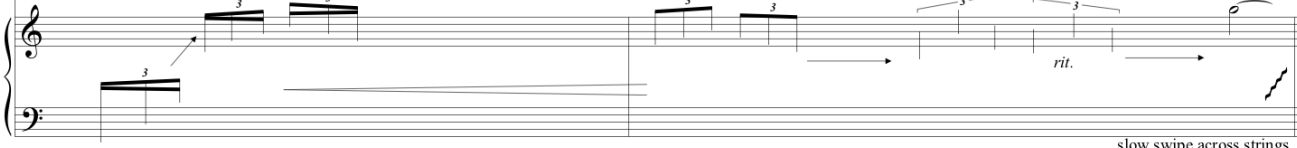
Continue this pattern, variation as necessary

Circular running: Increase speed and energy to match dancers

Return to swaying: Sudden disperse of energy, very soft.
diminuendo to a simple sighing motion, grow more lethargic

Soft sigh 

Voice 

Pno. 

Reduce down to a short ostinato pattern and diminuendo

rit.

slow swipe across strings