

Composition in an Expanded Field of Performance:
Experimental Music in Collaboration with Contemporary Dance

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Abstract

Collaboration with dance is commonplace in experimental and computer music, but there is little in the way of published discourse about composing for dance or working with choreographers. In this dissertation I offer what I hope may be a few new footholds for building more substantive, useful future discourse on collaboration with dance in our field.

Part One tackles two dominant threads in the extant discourse: the paradigm of separation developed by John Cage and Merce Cunningham (Chapter 1) and the interactive technology paradigm of integration (Chapter 2). The Cage-Cunningham paradigm, as it turns out, is only about separation on its surface. Their “non-collaborative” method arises from a sense of music-dance parity within a unified field of theatrical possibility. I explore the implications of this paradigm by considering Cunningham’s *Sounddance* (1975), with music by David Tudor, as well as a number of edge-cases or “failures” of non-collaboration involving music for the Cunningham company by Christian Wolff, Nam June Paik, and Charlemagne Palestine.

Conversely, computer music collaborations with dance involving interactive technology are frequently problematic in how they seek a more complete or satisfactory integration of the two forms. They tend to subvert dance’s autonomy in a way that works

against collaboration. I investigate the interactive dance paradigm through a review of computer music literature on dance as well as analysis of several interactive dance works.

In Part Two, I discuss my music for a trilogy of evening-length pieces by choreographer Eleanor Bauer: *A Dance for the Newest Age* (2011), *Tentative Assembly* (2012), and *Midday and Eternity* (2013). Rather than distancing the music from the dance in this discussion, I situate the music in the interdisciplinary and multi-sensory experience of these works from an audience perspective. I hope to show that collaboration in an *expanded field of performance* need not come at the expense of the concerns of composition proper. Rather, dance can and should be a deep store of resources for the adventurous composer.

Contents

Preface.....	vii
Acknowledgements.....	xiii
Introduction.....	1
Part One. Two Paradigms	8
Chapter 1. Collaborative Non-collaboration.....	13
Chapter 2. Interactive Dance.....	61
Part Two. Music for Eleanor Bauer’s Triangle Trilogy.....	89
Chapter 3. A Dance for the Newest Age (the triangle piece)	98
Chapter 4. Tentative Assembly (the tent piece).....	116
Chapter 5. Midday & Eternity (the time piece)	137
Conclusion	155
Appendix A. Video Documentation of <i>A Dance for the Newest Age</i>	166
Appendix B. Video Documentation of <i>Tentative Assembly</i>	168
Appendix C. Video Documentation of <i>Midday & Eternity</i>	170
Appendix D. Performance List	172
Appendix E. <i>Triangle Oscillators</i>	173
Appendix F. <i>Science On My Mind</i>	180

Appendix G. <i>Court Dance Guitar</i>	188
Appendix H. <i>Head, Heart, Guts</i>	190
Appendix I. Early sketch of Liz Kinoshita's <i>Dear Ms. Representative</i>	195
Bibliography	197

Preface

My motivation for this study of music-dance collaboration traces back to two moments in the process of making music for John Jasperse's *just two dancers* in New York City in 2003.¹ These moments raised questions that have been on my mind ever since, but which I am only now a decade later attempting in earnest to answer in working on this dissertation.

The first moment occurred during a discussion that John and I had in an early rehearsal for the project. I had just brought in some initial sketches, and he was feeling out what I was like as a collaborator. At the time I was still in the thrall of the ideal that “serious” dance and music should be able to stand each on their own. To my mind there was nothing essential about what might make music good for dance. Good concert music would make good dance music and vice versa. John challenged this idea, proposing that if the dance and music in a performance are separable then this might in fact be a sign of a problem in the work, that the elements may not be sufficiently integrated.

1. The dance was a duet between Jasperse and Juliet Mapp, and I created the music in collaboration with Jaime Fennelly and Regina Sadowski. See Deborah Jowitt, “Points of View,” *The Village Voice*, June 11, 2003; Robert Greskovic, “Two Dancers, 15 Platforms, Many Mirrors,” *The Wall Street Journal*, May 29, 2003; Jennifer Dunning, “Dance’s Musical Heartbeat,” *The New York Times*, June 6, 2003, accessed March 17, 2015, <http://www.nytimes.com/2003/06/06/movies/critic-s-notebook-dance-s-musical-heartbeat.html>.

John had a history of integrated collaborations with musicians such as James Lo, that made innovative use of sound in performance that went far beyond cleanly separable “dance” and “music.” In *Excessories* (1995), for instance, Jasperse sings while wearing a bondage mask fitted with a hidden microphone. In my collaborative work since then I’ve come around to something closer to this kind of integrated way of thinking about music and dance, albeit via my own path. But in *just two dancers*, separation between music and dance was dramatized in what now seems like a rather ham-fisted dramatic gesture: Jasperse plays a Beastie Boys track from a boombox while I and the other two musicians abandon our stations at stage right and exit as if in silent protest at the incursion of familiar popular music into our otherwise experimental, drone and noise-oriented soundscape. As I recall, the boombox was my solution to what I perceived as the “problem” of John’s desire to use this track. I wasn’t about to try to stop John from using this music interspersed with mine, but I preferred if it came from a different set of speakers, and also if it was clear who exactly was pressing play. Today I might be open to a wider range of possibilities in such a situation. The question of integration versus autonomy in collaboration appears throughout this dissertation in a variety of ways.

As part of the *just two dancers* project, we spent time in residence at Hollins University in Virginia, home to a vibrant and progressive dance program presided over by Donna Faye Burchfield, who was at the time also the director of the American Dance Festival. As part of the residency we taught workshops and participated in critiques of student work. The second moment I’d like to recall now occurred during one of these

critique sessions. A student showed a solo that involved repetitive, minimalistic movement set to loud, rhythmic pop music. In an attempt to be helpful I suggested that this kind of music-dance relationship might be considered cliché. I felt like I had seen this musical tactic before in a few recent performances in New York City, and though effective, it also seemed too easy. It was starting to feel like a fashionable formula.

In the context of a critique session for choreography students I saw my role primarily as pushing the students to explore more possibilities for accompaniment beyond what was obvious. They shouldn't stick with the first music they thought of, or their favorite pop track of the moment, or the music they choreographed to—a phenomenon known colloquially in music for dance as in music for film and advertising as “demo love.” They should explore several possibilities—including non-obvious ones—before settling on a music choice. As a composer I perhaps had a chip on my shoulder about the use of “canned” music in general: every choreographer using an iPod was one less choreographer engaging in collaboration with a composer. As the only musician in a roomful of dancers and choreographers, it's easy to feel a responsibility to defend music's territory in the field of dance. In 2003 the iPod was still a somewhat new threat to the role of the composer in the dance studio, not to mention the increasing ease of digital audio editing on personal computers. Choreographers no longer really needed composers to make music to fit a dance either for the purposes of content or for time structure.

My basic conception of music-dance relationship at the time was built on the insight of John Cage and Merce Cunningham, that any music can potentially be paired with any dance. Further, both music and dance should be of the highest quality. They should be able to stand on their own. Dance in silence should be a possibility, and so should music without dance. And it might also be interesting to see the same dance repeated with different music or the same music with different choreography. Even if we're not any longer interested in dogmatic application of chance procedures, we should acknowledge that chance can be helpful in working through difficulties in creative process. Ideally, I thought, choreography should be constructed in silence so as to withhold attachment to music that would later get in the way of experimentation with different accompaniment options. And the dancer should practice a disciplined deafness to the music, or, better yet, an extreme flexibility in her or his relationship to it. Such a flexibility with regard to music would facilitate the greatest range of possibilities later on in the process when trying out different music choices.

By that point I had already composed a number of works for dance including a few professional commissions, and I felt that the above views were reinforced by my experience as a collaborator. It was frustrating as a composer when I encountered choreographers who had strong "demo love" for the music they used in the studio. It forced my hand when it came to contributing something new by adding a musical layer to the performance. In the worst case—and any musician who has done significant work with choreographers will recognize this situation—a choreographer would hand me a

track and ask me to make something resembling it. I was being hired simply because they could not secure rights to the music they really wanted. I only encountered this kind of situation a few times, and those collaborations needless to say were short lived. Most of the time this kind of issue was more subtle. Perhaps the choreographer wasn't attached to music that had been used in the studio, but one of the dancers was. And each time I brought in a new musical idea, the dancers had problems executing the choreography because they couldn't ignore the new music long enough to accommodate it. I learned that attachments of this sort could grow quickly with sketches early in a process, so I knew to be careful in handing collaborators recordings to work with in the studio. I might be stuck down the road with anything that I let them work with at the beginning. So as a teacher I wanted to help choreography students develop more flexible and open relationships with music. I felt I was doing a service to their future musical collaborators.

But to my surprise, Donna Faye leapt to the student's defense. She turned the question back on me, asking whether live electronic music for dance wasn't also something of a cliché. I had no idea why she might turn the tables on me in that moment and shift the discussion to my own practice of composing for dance rather than the student work we were ostensibly there to critique. I assumed she was simply being overprotective of her student from the insensitive criticism of an outsider.

Later on we were discussing the incident in her office and in a conciliatory gesture she took a copy of bell hook's *Art On My Mind* off her shelf, inscribed it to me, and sent it back home with me. Since then I suspect I have come around somewhat to the

point of view that she meant to suggest by gifting me a book of essays which discuss art from an intersectional feminist perspective. The relationship between music and dance is often far from arbitrary, even when that relationship is the result of a dancer—with or without any particular musical training, expertise, or the approval of a composer or musical director—choosing a track from her iPod. If I had that critique session to do over again, I would ask the choreographer (a young black woman) why she chose that particular track (by a contemporary black artist whose work I did not know), and I (a white man, at the time only a year or two older than the student) would listen to her answer closely. Issues of identity and power are deeply embedded in the relationship between music and dance, another theme which runs throughout this dissertation. Listening is also a theme, not just to music and sound, but also to dance and to the broader context of social, cultural, and multisensory experience.

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Thanks first of all to my committee. My chair Ted Coffey has provided thoughtful engagement with this material at every stage. I was first drawn to Professor Coffey as an advisor because of his work in the area of “composing context,” but over the course of my time at UVa, he has also become increasingly engaged with dance through his work with Bill T. Jones as well as Paul Matteson, Jennifer Nugent, and others. His insights as an artist, collaborator, and thinker have enriched and helped to clarify my own thinking on music and dance. My other committee members Michelle Kisliuk, Judith Shatin, and Worthy Martin have offered spirited engagement and much valuable advice. Kim Brooks Mata of UVa’s dance program has provided much-needed insight from that perspective.

Thanks to Kevin Davis, Paul Turowski, and Kristina Warren for a biweekly research support group this year, and to my other graduate student colleagues in music, including Jon Bellona for references on interactive dance and performance. Vilde Aaslid provided insightful comments on a late-stage draft. Thank you to Juraj Kojcs for a stimulating seminar on Music and Gesture (hovering around the edges of the material on gesture discussed in Chapter 2). And thanks to the staff of the Music Library, especially Erin Mayhood for an early and influential research consultation.

Many others have generously discussed dance and collaboration with me along the way: thanks in particular to Ana Keilson for numerous discussions of Merce

Cunningham and writing on dance, and to Sumanth Gopinath for the suggestion of Richard Sennett. Thanks to attendees of SEAMUS 2014 at Wesleyan, where I presented an early version of the material on Merce Cunningham's *Sounddance*, and also to the International Guild of Musicians in Dance and the South Central Graduate Student Music Consortium. Thanks to Jon Moniaci and Stephen Rush, my bandmates and dance composers' support group.

This project would have of course been impossible without the work of Eleanor Bauer and all of our collaborators on the pieces discussed in Part 2 (complete credits in Appendix A, B, and C). Eleanor is an inspiring artist, a great friend, and a generous collaborator. I have had the good fortune of working with many wonderful choreographers, but I should mention in particular Milka Djordjevich, with whom I worked on several projects during the time covered by this dissertation. During this same time I also made music for two installments of performance artist Deke Weaver's *Unreliable Bestiary* series, co-directed with choreographer Jennifer Allen. Though these pieces are not discussed here, my thinking about music and dance has grown through our work together as well as numerous conversations over the years.

Last but not least, thanks to my parents John and Leslie for their unwavering support, to Marissa my intentional sibling, my humor committee Dave and JZ, and to the rest of my expanding family field: Emily, Vive, Janice, Peter, and DeeDee for patience, perspective, and excellent listening.

Introduction

Collaboration with dance is commonplace in contemporary experimental and computer music, but there is little in the way of published discourse about composing for dance or working with choreographers. Is this a gap in the literature waiting to be filled, or a sign that music for dance is not worthy of study as an isolated topic? In many of the world's cultures as well as in much popular and social music, dance is so integrated that "collaboration" between the two doesn't merit separate discussion. But this is not the case when it comes to composers and choreographers in the context of art music and concert dance. Collaboration, while common enough in some contexts, is also a special case in the broader scheme of art performance. Most concerts of contemporary experimental and computer music do not involve dance. Rather, I suspect that at least part of the reason for this gap in the literature is that—though we're usually too polite to say it out loud let alone publically or in print—music for dance has a bad reputation.

Musicians have tended to think of dance somewhat paternalistically as a poor sister art, and a number of false and harmful assumptions proceed from this attitude. Stereotypically, dance is always subordinate in one way or another to music: dance cannot exist without music in the same way that music can exist without dance. It's less cerebral or intellectual, even illiterate in clinging to oral communication rather than written scores. True, dance notation exists, and dance films are produced, but there is nothing on the scale of the music publishing and recording industries. Dance is far less

well-established in cultural and academic institutions. Dance departments have less funding and fewer PhDs. Some are still attached to physical education rather than the arts.

Being lower on the scale of Eurocentric and elite cultural distinction, concert dance is less firmly distanced from the popular stage than concert music is from popular music. And what's worse, serious dance is always precariously close to burlesque and its more lascivious cousins. If we don't want our bourgeois or so-aspiring sons and daughters to grow up to be musicians, then we certainly don't want them to grow up to be dancers.

But to continue elaborating on music's false assumptions about dance, it's not all bad. Dance classes are at least a source of minimal employment for percussionists and pianists. Accompanying a modern dance class is a rare daytime gig. It doesn't pay as well as a wedding, but it can be steady work.

For composers, there's an attraction as well. Modern dance choreographers are a known source of small commissions for "strange" music that would otherwise have no commercial potential. But these commissions are also known to have strings attached: requirements with regard to mood, tempo, genre, or formal structure. And composers know that they can likely expect their music to be revised or edited in nonsensical anti-compositional ways to fit the requirements of a dance. Conversely, but less commonly, inviting a dancer to choreograph a musical piece can be an interesting way to spice up an otherwise sleepy concert of contemporary compositions.

But the contemporary dance concert in general is not thought of by musicians as a place to discover interesting music. There's the distraction of the dance for starters, but also the aforementioned nonsensical editing. Movements of classical works are heard out of context and perhaps even layered with sound effects. Programs often list musical accompaniments by the name of the composer only. Musically literate audience members wince (and perhaps click their tongues in disapproval) when they read bizarre credits such as "Music by Cat Stevens, Bach, Philip Glass, and Requiem for a Dream Soundtrack." When it comes to music, dance stands for a kind of useful enthusiasm that is poisoned with misunderstanding and bad taste.

Expanding on the effects of dance's stereotypical lack of intellectualism, in my experience, composers do not think of contemporary dance as a place to find ideas. Painting, sculpture, and literature are better choices in the arts. Better still: philosophy, critical theory, or neuroscience. We are not likely to see a quote from Yvonne Rainer in a program note. It would do less to lend the musical work authority than even, say, a quote from Robert Rauschenberg. Rather, when dance enters the discourse of composition it is in the form of vague metaphors. Dance is the image of that which is primal, natural, intuitive, ineffable, social, emotional, and free. It's what cannot be confined to the page of a printed score or to the seat of a sedate concert music audience. Composers *choreograph gestures* when they seek to breathe life into the notes on a page, or, perhaps, in computer music when they engage the possibilities of sound moving in space.

Hopefully most of these assumptions about dance sound ridiculous, especially when stated so plainly. But what little there is in the way of composition and computer music discourse that goes beyond vague metaphors and discusses dance in any detail is still haunted by music's suspicions of its poor, ill-reputable sister. One of the few (if not the only) well-known postwar composers to write anything of significance about working with dance is John Cage, and he is known for developing an approach with Merce Cunningham in which music and dance are created not collaboratively, but in isolation. This method saves the composer from any of the usual "distractions" of working with a choreographer, such as writing to specified counts or editing music after the fact. This approach also distances the final result from anything remotely resembling popular entertainment. In a more recent example, Barbara White rallies against the anxieties felt by composers about closeness to dance in the form of "Mickey Mousing" or cartoonish close alignment of music and dance gesture.² Such is the power of dance's bad reputation as an art that composers, it seems, must defend themselves if they want to allow dance to influence what they compose. Composers don't apologize for drawing inspiration from modernist poetry when writing a song cycle, but modern dance is another story.

Computer music literature on dance tends to assume that dance and music have seldom been combined with much success, but that new technologies may help us unite

2. Barbara White, "'As If They Didn't Hear the Music,' Or: How I Learned to Stop Worrying and Love Mickey Mouse," *The Opera Quarterly* 22, no. 1 (January 1, 2006): 65–89.

the forms. Such work insulates itself from the danger of associating with dance as we know it by envisaging “interactive dance” as a new genre. The focus here is on interactive system design and parameter mapping rather than compositional or choreographic concerns about music-dance relationship in general. Dance is not so much an equal, interdisciplinary partner in these investigations, but a new territory to be either liberated (freed from the music) or colonized (by turning the dancer into a musician).

In this dissertation I offer what I hope may be a few new footholds for building a more substantive, useful future discourse on collaboration with dance in our field. Part One tackles two dominant threads in the extant discourse: the Cage-Cunningham paradigm of separation (Chapter 1) and the interactive technology paradigm of integration (Chapter 2). The Cage-Cunningham paradigm, as it turns out, is only on its surface about separation. Their “non-collaborative” method arises from a sense of music-dance parity within a unified field of theatrical possibility. I explore the implications of this paradigm by considering Cunningham’s *Sounddance* (1974), with music by David Tudor, as well as a number of edge-cases or “failures” of “non-collaboration” involving music for the Cunningham company by Christian Wolff, Nam June Paik, and Charlemagne Palestine.

Conversely, computer music collaborations with dance involving interactive technology are frequently problematic in how they seek a more complete or satisfactory integration of the two forms. They tend to subvert dance’s autonomy in a way that works against collaboration. I investigate the interactive dance paradigm through a review of

computer music literature on dance as it appears in journals such as *Computer Music Journal* and *Organised Sound* as well as at conferences such as the *International Computer Music Conference* and *New Interfaces for Musical Expression*. I also analyze a number of interactive dance works that are mentioned frequently in this literature, listening to and watching the dance and music themselves rather than taking authors' claims about them at face value. As has been suggested previously, Donna Haraway's well-known essay *A Cyborg Manifesto* holds much potential as framework for considering the possibilities of interactive dance.³ I look to Haraway's reading of feminist science fiction as a source of possible responses to the challenges of interactive dance.

In Part Two, I discuss my music for a trilogy of evening-length pieces by choreographer Eleanor Bauer: *A Dance for the Newest Age* (2011), *Tentative Assembly* (2012), and *Midday and Eternity* (2013). Rather than distancing the music from the dance in this discussion, I situate the music in the interdisciplinary and multi-sensory experience of these works from an audience perspective. I hope to show that collaboration in an *expanded field of performance* need not come at the expense of the

3. Curtis Bahn, Tomie Hahn, and Daniel Trueman, "Physicality and Feedback: A Focus on the Body in the Performance of Electronic Music," in *Proceedings of the 2001 International Computer Music Conference*, 2001, 44–51, accessed September 1, 2014, <http://quod.lib.umich.edu/cgi/p/pod/dod-idx/physicality-and-feedback-a-focus-on-the-body.pdf?c=icmc;idno=bbp2372.2001.058>.

concerns of composition proper.⁴ Rather, dance can and should be a deep store of resources for the adventurous composer.

To the extent that dance has a bad reputation in the arts, this is a symptom of our patriarchal, technophilic, capitalist, and neocolonial society. And to the extent that we as composers are interested in questioning or even resisting patriarchy, technophilia, and capitalism, we have much to gain by taking an interest in dance. In our collaborative encounters with dance we can also find resources to confront structures that undergird composition and computer music practice: the ideal of the autonomous work of absolute music; the romantic genius; obsession with the written over the oral and the improvisatory; and the appeal of scientific and pseudo-scientific research models.⁵ Collaboration is a provocation to step outside of our field and also outside of ourselves.

4. The term “expanded field” was initially taken from Rosalind Krauss, “Sculpture in the Expanded Field,” *October* 8 (Spring 1979): 30–44. I have ended up using the idea of “expansion” more broadly, however, in a way that does not follow an analogy to Krauss’ taxonomy for minimalist sculpture and land art. The term also suggests a possible connection to Gene Youngblood, *Expanded Cinema* (New York: E.P. Dutton, 1970).

5. Lydia Goehr, *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music* (Oxford: Oxford University Press, 1994).

Part One

Two Paradigms

In Part One, I discuss two approaches to music-dance collaboration which I characterize for the most part as standing in opposition to each other: the separation of Cage-Cunningham and the integration-through-technology of interactive dance. But these worlds do not always see themselves as unconnected.

Merce Cunningham has been known as an innovator in the use of electronic music for dance since his choreography for the US premiere of Pierre Schaeffer's *Symphonie pour un homme seul* in 1952.⁶ His engagement with technology was not limited to electronic music for his dances, however: he began choreographing with animation software in the 90s, leading to increasing complexity in his movement vocabulary. And motion capture was used to create visual elements for *Biped* in 1999.⁷ Cunningham's attitude toward technology was consistently oriented towards discovering new possibilities, for instance by looking for movement in digital figures not readily available in actual human bodies. He sought to drive productive wedges into his creative

6. David Vaughan, *Merce Cunningham: Fifty Years* (New York: Aperture, 1999), 63–64.

7. Ann Dils, "The Ghost in the Machine: Merce Cunningham and Bill T. Jones," *Performing Arts Journal* 24, no. 1 (2002): 94–104.

process rather than use the computer as a tool to increase integration of or control over various elements of a piece.

Cage and Cunningham's *Variations V* (1965) is often cited as an historical precedent for current work with interactive dance technology. For *Variations V*, Robert Moog designed a system of large Theremin antennas that would allow the movements of the dancers to serve as an input for live electronic music produced by Cage, Tudor, and Gordon Mumma.⁸ Frequently left out of discussions of this piece is the fact that Léon Theremin himself had experimented with a full-body-scale instrument decades earlier, which he referred to as the “terpsitone” or “ether wave dance stage.”⁹ Theremin's goal was to allow a dancer to play melodies, and to this end he gave the device's single parameter a tempered discrete scale rather than a continuous scale. But even with this modification, the device was too difficult to control. He abandoned the project after being unable to find a dancer who could learn to play it. For Cage and Cunningham, however, this unpredictability was a resource. Sensing the dancer's movements electronically was a new way of relating music to dance indeterminately. If Cage had sought to create a specific pre-planned relationship between music and dance this would have involved not

8. For thorough discussion of *Variations V* grounded in historical documents and interviews with participants, see Leta E. Miller, “Cage, Cunningham, and Collaborators: The Odyssey of *Variations V*,” *Musical Quarterly* 85, no. 3 (2001): 545–67; and Elizabeth Hoover, “*Variations V*: ‘Escaping Stagnation’ through Movement of Signification,” *Current musicology*, no. 90 (2010): 57–75.

9. Albert Glinsky, *Theremin: Ether Music and Espionage* (Urbana: University of Illinois Press, 2005), 143.

technology, but simply watching the dance. Cunningham's contribution to the work, after all, was not improvised or open in its form. It was entirely choreographed.

When interactive dance researchers cite *Variations V* they tend to twist their memory of it to fit the particular narrative that will support their current research. For example, one team describes *Variations V* as follows: "The Cage-Cunningham collaboration achieved equality by transferring control from both composer and choreographer directly to the dancer."¹⁰ They go on to characterize the piece as an "integrated work that is not improvisatory."¹¹ As discussed above, *Variations V* was anything but "integrated" and the intentional unpredictability of its construction did not afford the dancers "control." (And certainly not control at the level of formal composition.) Even if the dancers were able to learn the system well enough to predict sonic effects—and accounts from the dancers suggest that they were not able to do so—then they would not have had an opportunity to exercise such control in the performance because the piece's choreography did not permit improvisation.¹² This absence of control does mean that the music-dance relationship in this work was not improvisatory, but

10. Roberto Morales-Manzanares et al., "SICIB: An Interactive Music Composition System Using Body Movements," *Computer Music Journal* 25, no. 2 (July 1, 2001): 25–36.

11. *Ibid.*, 25–26.

12. Miller, "Cage, Cunningham, and Collaborators: The Odyssey of Variations V."

neither was it “composed” in any conventional sense of the term. A novel technology was employed not to integrate music and dance, but to complicate their relationship.

By contrast, researchers like composer and interactive dance practitioner John Toenjes—who stands out in this field as being particularly well-informed about the history of music in modern dance—cite *Variations V* in a more nuanced fashion. But even while acknowledging the work in its proper context, Toenjes does characterize it as a rudimentary initial experiment plagued by limitations of pre-digital technologies:

The approach to art as process of the experimental artists of the 1950s and ‘60s was well suited to the conception of what is commonly considered the first interactive dance, *Variations V* (1965), by John Cage and Merce Cunningham. The dancers’ movements amid Theremin-like sensors on light-sensing stands, caused a sonic reaction from an array of tape recorders and other electrical boxes manned by several musicians. The rudimentary sound consisted mainly of sine tones, white- and other noises, and some sampled text. However, the disconnection between the sound score and the specifics of the choreography keeps it from being considered a truly interactive work in the strictest sense, or at least makes it a fledgling example.¹³

Toenjes understands that the Cage-Cunningham paradigm does not in fact exemplify the paradigm of interactive dance. He goes on to point out that current interactive dance practice has more in common with the pre-Cage approach of well-known dance composition teacher and Martha Graham composer Louis Horst. Truly interactive dance can in fact be seen by its current practitioners as a corrective to the separation of music and dance advocated by Cage and Cunningham.

13. John Toenjes, “Composing for Interactive Dance: Paradigms for Perception,” *Perspectives of New Music* 45, no. 2 (Summer 2007): 35.

In the next two chapters I argue that the situation is more complicated. Looked at more closely, Cage and Cunningham is actually as much about interdependence as independence between music and dance. And the interactive dance world would do well to recognize that separation and integration are not a linear continuum but a dialectic. Obliterating distinctions between music and dance entirely has the danger of also suppressing much of what we can hope to gain through collaboration with choreographers and dancers.

Chapter 1

Collaborative Non-collaboration

One key experience that shaped and inspired my initial engagement with the contemporary dance field was a performance by the Merce Cunningham Dance Company in Ann Arbor in 1999.¹⁴ The program closed with the 1975 piece *Sounddance*, with music by David Tudor. The ending of this piece in particular is quite powerful. The dancers exit one by one over the course of a few minutes through an opening in the center of the décor, an oddly opulent, mustard-gold curtain, lavishly draped. This leaves Robert Swinston (in the role originally performed by Cunningham) alone on the stage as Tudor's swirling, relentless music, saturated with receding layers of dense, quick detail, continues at rock-concert volume. The solo dancer approaches the exit in a series of quick turns, as if being sucked into the curtain (perhaps in keeping with the way the dancers' entrances seem similarly propelled by an unseen force). He disappears into the folds, the music suddenly stops, blackout. I felt as if the air had been sucked out of the room and perhaps out of my lungs as well. The applause that followed this moment of loud silence was

14. Merce Cunningham, "Merce Cunningham Dance Company" (presented at the University Musical Society, Ann Arbor, MI, February 12, 1999). The description and analysis that follows also rely on the 2007 Charles Atlas film, which is available in the public section of the "dance capsule" for the work on the company's website: "Merce Cunningham Dance Capsules: Sounddance," accessed January 26, 2014, <http://dancecapsules.mercecunningham.org/overview.cfm?capid=46037>.

truly cathartic. There's a component of relief for those of us who stuck it out. More than a few ran for the exits, I assume due to the volume and perhaps also the unfamiliarity of the music.

This performance made an impression on me. It had an especially big influence on my early attempts at creating live computer and electronic music for dance. There was also, however, a contradiction in my experience of the piece that puzzled me: how to reconcile my sense of the deep integration between music and dance in works such as *Sounddance* with the notorious Cage-Cunningham approach to collaboration—rehearsing in silence and adding the music only at the first performance. Does the work succeed because of or in spite of the separation and self-sufficiency of the elements?

In this dissertation, as I consider dance collaboration in the context of the field of experimental composition, this old question takes on new urgency. However we might understand Cunningham's musical aesthetic, there can be no question of the huge influence of his company in the field of experimental music, if only as a commissioning and presenting institution. For sixty years the company commissioned and produced performances of new works by contemporary composers. A list of these composers reads like a who's-who of several generations of the postwar avant-garde. New World Records released a 10-disc boxed set of this music—and this was simply a selection of the works that were not already commercially available elsewhere.¹⁵

15. *Music for Merce (1952-2009)*, 10 CDs, vol. 80712 (New World Records, 2010).

And I think the Cage-Cunningham paradigm holds a prominent place in how our field understands collaboration with dance for another reason. The notion that music and dance should each “stand on their own two legs” rather than one being beholden to the other has a seductive logic. It seems to promise all of the joys and benefits of collaboration without any of the potential pitfalls or compromises. No more writing to a particular sequence of counts as in a conventional ballet. No more finishing the music far enough ahead of the premiere for the dancers to rehearse. No more editing the finished music to fit changes in the choreography. The Cunningham repertoire seems to provide a substantial body of evidence that the labor of collaboration is a foolish waste of time. What does this mean for contemporary composers as they embark on collaborative projects?

Cage-Cunningham would seem to suggest that as composers we can have a musical work choreographed successfully without relinquishing our autonomy to a collaborative process. Conversely if we seek a closer, more integrated relationship with dance, it would seem that Cage-Cunningham could have little relevance. And the fact that the music and dance were composed in isolation in Cunningham’s works—sharing only an agreed upon duration—suggests to scholars that analyzing them as multimedia would be misguided. For instance, in Nicholas Cook’s excellent book *Analyzing Musical Multimedia*, Cage and Cunningham come up only in passing, as an example of separation

between media that is so extreme or complete that it doesn't merit discussion.¹⁶ Cage and Cunningham are the epitome of *Unmusical* multimedia. There's far more work on multimedia—that is, work that seeks to understand how we experience multiple sensory streams together—that doesn't mention Cage-Cunningham at all, or that simply repeats the artists' own accounts of their process without following through to what impact this process has on our experience of the work from an audience perspective. It's rare to find specific discussion of what happens when the music and dance come together in one of these works.

Cage and Cunningham's own discussions of music-dance relationship have a tendency to support the simplistic understanding of their process as one of complete separation. Cunningham recounts the development of his collaboration with Cage in terms of progress towards uncovering what he refers to as an “underlying principle... that music and dance could be separate entities independent and interdependent, sharing a common time.”¹⁷ The emphasis in this narrative is on independence: dancing to music is seen as a set of self-imposed shackles for the dancer—a false delusion that must be washed away in order for the dancer to be truly free. Music is a crutch that must be discarded if the dancer is ever to realize the full potential of human movement.

16. Nicholas Cook, *Analysing Musical Multimedia* (Oxford: Oxford University Press, 2000), 54.

17. Merce Cunningham, “A Collaborative Process Between Music and Dance,” in *A John Cage Reader: In Celebration of His 70th Birthday*, ed. Peter Gena and Jonathan Brent (New York: Peters, 1982), 107.

But notice that Cunningham mentions interdependence as well as independence. Cage-Cunningham should represent not an easy excuse to ignore the possibilities of collaboration, but a rich world of ideas to inform how we as composers approach dance. In particular, Cage-Cunningham should stand for the idea that dance and music form an interdependent unified field of performance in which methods and ideas can circulate between one medium and the other. So in this chapter I will attempt to revise the caricature of Cage-Cunningham as complete separation into a more useful portrait. The fact that Cage and Cunningham themselves seem to have participated in the construction of this caricature, and that so many have been misled, suggests that a closer examination is necessary. Moving forward, it is important not to mistake their strategic separation of music and dance for a general policy.

Development of the Cage-Cunningham Paradigm

As Cage and Cunningham tell the story of their collaboration, the development of their aesthetic of music-dance relationship traces back to their first shared concert program in 1944. Cage had developed an approach to composition based on rhythmic structure in order to organize percussion and other indefinite pitch materials. This focus on rhythm was also well-suited to organizing non-sound materials from other time-based mediums such as dance.

In 1952 Cage staged his famous *Untitled Event* at Black Mountain College which included music, dance, poetry, and other activities organized according to chance-

determined time brackets. Cunningham began choreographing with a stopwatch rather than rhythmic counts in response to working with Christian Wolff's *Music for Magnetic Tape* at around this same time. This music could not practically be used to coordinate the dance either by counting or by learning the continuity.¹⁸ In Cunningham's words, "The dancer's unsupported time-span was expanding."¹⁹ By the time of his piece *Antic Met* (1958) Cunningham was choreographing to the total duration of the work—Cage's *Concerto for Piano and Orchestra*—with no reference to its internal structure. Then, beginning in 1964, Cunningham began organizing spontaneous site-specific events in which choreography from the company repertoire would overlap indeterminately with the autonomous activities of the company musicians. Choreography from one piece might be paired with music that was originally commissioned for another piece or which was not originally intended for dance at all.

By the late 1960's Cunningham was well-established in his practice of rehearsing the dancers without music, the music and dance coming together for the first time only at the premiere. And by the 1970's he was also working with video, in which case the music would often be added only in postproduction. The live music and dance would—in a sense—never occupy the same space at all.

18. Merce Cunningham and Jacqueline Lesschaeve, *The Dancer and the Dance*, rev. ed. (New York: Marion Boyars, 1991), 90.

19. Cunningham, "A Collaborative Process Between Music and Dance," 112.

This is the context in which *Sounddance* was born. Before the piece had its title, portions of the work-in-progress were shown in *Events* at Westbeth—the company’s studio in New York City—in February through May of 1974.²⁰ The performances featured music by a variety of different composers including Yasunao Tone, Jackson Mac Low, Annea Lockwood, Jacques Bekaert, Christian Wolff, Robert Ashley, Maryanne Amacher, Alvin Lucier, Joel Chadabe, Phill Niblock, Frederic Rzewski, Tony Martin, Garrett List, Philip Corner, and Nam June Paik in addition to the regular company musicians David Behrman, Gordon Mumma, Cage, and Tudor.²¹ A portion of the material also figured into *A Video Event* which was produced for television with video artist Charles Atlas that May, featuring music by Christian Wolff. *Sounddance* wasn’t performed with Tudor’s music until its premiere in 1975.²² The company continued to stage *Events* that year too, including additional musicians and composers such as Meredith Monk, David Rosenboom, Mr. J. B. Floyd, Linda Fisher,²³ Anthony Braxton,

20. Vaughan, *Merce Cunningham*, 190.

21. Ibid. Most of the names on this list are familiar experimental music composers of the time, but a few are artists that we would not normally categorize as musicians or composers. I will discuss Nam June Paik’s music for one Cunningham event in greater detail below. Tony Martin is known for projections and light performances. For more on Martin’s work see Tony Martin, “Composing with Light,” in *The San Francisco Tape Music Center: 1960s Counterculture and the Avant-Garde*, ed. David W. Bernstein (Berkeley: University of California Press, 2008), 136–145.

22. Vaughan, *Merce Cunningham*, 193.

23. Fisher was a member of David Borden’s early Moog-based band Mother Mallard’s Portable Masterpiece Co. See David Borden, “Mother Mallard History: The

Shudo Yamato,²⁴ Charlemagne Palestine, and Stuart Dempster.²⁵ It follows then that *Sounddance* makes a good case study for interpreting Cunningham's musical accompaniment as shifting or provisional. As we experience this piece, we can imagine that the music has been—and could be again—quite different than the Tudor piece with which it is now normally paired in repertory performances by the company. *Sounddance* underwent a variation of the Brechtian technique in which actors rehearse different possible series of events rather than only the scripted sequence that they will eventually perform.

When he appears on the stage, besides what he actually is doing he will at all essential points discover, specify, imply what he is not doing; that is to say he will act in such a way that the alternative emerges as clearly as possible, that his acting allows the other possibilities to be inferred and only represents one out of the possible variants.²⁶

Early Years (1998),” in *Mother Mallard's Portable Masterpiece Co. 1970-1973 (Press Release)* (Cuneiform Records, 1999), accessed February 11, 2015, <http://www.cuneiformrecords.com/press/mothermallard-7073-PR.pdf>. Vaughan lists her as performing with David Tudor.

24. Yamato Shudo is a Shakuhachi player who taught at Wesleyan University in the mid 1970s. See Special Collections and Archives, “Guide to the Music Department Records: Series 3, Concert Programs, 1863-[ongoing]” (Wesleyan University, n.d.), accessed February 11, 2015, <http://www.wesleyan.edu/libr/schome/FAs/mu1000-182-3.xml>; and “Ralph Samuelson (Bio),” accessed February 11, 2015, <http://www.shakuhachi.com/R-Shaku-Samuelson.html>.

25. Vaughan, *Merce Cunningham*, 191, 194.

26. Bertolt Brecht, *Brecht on Theatre: The Development of an Aesthetic*, trans. John Willett, 13th ed. (New York: Hill and Wang, 1977), 137.

For us as viewers of *Sounddance*, the piece could similarly imply musical choices other than the final version with Tudor's music. If we are aware of the aesthetic of independence between dance, it then becomes part of our experience of the work.

From Inter- to Independence

Cage and Cunningham's accounts of the development of their collaboration tend to focus on the 50s and 60s—from the point at which chance procedures and the aesthetic of independence were firmly in place. But Cage's thinking about dance goes back to the 30s. Modern dance provided crucial support for his early career: "It was evident that musicians interested in new music were rare. It was equally evident that modern dancers were grateful for any sounds or noises that could be produced for their recitals."²⁷ Cage also recounts one of the first musical discoveries tied to his involvement with dance: the water gong, which was discovered initially as a method of synchronization for an aquatic ballet at U.C.L.A., Cage's first commission. And Cage's concept of rhythmic structure arose from his work with percussion instruments—whose indefinite pitch and fixed duration made harmony, counterpoint, and 12-tone methods inappropriate²⁸—as well as from his early work with choreographers:

27. John Cage, "Four Statements on the Dance," in *Silence* (Middletown, CT: Wesleyan University Press, 1961), 86.

28. John Cage, "A Composer's Confessions (1948)," in *John Cage: Writer*, ed. Richard Kostelanetz (New York: Cooper Square Press, 1993), 34.

In writing for the modern dance, I generally did so after the dance was completed. This means that I wrote music to the counts given me by the dancer. These counts were nearly always, from a musical point of view, totally lacking in organization: three measures of 4/4 followed by one measure of 5, 22 beats in a new tempo, a pause, and two measures of 7/8. I believe this disorder led me to the inception of structural rhythm.²⁹

Thus Cage's concept of time structure owes to his involvement with dance. And before he used the I-Ching to generate time structures he worked with the readymade time structures of choreographers.

Cage credits another key aspect of his aesthetic in a similarly negative fashion to his early dance work: "Any latent longing that I might naturally have had to master expressivity in music was dissolved for me by my connection with the modern dance. For them I had continually to make suitable and expressive accompaniments."³⁰ Cage came into modern dance at a time when the reigning aesthetic was one of emotional expression, and one can imagine how this would have thrown Cage's own leanings towards formalism and non-expression into sharp relief.

Cage notes that the prepared piano was invented in the course of adapting the piano for a dance by Syvilla Fort that involved African imagery: "She was performing in a theatre that had no room in the wings for percussion instruments; yet her dance, a *Bacchanale*, most evocative of her African heritage, suggested the use of percussion. But

29. John Cage, "A Composer's Confessions (1948)," in *John Cage: Writer*, ed. Richard Kostelanetz (New York: Cooper Square Press, 1993), 33.

30. *Ibid.*, 34.

for practical purposes, I had to confine myself to the piano.”³¹ Telling the story decades later he embellishes differently, emphasizing the limits of serial technique in organizing indefinite pitch materials: “I spent a day or so conscientiously trying to find an African twelve-tone row. I had no luck. I decided that what was wrong was not me but the piano. I decided to change it.”³² Either way it can sometimes be easy to miss Cage’s subtly ironic wit. This story falls into the same pattern as Cage’s other stories about early work with dance, pre-Cunningham. He’s telling an anecdote about a mundane task that was presented to him by a dance situation, and how he turned it around into an innovation in modern music.

Cage’s tone towards Fort, her racial identity, and her exploration of African dance may be troubling to us from a contemporary perspective. Though Fort is but a footnote in the history of experimental music for her role in the genesis of Cage’s prepared piano, she is an important figure in dance in her own right.³³ But the various influences of working with dance upon Cage’s developing aesthetic and compositional techniques are also a sign of his openness to the possibilities of mutual influence between the mediums.

31. John Cage, “A Composer’s Confessions (1948),” in *John Cage: Writer*, ed. Richard Kostelanetz (New York: Cooper Square Press, 1993), 35.

32. John Cage, “Foreword to the Well-Prepared Piano (1973),” in *John Cage: Writer*, ed. Richard Kostelanetz (New York: Cooper Square Press, 1993), 117.

33. Zita Allen, “Syvilla Fort,” *Encyclopedia of African-American Culture and History* (Macmillan, 1996), accessed March 17, 2015, <http://www.pbs.org/wnet/freetodance/biographies/fort.html>.

In Cunningham he found a collaborator who was willing to take up the circulation of influence from the other direction as well, incorporating Cage's working methods with his own.

Cage's early writings on dance became well known later through their publication as *Four Statements on the Dance in Silence*. The essays collected here span from a 1939 manifesto that reflects his initial involvement with dance, to a 1957 piece that reflects his early work with Cunningham. Cage's writing on dance in the 30s and 40s is less specific to his own working methods as they developed later on through his work with the Cunningham company, which was officially formed only after he turned exclusively to anti-intentional chance procedures. This makes it easier to imagine how the ideas might be applied to a wider range of working methods. In *Grace and Clarity* (1944), Cage outlines his idea of the importance of rhythmic clarity as a foundation for all the time-based arts. Grace, on the other hand, is the free play against time structure which rhythmic clarity can support. What is proposed here isn't nearly as radical as the Cage-Cunningham doctrine in its fully-formed state. In fact, Stephanie Jordan notes that a number of choreographers from earlier in the 20th century had used something like the shared time structure approach including Antony Tudor and Vaslav Nijinsky.³⁴ Working

34. Stephanie Jordan, "Freedom from the Music: Cunningham, Cage & Collaborations (1979)," in *Merce Cunningham*, ed. Germano Celant (Milano: Edizioni Charta, 2000), 64.

with shared intervals of time and structural points of connection makes sense for a wide variety of aesthetic contexts.

In this essay Cage was also participating in a debate in the modern dance world at the time over the narrative turn in the work of Martha Graham and others, advocating instead for formal clarity over emotional expressivity.³⁵ It might seem like he's arguing for a wider wedge to be driven between music and dance, but the question here is not one of closeness but primacy. If dance and music are bound together by the necessity of shared emotional expression, one will always be leading and the other following. If the focus in interaction is shifted to the "neutral" common ground of rhythm, a non-hierarchical interplay between the mediums may become possible. This interplay in turn opens up the possibility of not just closeness, but real integration and interdependence between music and dance.

Going back to the first essay in *Four Statements*, "Goal: New Music, New Dance" (1939) emphasizes interdependence over independence more explicitly:

The materials of dance, already including rhythm, require only the addition of sound to become a rich, complete vocabulary. The dancer should be better equipped than the musician to use this vocabulary, for more of the materials are already at his command.³⁶

35. See discussion of Cage's role in critical debates in dance at this time in Chapter 3 of Gay Morris, *A Game for Dancers: Performing Modernism in the Postwar Years, 1945-1960* (Middletown, CT: Wesleyan University Press, 2006).

36. Cage, "Four Statements on the Dance," 88.

Cage observes that when the materials of music are expanded to include all sounds, much of this world of material—found objects and the sounds of everyday life—are in a way closer to the materials of dance than they are to the traditional materials of music. The modern dancer may better know what to do with the sound of a brake drum than a composer stuck in a nineteenth-century paradigm of orchestration. As it turns out this is still somewhat true. Choreographers have developed ways of working with diverse materials that could prove suggestive to contemporary composers. For instance, we could look to the collaborative compositional methods common in contemporary dance as an alternative to our tendency as composers to rely on notation to realize complex interactions between performers.

Cage's approach to dance grew out of a desire not to separate it out but to more fully integrate it with music.

Whatever method is used in composing the materials of the dance can be extended to the organization of the musical materials. The form of the music-dance composition should be a necessary working together of all materials used. The music will then be more than an accompaniment; it will be an integral part of the dance.³⁷

In these early writings Cage seems to have a different relationship to the idea of accompaniment, not simply rejecting the role outright but seeking to build upon it to find something better. Cage of the 40s had not yet completely rejected organicity and intentionality as he did later on with his turn to chance methods in the 50s.

37. Cage, "Four Statements on the Dance," 88.

As Cage sees it at this point, the problem with conventional approaches to pairing music and dance—based on, for example, parallel expression of a common narrative structure or emotional trajectory—was that they resulted in redundancy. If music and dance express the same content simultaneously, this implies that they are separate domains. Otherwise what would be the point? Cage's vision is one of unified music-dance composition which has no need for such redundancy. The materials of music become available to dance composition and vice versa.

If we construct the narrative of the development of Cage and Cunningham's collaboration from this perspective, it's quite a different story. Dance and music are not growing further apart, achieving independence, but closer together, seeking interdependence in the expanded field. They shared compositional methods—chance methods in particular—ways of working with time and space in which individual elements could be highly independent. The independence of dance from music and thus the independence of collaborators followed naturally from these methods. Dance was independent from music just as each sound event was independent from the next. But we could imagine different compositional approaches applied to this unified field as well. When we approach a collaborative process as composers, the Cagean approach might not mean simply that we ignore the dance, but that we think deeply about what sort of collaborative process our compositional methods might imply. We might then approach dance by asking: how can we facilitate a circulation of working methods between

composition and choreography? And what can we learn about the nature of such circulation from looking at the Cage-Cunningham example?

Separation of the Elements

Cage's writings on dance from the 50s onward offer some insight into how this circulation influences the nature of a finished work. In the third essay in *Three Statements*, "In This Day..." (1957), the aesthetic of separation is more fully in place: "...the support of the dance is not to be found in the music but in the dancer himself, on his own two legs, that is, and occasionally on a single one."³⁸ Here Cage offers more insight into what the point might be of his approach to dance in terms of the overall effect:

From this independence of music and dance a rhythm results which is not that of horses' hoofs or other regular beats but which reminds us of a multiplicity of events in time and space—stars, for instance, in the sky, or activities on earth viewed from the air.³⁹

Cage's examples—stars in the sky, events viewed from the air—are interesting in how they emphasize detachment. In these cases we appreciate natural phenomena or the activities of everyday life disconnected from their contingencies or inner workings. The stars are flattened onto the apparent dome of the night sky. It's easier for us to see them as shapes suggesting mythological stories (or as music notation) than as what they really

38. Cage, "Four Statements on the Dance," 94.

39. Ibid.

are: stars much like our own sun. We appreciate the manifestations without wondering at the astrophysical mechanics that govern the transforming patterns from one night or one season to the next. In this we might hear echoes of Cornelius Cardew's critique: "Cage's music presents the surface dynamism of modern society; he ignores the underlying tensions and contradictions that produce that surface."⁴⁰ And this is the effect of the music in many Cunningham dances that adhere to the doctrine of separation, whether or not the music is composed by Cage.

For better or worse, independent music has a distancing effect on the dance. It makes the proceedings more abstract, more modernist.⁴¹ We're less likely as audience members to think of the performers as people like us. We're less likely to interpret their actions in terms of narrative. The dance takes on a flexible or shifting sense of scale. Rather than bodies we are watching the unfolding of natural phenomena—perhaps cosmic, perhaps microscopic.

Back to the example of *Sounddance* for a moment, Cunningham says of the piece that "the general impression is of a space observed under a microscope."⁴² And Cunningham's archivist David Vaughan comments that "In fact Cunningham had been

40. Cornelius Cardew, "John Cage: Ghost or Monster? (1972)," in *Stockhausen Serves Imperialism (1974)* (ubuclassics, 2002), 36.

41. Roger Copeland, *Merce Cunningham and the Modernizing of Modern Dance* (London: Routledge, 2004).

42. Vaughan, *Merce Cunningham*, 194.

given a microscope as a gift, and the movement and groupings in *Sounddance*, such as those in which the dancers formed a mass of writhing or waving limbs, were sometimes derived from his observation of organisms under it.”⁴³ Contrastingly, dancer Kenneth King describes both the music and the dance in terms of the largest possible scales: “galactic sounding interference creating immense reverberations, sonic blasts, and (implicit) stellar spaces.”⁴⁴ It’s less common to find descriptions of *Sounddance* (and perhaps Cunningham’s work in general) which describe it in terms of human scales of space and time.

This might sound dehumanizing or alienating, but such alienation can be thought of in positive terms. There’s a close parallel here to Bertolt Brecht’s theorization of an “Alienation Effect” produced by certain techniques in the theater, including what he termed “Separation of the Elements.” Brecht advocated separation of music from other elements of theater—as opposed to manipulative Wagnerian integration—for the purpose of encouraging an autonomous, thinking audience to engage actively with the socialist politics of his plays:

So long as the expression ‘Gesamtkunstwerk’ (or ‘integrated work of art’) means that the integration is a muddle, so long as the arts are supposed to be ‘fused’ together, the various elements will be equally degraded, and each will act as a mere ‘feed’ to the rest. The process of fusion extends to the spectator, who gets thrown into the melting pot too and becomes a passive (suffering) part of the total

43. Vaughan, *Merce Cunningham*, 194.

44. Kenneth King, “Space Dance and the Galactic Matrix: An Appreciation of Merce Cunningham’s ‘Sounddance,’” *Chicago Review* 37, no. 4 (January 1, 1992): 66.

work of art. Witchcraft of this sort must of course be fought against. Whatever is intended to produce hypnosis, is likely to induce sordid intoxication, or creates fog, has got to be given up.⁴⁵

Brecht's separation is horizontal—isolating musical numbers in their own scenes made distinct by staging, lighting, and supertitles—while Cage-Cunningham's is vertical.⁴⁶ But the end goal is perhaps not so different than Cage-Cunningham's zen-anarchist political utility as training an independently-minded and omni-attentive audience. Cunningham explains his vision of an autonomous, empowered audience as follows:

The dance isn't *directed* to them, or done for them. It's presented for them. Suppose that even in the dancing I directed something towards something special, the sound would not do the same. It accents in its own way. The visual part might conceivably accent something totally differently, so that what is left for the public is to look at these three things and make something out of it. But, as I say, they have a choice. They can get up and leave. Or they can stay and attempt to make something out of it.⁴⁷

An independent circulation of materials, methods, and procedures in a unified field of music-dance composition leads to an experience for the audience which prepares them to retain their capacity for critical reflection in the face of complex multi-sensory demands on their attention.

45. Brecht, *Brecht on Theatre*, 37–38.

46. See Brecht's description of a 1928 production of *The Threepenny Opera* for a sense of how separation of music from drama played out in practice: *Ibid.*, 85.

47. Cunningham and Lesschaeve, *The Dancer and the Dance*, 172–173.

When Music Steps on Dance's Toes

We can also learn about the effects of the Cage-Cunningham paradigm by considering the edge cases: moments when the approach of separation was not entirely successful. For this sort of example we can turn to Cage's later writings on music and dance, which take on a different character that could perhaps be described as more conservative. Having opened up the space of possibilities, there was more occasion for the septuagenarian Cage to reflect on the consequences of those possibilities. In a 1982 piece on Nam June Paik,⁴⁸ he reflects on some of the unexpected results of inviting musicians from outside the immediate circle of Cage, David Tudor, and Gordon Mumma to accompany Cunningham *Events* like those that incubated *Sounddance* in 1975.

Cage describes music provided by Paik for two such performances (the well-known visual and performance artist was originally a composer by training). Cage does not exactly characterize these as failures, though he does suggest that he doesn't really think of Paik as a composer—a striking distinction given Cage's expansive definition of music. For one event Paik played a slowed-down recording of Schoenberg's *Verklärte Nacht*, remarking afterwards that the result proved Schoenberg's greatness as a composer.⁴⁹ For another *Event* Paik performed an extremely sparse rendering of an excerpt of his *Etude for Pianoforte* consisting of—by Cage's description—only a few

48. John Cage, "More on Paik (1982)," in *John Cage: Writer*, ed. Richard Kostelanetz (New York: Cooper Square Press, 1993), 153–157.

49. *Ibid.*, 154.

notes played at the piano. This piece is not a conventional musical work to begin with but a performance art piece. Paik's interpretation of the piece at its 1960 premiere involved cutting Cage's tie and dousing David Tudor with shampoo.⁵⁰ Apparently this version for Cunningham was much more restrained, as he did not attempt any on-the-spot alterations to the dancer's costumes.

According to Cage there were only two incidents that truly challenged their conviction that "any other music than ours, provided it interested us" would work:

Once with the music of Charlemagne Palestine which consisted in large part of a recital of his thoughts while defecating, thoughts about how uncomfortable it was for him not only to move his bowels but to have his music (which he did not play) in a situation which was not a planned collaboration. And once with the music of Christian Wolff which consisted of overtly political songs.⁵¹

These two occasions warrant further investigation for what they can reveal about the limits of the Cage-Cunningham aesthetic of simultaneity.

Wolff describes the incident where political songs entered into music for a Cunningham performance:

Once, as part of the accompanying music for a dance of Merce Cunningham and his company, I included along with usual music the informal and quite raucous singing of Woody Guthrie's "Union Maid." The audience, most of whom had routinely encountered Cunningham's dance and more or less tolerated the most

50. Michael Nyman, "Nam June Paik, Composer," in *Nam June Paik*, ed. John G. Hanhardt (New York: Whitney Museum of American Art, 1982), accessed February 9, 2015, <http://archive.org/details/namjunepaikjohng1432unse>.

51. Cage, "More on Paik (1982)," 153.

advanced kinds of music (notably Cage's and Tudor's), audibly gasped in shock.⁵²

Wolff brings up this anecdote to demonstrate that context and risk are important aspects of what makes music “experimental.” A folk standard could become truly “experimental music” in the unexpected context of a Cunningham *Event*. But let's also consider what effect the music may have had on the dance. Since we know that Wolff provided music for *Events* on several occasions in 1974 when portions of what would later become *Sounddance* were used, this piece makes a good choice for our thought experiment.

Imagine how the substitution of “Union Maid” for David Tudor's music would impact our experience of, for instance, the opening minutes of the piece. The metered music would underpin the regular rhythm of the footwork in the opening solo, making it appear as if the dancer was dancing to the music, if in a somewhat inappropriately rigid style. When the second dancer enters we may wonder if she is meant to represent the protagonist of the song. As more dancers enter the stage we might wonder if we are witnessing an abstract depiction of a union rally. And is the soloist the union organizer or the company (pun intended) boss?

The risk of pairing “Union Maid” with a Cunningham dance was not just the risk of shocking the audience, but of undercutting the modernist aesthetic priorities of the *Event*. The steady common meter summons associations with popular entertainment and

52. Christian Wolff, “Experimental Music around 1950 and Some Consequences and Causes (Social-Political and Musical),” *American Music* 27, no. 4 (December 1, 2009): 435.

social dance, disrupting the sense that the dance is independent from the music. The meter sets up a hierarchical context against which the rhythm of the dance will be interpreted. The footwork no longer happens in a more or less undifferentiated stopwatch time, defining and redefining its own context as it goes, but against a steady stream of downbeats and upbeats. The meaning of a particular movement shifts depending on whether it lands on the one or the four.

Perhaps more powerfully, the song also features a narrative text with a central character that is developed across several verses. The idea of text itself is not entirely foreign to the Cage/Cunningham universe. Cage along with poets MC Richards and Charles Olson recited texts as part of the Untitled Event of 1952,⁵³ and Cage read stories as aural accompaniment to Cunningham's *How to Pass, Kick, Fall and Run* in 1965.⁵⁴ But in these examples the text was either abstract, obscure, or sufficiently fragmented so as to avoid adhering dramatically to the dance for an extended period of time. "Union Maid," on the other hand, would have threatened to jolt the dance into the realm of narrative expressivity.

53. Various accounts of the Untitled Event are summarized in William Fetterman, *John Cage's Theatre Pieces* (New York: Routledge, 2012), 97–104.

54. Vaughan, *Merce Cunningham*, 151–152.

Charlemagne Palestine's contribution to a Cunningham *Event* in 1975⁵⁵ is a far more extreme example. In addition to Cage's description there are at least two other accounts of this performance.⁵⁶ One appears in a 1979 Stephanie Jordan article and comes via an interview with Christian Wolff. Palestine "provided a series of abusive remarks about the dance, thereby making a caustic statement about the philosophy rather than working within it."⁵⁷ A more detailed account comes from performance artist Carolee Schneemann, who describes the performance vividly in a letter dated 29 May 1975, probably written shortly afterward.⁵⁸ Palestine had discussed the performance with her ahead of time, apparently suggesting that he would stage some kind of intervention against the normal situation of music for the *Events*. For Schneemann, who respected both Palestine and Cunningham greatly, it was dramatic.

The Battle of Gettysburg, a helicopter over the plains of Leningrad, invisible on a Polish Charger running German Tanks, none of those haunting battles could have satisfied as did the battle of Palestine–Cunningham.⁵⁹

55. Palestine is listed as contributing to an *Event* this year in *Ibid.*, 194. This year is also suggested by the date of Schneemann's letter describing the event.

56. Jordan, "Freedom from the Music: Cunningham, Cage & Collaborations (1979)," 66. I am inferring somewhat from context that this information must have come from Jordan's interview of Wolff.

57. *Ibid.*

58. Carolee Schneemann and Kristine Stiles, *Correspondence Course: An Epistolary History of Carolee Schneemann and Her Circle* (Durham, NC: Duke University Press, 2010), 242–243.

59. *Ibid.*, 242.

She describes the situation as a reversal of the riots the company caused in Europe in 1964—which she also witnessed first hand. The company was no longer the shocking avant-garde incursion into the sacred opera house, but the conservative establishment whose territory was under attack. Palestine’s theatricality competed with the dance for the audience’s attention, thus creating a simultaneity where they were forced to choose. And the intensity of his performance made it clear—to Schneemann at least—that something important was at stake in that choice:

[W]ere you lining up behind the flange, the marching regiment order or would you join the crazed invaders hanging from the Grand Central golden clock? The disruptive celebrants whose spontaneity would jumble into pulped bleeding messes under the magic truncheon wands of the brigade? Which? I felt that half-forgotten terror, thrill of being forced to embrace my own principles from without.⁶⁰

At some point during the performance Palestine wrapped himself in the curtain that served as a backdrop, pulling it away along its tracks to reveal the studio mirror (the performance took place in Westbeth, the company’s rehearsal studio that was also frequently used as a concert venue). The gesture had what seems like a particular symbolic significance for Schneemann. Also, the baring of the mirror had the striking result of allowing the audience to see themselves, further pushing the dancers into the background of their attention.

60. Carolee Schneemann and Kristine Stiles, *Correspondence Course: An Epistolary History of Carolee Schneemann and Her Circle* (Durham, NC: Duke University Press, 2010), 243.

The mirror would have also potentially drawn attention to the labor of technical training and rehearsal behind the precise movements of the dancers. This is a kind of betrayal of the work's glossy technical polish—a bringing down to human scale. Schneemann notes how stiff the dancers seem in their determination to continue the performance as planned in the face of Palestine's affront.

She also points out that the very presence of a musician (wearing boots) crossing onto the floor space reserved for (barefoot) dancers was transgressive. But this kind of shared space was not entirely unheard of in music for other *Events* around this time. For Stuart Dempster—another musician from outside the immediate Cage-Tudor-Mumma circle who performed for Cunningham events around this time—the physical presence of the musician in space was also an important aspect of the music. He frequently walks around the space while playing, exploring the acoustic architecture and its interaction with the sound of his trombone. He is well known for his recordings in unusual acoustic spaces. Dempster notes that he had to negotiate the use of space while preparing to perform in the same series of Cunningham events at Westbeth that featured Palestine:

I remember sitting with Merce with a stop-watch, observing the dance to make sure I knew when I could or could not use the floor. I wished to avoid any traffic problems, but Merce would not tell me what his dances were: I am sure he was afraid that I would link the music to the dance.⁶¹

61. Stuart Dempster, "Working with David Tudor and the Merce Cunningham Dance Company," *Musicworks: Explorations in Sound*, no. 73 (1999), 16.

So the idea of a musician occupying space—perhaps even of stepping onto the sanctified dance floor—was not unheard of. But Palestine is quite a different performance presence than Dempster, whose performance still clearly falls under the domain of “music” rather than “performance art.”

The Palestine incident brings to mind another anecdote from Dempster. In preparation for performing on the *Events* of the 1976 tour, Dempster remembers Tudor’s leadership: “One of our regular rules is: Thou shall not turn down another person’s gain.”⁶² This perhaps explains why performances involving Tudor were so notoriously loud—a tradition proudly upheld by company musicians through to the performances I had the privilege to witness in person in the late 90s and 2000s—but it also provides another possible interpretation for Cunningham’s non-response to Palestine’s intervention: It was a test of the principle of collaborative trust.

And in the case of parallel independent creative processes, trust may in fact be the only thing left. The Cage-Cunningham approach to collaboration is as much a social or political ethic as it is an aesthetic stance. Cunningham explains:

...we are dealing with a different idea about how people can exist together...how you can get along in life, so to speak, and do what you need to do, and at the same time not kick somebody else down in order to do it...what we represent is in a sense no government. We do represent a kind of individual behavior in relation to yourself doing what you do and allowing the other person to do whatever he does. As Christian Wolff once said, it does imply good faith between people.⁶³

62. Stuart Dempster, “Working with David Tudor and the Merce Cunningham Dance Company,” *Musicworks: Explorations in Sound*, no. 73 (1999), 17.

63. Cunningham and Lesschaeve, *The Dancer and the Dance*, 163–64.

In the example of the Palestine incident, it is fairly easy to see how the principle of “good faith” was violated. But ultimately the more interesting question is: what seems to make these “collaborative non-collaborations”⁶⁴ more often than not succeed? *Sounddance* is only one of many Cunningham pieces that exhibit an uncanny synergy between dance, music, and visual design elements that is all the more striking because any correspondences are said to have arisen by chance.

Leveling the Expanded Field

When it comes to Cage, it’s common to see “collaboration” used to describe all sorts of different social relationships around musical practice, even if it is not a word he favored himself.⁶⁵ But in what sense is Cage’s work ever collaborative? This question is especially relevant if we are to take Cage-Cunningham seriously as a model for collaboration. Collaboration is a term we use when we want to say something about the balance of power in a working relationship. But depending on who uses the term and

64. Carolyn Brown, *Chance and Circumstance: Twenty Years with Cage and Cunningham* (New York: Knopf, 2007), 20. Brown uses this term to refer to the Untitled Event at Black Mountain College in particular, but I think it also applies well to the Cage-Cunningham approach in general. That first “happening” was a kind of prototype for the Cage-Cunningham approach to collaboration.

65. See for example Leta E. Miller, “Cage’s Collaborations,” in *The Cambridge Companion to John Cage*, ed. David Nicholls (Cambridge: Cambridge University Press, 2002), 151–168. My impression is that the use of “collaboration” to describe the social dimension of Cage’s work in this article is an extreme but not isolated example.

under what circumstances, its meaning can shift between opposite extremes of egalitarian cooperation and authoritarian hierarchy.

On the one hand, collaboration often implies a certain amount of agency for the participants or shared creative control. We say that an artwork is collaborative when we want to acknowledge shared authorship. Organizations collaborate when they engage in a joint venture to which both sides make significant contributions. A collaboration is a collective project in which the contributions of the participants are comingled.

But, on the other hand, “collaborators” may be second-tier partners who work in service of an executive or an auteur. Collaboration signifies a lower position in the organizational structure. In this way the term is deployed disingenuously by those who want to project an image of social or political progressiveness. “Collaboration” can add a connotative flavor of egalitarian collectivity to soften the appearance of a hierarchical power structure. A corporate bureaucracy may rename its units “teams” without reorganizing in a way that meaningfully shares power or improves communication. In extreme cases, “collaboration” and related terms are used euphemistically to cover up exploitative or precarious terms of employment. As Richard Sennett observes in *The Culture of the New Capitalism*, “‘I can work with anyone’ is the social formula for potential ability. It won’t matter who the other person is; in fast-changing firms it can’t matter. Your skill lies in cooperating, whatever the circumstances.”⁶⁶

66. Richard Sennett, *The Culture of the New Capitalism* (New Haven, CT: Yale University Press, 2006), 126.

Collaboration is routinely used to elevate what might normally be described as accompaniment—the very sort of practice that Cage fervently sought to distance himself from. Pianists who work with singers are not accompanists, but *collaborative pianists*.⁶⁷ Mark Morris does not use classical music as accompaniment, but rather *collaborates* with the (long dead) composers.⁶⁸ These are not simply euphemistic uses of the word, but imply important values about the power dynamic in the relationship. The collaborative pianist is not merely a pianist who happens to accompany singers, but one who studies the craft of playing with singers. The term also seeks to restore some of the prestige lost to the star power of the diva. When we see a pianist perform with a singer, we should value the specific skills of the pianist in that situation, recognizing that those skills are different from those of a piano soloist. In the case of Morris, “collaboration” signifies the choreographer’s deep understanding and respect for the music. This music is not simply sonic wallpaper, but integral to his creative process.

Cage masterminds large performance spectacles that involve a wide variety of performers, composers, and artists in different roles, and it’s easy to see why these would

67. “Nowadays...the word ‘accompanist’ has been almost universally replaced. The old title seems to strike many as pejorative, demeaning, or indicative of a lack of self-esteem; as a result, a different word for this specialized art has come into common usage today: collaborative pianist.” Martin Katz, *The Complete Collaborator: The Pianist as Partner* (Oxford ; New York: Oxford University Press, 2009), 3.

68. See for example Hamish J. Robb, “Looking Beyond Facile Understandings of ‘Literalness’ in Music–Dance Collaborations: Mark Morris’s All Fours,” *Dance Research* 30, no. 2 (November 1, 2012): 126–146. This article discusses a piece choreographed by Morris in 2003 to the fourth string quartet of Béla Bartók (1881-1945).

be considered collaborative in nature. These works depend on the creative input of the participants, who often take on roles normally filled by a composer or director. But Cage's relationship with performers is also described as collaborative, not necessarily because he works closely with them and allows this to influence his compositional process, but because he leaves decisions open to them that would normally be made by the composer. Similarly, Cage's work is described as collaborative with the audience because it requires some kind of actively engaged perception to in effect "complete" the composition. And Cage's work with Cunningham is collaborative in the sense that it does not interfere with the simultaneous performance of choreography. Collaboration is thought of in all of these instances negatively: as a lack of authoritarian interference rather than a mutual interaction. This is a view of collaboration that presumes a normative "composer" role that is renounced by Cage: a vision of the composer as dictator. The "non-collaborative" composer presumably has complete control over performance practice and interpretation as well as audience reception, social context, and function with respect to other arts.

But with Beethoven, even—to give this straw man Cage's favored name—would this be at all true? Performers have some degree of flexibility in interpreting his works, and many would argue they have more than enough freedom. Performers of Beethoven might indeed describe their work in terms of a sense of "collaboration" with the composer. Audiences similarly complete the work with their own interpretations in a

multitude of ways. And the other arts use Beethoven's music again and again for new purposes.

The fact that this term can apply equally well to any of the social dimensions of Cage's work demonstrates that in a Cagean or anarchistic flattening of established hierarchies, these relationships are seen as being at least potentially equivalent and interchangeable. Cage didn't propose independent simultaneity as a collaborative ethic simply for composers and choreographers, but also for composers and other composers—as in his *Double Music* with Lou Harrison. But the aspiration to flatten the landscape does not necessarily make it so. Cage said of his collaboration with Harrison: “The peculiarities of a single personality disappear almost entirely and there comes in perception through the music a natural friendliness, which has the aspect of a festival.”⁶⁹ But this fusion of the independent elements does not occur in the music-dance domain of a Cunningham work. We can always separate what is music from what is dance. The collaborators' contributions—their “personalities”—still maintain their integrity, their separate identities. In *Sounddance*, for example, David Tudor may be moving, but we would never confuse his movements with those of the dancers. His movements are small, focused on manipulation of the piece's electronic equipment. And he's in an area of the theater separated by architecture, lighting, and convention: the orchestra pit rather than the stage. Likewise, when we can hear the sounds of the dancers' feet on the stage, we

69. Cage, “A Composer's Confessions (1948),” 38. Quoted in Miller, “Cage's Collaborations,” 167.

know they're not part of the music. We know that Tudor's music consists of the electronic sounds coming from the speakers. If there's any kind of fusion between music and dance in this piece, it's at a higher level, in how we in the audience put them together poetically in our experience.

Simultaneities between sounds and visual or choreographic elements do not behave like simultaneities between sounds and other sounds. We can treat music and dance as a unified and interpenetrating field of performance, but it will never be entirely "flat." Cunningham's pieces have to work to flatten the field in a number of ways, and in order to create a space in which the aesthetic of independent music can function. The audience is prepared to accept the conceit of simultaneous music and dance as equal and independent partners. The stage space is decentralized. The choreography emphasizes discontinuity and eschews climax. Cunningham's dances are constructed so as to avoid treading on the music's territory. They avoid even the appearance of needing music for support. And they do not distract from our listening. The dancers are quiet, light, and voiceless. They do not demand our attention in any particular way that would tear us out of the present moment, at least not for too long at a stretch.

But even so, the ideal Cunningham audience brings its own hierarchies. Dance and music each lie at a different intersection of cultural associations and expectations with regard to gender, race, high versus low art, and so forth. The presence of the dancer's body on stage carries specific, situated meanings in stillness that are not comparable to a musician's silence. In *Sounddance*, Cunningham is a character in the

piece in the way that Tudor is not. We are confronted with the particulars of his identity, for instance, his age in comparison to the relatively younger dancers of the company. When the piece was revived in the 90s he was replaced by another performer with similar physical characteristics (a white man with a long torso, etc.) who was similarly older than the other dancers. If the role had been taken by, for instance, a young black woman, it would have made for a quite different piece. When David Tudor passed away in 1992, his live electronic score was replaced by a mix from three CDs which contain recordings of the electronic material. Either way the identity of the performer is not so significant to the meaning of the work.

The politics of negotiating individual identities aside, there are also fundamental differences in the behavior of light and sound that shape the terrain of the unified field. Think for example of how differently the occlusion problem plays out in the audio-visual domain. What is the equivalent in music-dance interaction of a dancer passing behind a set piece?⁷⁰ Or of one sound masking another in a particular critical band? Under what circumstances is it possible for a gesture to mask a sound or vice versa? And what is the equivalent in dance to a simultaneity of tones or timbres? Bodies cannot occupy the same space at the same time, as was frequently acknowledged by Cage and Cunningham in their explanations for Cunningham's limited and less frequent use of chance procedures.

70. Occlusion of dancers by set pieces has been a common occurrence in Cunningham's work from the beginning, first with Rauschenberg's objects in the 50s and later with Frank Stella's horizontal bands of stretched fabric for *Scramble* (1967). For description and images of *Scramble* see Vaughan, *Merce Cunningham*, 158–159.

Cage and Cunningham seem to have been willing to concede a significant formal difference between composition in music and dance (not even really a hierarchy of difference, but a difference nonetheless) only when there was risk of physical danger in the form of unplanned collisions between dancers.

In *Three Asides on the Dance*, Cage gives some insight on potential problems in applying metaphors from one medium to another by unraveling the problems inherent in thinking about music-dance relationship in terms of counterpoint.⁷¹ He opens with an anecdote about Christian Wolff, whose initial impression after viewing Cunningham's class was simply that his dance didn't need music at all. Cage then sets out to answer the question of why—given this astute initial impression—Wolff has gone on to compose several pieces for Cunningham dances. The idea that dance *needs* music is a horrible place to start for the composer approaching a collaboration. But if music for dance is not necessary, why make music for dance?

Cage explains that, by analogy to strict counterpoint, at first a composer for dance might think that what is “necessary” is something like first species: a one-to-one, direct relationship. But they would likely get stuck at something like simple contrast on the order of second species. This is because there is no good analogy in dance for consonance and dissonance. It simply doesn't work to proceed from moment to moment attending to combinations of elements controlled in a single, isolated dimension. In order to make the

71. John Cage, “Three Asides on the Dance (1959),” in *John Cage: Writer*, ed. Richard Kostelanetz (New York: Cooper Square Press, 1993), 83–85.

analogy hold, we would have to limit the possibilities of how we think about music and dance too severely. What would we choose for that single parameter which would be common to both mediums? We would run the risk of operating simplistically and vaguely in terms of “mood and character” and contrasts of “expressivity.”⁷² And that is no place to start if our ultimate goal is to build towards rich, complex, multilayered interactions between the elements of a dance-music composition.

Cage argues that what is “necessary” is the wrong question. Rather, the composer for dance should be asking what is “possible.” The reason to write music for dance is not to fulfill a necessity, but “...to leap beyond mentally imposed limitations. Out of the leap one brings about an art that resembles life when we open our eyes and our ears to experience it.”⁷³ Cage concludes the essay by describing some of the indeterminate structures employed by Wolff and how they result in a situation where the music is unpredictable and therefore avoids providing support for the dance. “This is a realistic situation comparable to the fact that a tree is not supported by the breezes that blow through it.”⁷⁴

Indeterminacy and time structure are less problematic than counterpoint in terms of how they map from music into the broader context of performance. But other factors

72. John Cage, “Three Asides on the Dance (1959),” in *John Cage: Writer*, ed. Richard Kostelanetz (New York: Cooper Square Press, 1993), 84.

73. *Ibid.*

74. *Ibid.*, 85.

influence audience perception beyond purely formal concerns, such as the structures of the senses and of the behaviors of bodies, object, loudspeakers, light, and sound in space. Even if there are numerous cues that we are meant to read a Cunningham dance primarily in modernist, formal terms, there is still plenty of cultural context at play. And this context contributes to a situation where even though we know that all the elements are meant to be equal, we also know that they are not in fact equal. Palestine doesn't need to literally stand in between the audience and the dancers in order to block our view. He can interfere with the dance by transgressing the role of musical accompanist: ranting rather than playing the piano, stepping on the sacred dance floor, etc. The divergence from expectation grabs our attention.

When problems have arisen in the application of the Cage-Cunningham doctrine, these have been in effect due to different kinds of music-dance occlusion. The Palestine and Wolff instances were both problems of music stepping on dance's toes (to extend the "on their own two legs" metaphor). Paik's marginally unacceptable music for a Cunningham event on the other hand, was not an outright failure because it at least did not get in the way. It's worth noting that in other circumstances Paik was known to experiment with these very effects of competing attention:

Paik's talent for extravagant, violent, and unexpected actions...often drew the spectator's attention away from what Paik claimed were the more important features of a piece. This is hardly surprising when one is dealing with events of the order of the notorious 1960 performance of *Etude for Pianoforte*, when Paik jumped off the stage and proceeded to cut Cage's shirttail and tie and then smother him and David Tudor with shampoo (scrupulously avoiding Stockhausen in the process!). But Paik, in all innocence, claimed to be disappointed when, amidst all the bean throwing, shaving cream and water dousing during his *Simple*,

a fifteen-second tape collage passed unnoticed. This collage was an essential part of the work since his “quality of performance was dependent on the quality of tape playback.”⁷⁵

The Craft of Non-collaboration

If “failures” in simultaneous music and dance have something to do with collision and occlusion, then what about successes? Is it enough for music and dance to stay out of each other’s way, so long as each element is of sufficiently high quality? Returning to the example of *Sounddance*, let’s consider what makes for this most successful, synergistic pairing.

David Tudor’s music for *Sounddance* can hardly be said to stay out of the dance’s way. This piece shows that the success of simultaneous music and dance has as much to do with conflict as it does with “good faith.” But it has to be the right kind of conflict. In this work, both the music and the dance seek to occupy the maximal amount of “space” in parallel ways. The excitement of the work results from this very conflict, and from the fact that it manages in a way to be a fair fight.

After an solo by Cunningham the dancers enter by ones and twos through an opening in the décor. Simultaneously Tudor works to guide his electronics through increasingly precarious and unstable states, resulting in an accumulation of richly articulated and rhythmic layers vying for our attention. The dance material may not be organized around sequences of counts, but it does have moments of quite clear rhythm.

75. Nyman, “Nam June Paik, Composer,” 82.

The dance shares with Tudor's music a dense irregular activity with emerging moments of clear—sometimes metric—rhythm. But these rhythms are almost always out-of-sync, and deliberately so. The music actively complicates our ability to see the rhythms of the dance.

The most obvious fact about the music is its sheer, overwhelming acoustic power. Rhythmic clarity aside, the upright dancers are relatively light on the floor in their bare feet. They flit about the field of the stage like insects or microbes. We do not fear for the safety of the floor. Tudor's music on the other hand is anything but light, and we would be right to fear for the integrity of our ears if the exposure were much more than eighteen minutes. Via multichannel diffusion it attacks us from all sides. This is music that dares us to leave the theater. The music immerses us in the world of the work and also insulates us from the physicality of the dancers. Their weight seems light in comparison to our awareness of our own weight coursing through with throbbing acoustic energy. The dance rides on the surface of the music. It has the status of an effect or a response to the music's urgency. Cunningham describes the music as "sustained and powerful. It's an electronic music that provides a charged environment."⁷⁶ But "charged" feels like an understatement.

Tudor's music is not simply doing its own thing alongside the choreography, but is brash in asserting its independence. (He remarked—and it's hard not to hear a hint of

76. Vaughan, *Merce Cunningham*, 194.

defiance here—that he listened to rather than watched the dance.⁷⁷) The music presents us with a situation not so much of openness, but of provocation. It raises the stakes. The dancers seem to be propelled onstage by an unseen force, and the music is that force. It gives us a hint of what may be hidden behind that curtain’s chaotic folds. What parallel universe have the dancers momentarily escaped from in order to share this space with us?

If many have interpreted this music as aggressive—even violent—can we blame them? It presents a nearly impenetrable surface. As musicologist Amy Beal puts it, “The freight-train-like power of Tudor’s improvisation gives an unadulterated impression of some of the most uncompromising music ever created for dance.”⁷⁸ The choice of the word “uncompromising” seems apt. This is music that does not bend to the needs of the dance or the desires of the audience. The music does not facilitate but stands in the way of our experience. The music is making the whole ordeal difficult—even painful—and why? The critic Marcia B. Siegel—who had a few years prior characterized Cunningham as “in the forefront of the rape-the-audience crowd”⁷⁹ due to his repeated use of loud

77. Ron Kuivila, *LMJ14 CD Companion Introduction: David Tudor: Live Electronic Music*, 2004, accessed January 13, 2014, <http://www.leonardo.info/lmj/kuivilalmj14intro.html>.

78. Amy C. Beal, “‘A Short Stop Along the Way’: Each-Thingness and Music for Merce,” in *Music for Merce (1952-2009) Liner Notes*, vol. 80712–2 (New World Records, 2010), 53.

79. This is in reference to *Canfield* (1969) in particular. “In his good-natured way, Cunningham has always been in the forefront of the rape-the-audience crowd, and it is perhaps a measure of our acceptance of him that we no longer feel compelled to submit to all his brutalities. Certainly his choreography itself is no longer revolutionary. Without

experimental electronic music—described her experience of a 1976 performance as follows:

When I saw the *Sounddance* material in Events it seemed to have a lot of wild rhythms and a lot of evolving configurations of people holding each other up in strange ways. David Tudor's score—electronic blatts and buzzes often amplified to excruciating levels—is the kind of noise I usually cross the street to avoid. Trapped there, I could just watch it obliterate the dance's music.⁸⁰

Tudor's music is a kind of modernizing and masculinizing force—an inoculation against any stray romantic impulses. It ensures that we do not identify too strongly with the dancers' bodies—that we do not let our imaginations run away with associations to children's games or social dance. The music is anti-narrative. It makes the big unison moments feel anything but cathartic or climactic. It denies or impedes any simpler pleasures we might take. It flattens the action onstage and also elevates it to a higher plane—one that we have to work to gain access to. The combined effect of music and dance that share basic structural and rhythmic properties but diverge significantly in terms of how they occupy space affectively—as well as in how they relate to the audience—is quite powerful. This is the reward for the audience member who buys into

the music it would probably be either pure entertainment or pure boredom, depending on your degree of kinesthetic sophistication. Marcia Siegel, "Come In, Earth. Are You There? (1970)," in *Merce Cunningham: Dancing in Space and Time*, ed. Richard Kostelanetz (New York: Da Capo Press, 1998), 76.

80. Marcia Siegel, "Repertory Is an Out-of-Town Tryout (1976)," in *Watching the Dance Go By* (Boston: Houghton Mifflin, 1977), 289.

the conceit of radically independent music and gives themselves over to the creative possibilities of such a collision.

As previously discussed, Cunningham's dances have a history of being seen with many different musical pairings. The company may very well have been performing material from *Sounddance* as Charlemagne Palestine invaded the stage at Westbeth. We can imagine that the same movement was paired with Christian Wolff's rendition of "Union Maid." But this movement has probably been performed most often by dancers not in public but in the context of training in the studio. And here the music was likely less like David Tudor and more like the show tunes and rags played by longtime Cunningham accompanist Pat Richter.⁸¹ This is music that is explicitly conceived of as supportive accompaniment to aid the dancers in learning the phrasing and musicality of particular movement sequences. The fact that music which supports the musicality of the dance is so markedly different from Tudor's music for the performance tells us something else about the conflict between music and dance in the work. There are moments in the work where we are seeing something that could be a fragment of a musical theater dance, though it hardly looks that way due to the deliberately mismatched soundtrack. As Siegel put it, Tudor's contribution is to "obliterate the dance's music."

81. See material from *Sounddance* in class context, with accompaniment by Pat Richter in Nancy Dalva, *Cunningham on Sounddance*, vol. 3, 16 vols., Mondays with Merce, 2009, accessed December 27, 2013, <http://www.mercecunningham.org/film-media/mondays-with-merce/episode-3-cunningham-on-sounddance/>.

Provisional Soundscapes

On the other extreme from the musical support of the dance class situation, since the Sony Walkman was introduced in the late 70s, some audience members availed themselves of the option of providing personal musical accompaniment of their own choosing.⁸² (Cunningham didn't co-opt the possibility of individual audience soundtracks delivered via headphones until the iPod era, with Mikel Rouse's score for *eyeSpace* in 2006⁸³). This situation of flexibility in pairing music and dance should feel familiar. And this familiarity means that how we understand the Cage-Cunningham legacy has broader importance in our current cultural moment as well. As mediums converge in evolving audiovisual media technologies, what tools do we bring to bear on understanding and interpreting our experiences?

Mobile audio devices extend questions of multimedia from the theater into the world of daily experience. For the iPod user, any *experience* is potentially accompanied by any soundtrack. And what about the "silent disco" with its dancers in public space, to be observed by passers-by to the accompaniment of the sounds of the city? Each participant acts as their own personal DJ, sharing the space of the party but not the music. Non-participants who happen upon the party hear nothing but the sound that is already

82. Copeland, *Merce Cunningham and the Modernizing of Modern Dance*, 8.

83. "EyeSpace 20," *Dance Detail: eyeSpace 20*, last modified 2015, accessed January 19, 2015, http://www.mercecunningham.org/index.cfm/choreography/dancedetail/params/work_ID/173/.

there. Think of the silent disco in Union Square, not far from the Cage-Cunningham loft, where Cage famously insisted on keeping the windows open:

With your headphones on, it's as if everyone moves to your beat; when they're removed it feels as if the hundreds of people are dancing to the city's ambient sounds of humming car engines, shuffling feet and reverberating chatter.⁸⁴

Or consider the more elaborate silent disco at Glastonbury where dancers move to multiple diverging *synchronized* soundtracks via multichannel wireless headphones.⁸⁵ DJs battle for the audience's allegiance, and each dancer can switch channels at will.

Contemporary technologies encourage us to play with how music affects meaning in simultaneous media. A function of YouTube allows us to automatically replace soundtracks with the click of a button—searching from a library of tracks that match the video's length.⁸⁶ We can now see a video of a shrimp running on a specially designed underwater treadmill accompanied by *Chariots of Fire*,⁸⁷ *Eye of the Tiger*,⁸⁸ *The Final*

84. Imaeyen Ibanga, "Silent Rave Takes Over NYC Park," last modified August 18, 2008, accessed September 26, 2014, <http://abcnews.go.com/Technology/AheadoftheCurve/print?id=5601914>.

85. "Silent Disco," *Wikipedia, the Free Encyclopedia*, August 24, 2014, accessed September 26, 2014, http://en.wikipedia.org/w/index.php?title=Silent_disco&oldid=614092533.

86. "Swap the Audio Track on Your Video - YouTube Help," accessed September 22, 2014, <https://support.google.com/youtube/answer/94316?hl=en>.

87. *Shrimp Treadmill - (Remix)*, 2006, accessed September 22, 2014, http://www.youtube.com/watch?v=p_1cyQBB38A&feature=youtube_gdata_player.

Countdown,⁸⁹ Justin Timberlake's *SexyBack*,⁹⁰ the metal band Dragonforce,⁹¹ or Curtis Mayfield.⁹² This may seem a trivial example, but the point here is just how widespread and accessible this idea has become—that the only necessary relationship between the “accompaniment” and the “accompanied” is one of simultaneity. A new soundtrack is only a button click away. The *Shrimp on a Treadmill* meme is in effect a lighthearted, informal (and postmodern) extension of Cage-Cunningham. It asks us to consider (and delight in) the question of how simultaneous media streams influence each other's meaning.

But our most common experience of music and media are still those where the choice of pairing is made for us, as in audiovisual advertising, and increasingly the isolation and control required to swap soundtracks is not confined to the space of the

88. *Shrimp Running on a Treadmill To Eye Of The Tiger*, 2008, accessed September 22, 2014, http://www.youtube.com/watch?v=oX2Ief4kjrI&feature=youtube_gdata_player.

89. *Shrimp on a Treadmill W/ The Final Countdown!*, 2006, accessed September 22, 2014, http://www.youtube.com/watch?v=KskaUMuARR8&feature=youtube_gdata_player.

90. *Shrimp On A Treadmill - Jamming to Muzak*, 2006, accessed September 22, 2014, http://www.youtube.com/watch?v=e4FvjdsGDJc&feature=youtube_gdata_player.

91. *Shrimp Rocks out to Dragonforce*, 2008, accessed September 22, 2014, http://www.youtube.com/watch?v=5vE5iT7Igx0&feature=youtube_gdata_player.

92. *Shrimp on a Treadmill Listening to Curtis Mayfield*, 2006, accessed September 22, 2014, http://www.youtube.com/watch?v=74_W_sOhMu4&feature=youtube_gdata_player.

screen. Joseph Pompei demonstrates his Audio Spotlight technology in a quiet library, playing salsa music for a pair of incongruous dancers.⁹³ Consider for a moment the experience of a library patron, watching the dancers perform their rhythmic movements in silence. How similar this is to the rhythmic moments in *Sounddance!* The omnipresence of distributed programmed music and newer technologies such as the Audio Spotlight and the LRAD—a military loudspeaker that can effectively replace the chants of protesters with input from the police officer’s iPod—mean that sound replacement in daily life no longer requires your consent. “Augmented reality” means that any place can sound like someplace else, whether or not you wear headphones.

Think back to Cage’s remark that the separation of music and dance resulted in a situation comparable to events seen from the air. It would seem that now this sort of distancing effect no longer requires physical distance, but is a fact of our everyday experience. I would argue that this makes how we understand Cage and Cunningham more relevant than ever. This is art that prepares us to respond to an increasingly mediatized environment with maximum flexibility. In the schizophonic⁹⁴ soundscape, we may increasingly find ourselves moving to music that we don’t expect. And like

93. *Mad Labs: Audio Spotlight*, 2007, accessed September 26, 2014, http://www.youtube.com/watch?v=veDk2Vd-9oQ&feature=youtube_gdata_player.

94. R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (Rochester, VT: Destiny Books, 1977), 90–91.

Cunningham dancers, we'll need to find our own two legs to stand on, and occasionally a single one.

The politics of Cage-Cunningham are not only social but also politics of perception: not only leveling power relationships between collaborators, but also working against hierarchy in the interrelations between our senses. This implies a reformulation of how we relate to ourselves in making sense of our perceptions as well. Do we assume that what naturally goes together must be real and true, or do we attempt to take each moment and each element on its own terms, maintaining a critical zone in which each sense combination is provisional.

The Cage-Cunningham perspective on music has filtered out into the contemporary dance world since the 60s, especially through its direct influence on the Judson Dance Theater. The Judson choreographers relentlessly reconfigured dance-music relationships and upended expectations about music's constituting role in dance performance. Today it is commonplace for choreographers to consider the role of music in their creative process intentionally, including the idea of rehearsing in silence and adding relatively independent music closer to the performance. As composers entering into collaborations with choreographers we can look to Cage as a role model for how to engage productively. This means resisting the role of accompanist, but it also means much more. We must take seriously the question of how to facilitate a circulation of working methods between composition and choreography. We must also work against

certain tendencies of “collaboration.” We must focus on possibility rather than necessity.

And we must proceed in “good faith.”

Chapter 2

Interactive Dance

The phallogocentric origin stories most crucial for feminist cyborgs are built into the literal technologies—technologies that write the world, biotechnology and microelectronic—that have recently textualized our bodies as code problems on the grid of C³I [command-control-communication-intelligence]. Feminist cyborg stories have the task of recording communication and intelligence to subvert command and control.

—Donna Haraway, *A Cyborg Manifesto*⁹⁵

In computer music, collaboration with dance is usually discussed in terms of interactive technology. Music-dance relationship is developed not through interaction of collaborators, but through motion capture data as an input for an interactive computer music system. In contrast to Cage and Cunningham or much contemporary dance influenced in one way or another by Cunningham as well as choreographers of the Judson Dance Theater, creators of interactive systems presuppose that a close, direct relationship between music and dance is desirable. Otherwise, after all, the interactive system would not be necessary. A non-interactive system would suffice.

Interactive dance is also part of the broader field of research into new controllers for digital music performance. All musicians—even those with no interest in dance—are

95. Donna Haraway, “A Cyborg Manifesto (1991),” in *The Cybercultures Reader*, ed. David Bell and Barbara M. Kennedy (New York: Routledge, 2000), 311.

aware of a close analog to dance-music relationship: how an instrumental performer's movements correspond to the resulting sound. We use dance as a metaphor to describe instrumental gesture: a pianist's fingers dance across the keys. In computer music we are all the more aware of this relationship as it is intertwined with changes in music technology.

With contemporary digital instruments even if a "natural" relationship between gesture and sound is seen as desirable, this relationship is in fact entirely arbitrary. That is, the relationship is defined by an algorithm. And that algorithm or mapping may or may not take into account the performer's gesture in relation to the physical characteristics of the instrument. When I blow into an EWI, the resulting sound could resemble a saxophone, but it could also resemble a flute. Equally, it could resemble a timpani or a space shuttle launch. Intriguingly, the result need not be a sound at all. It could be a pyrotechnic effect; or a bank transaction.⁹⁶ The result could be any action that a computer can control, resulting in potentially radical disconnections and reversals of expectation.

The point here is that the relationship is at least potentially as flexible as the relationship between movement and music in contemporary dance, where sounds and movements are just as likely to be related according to a collage principle as by any

96. Many a musician has dreamed of being paid per note, while others have dreamed of charging musicians for extra or wrong notes (James Brown). I am not aware of any examples of MIDI being used to make these dreams a reality. And why not?

predictable or “natural” relationship.⁹⁷ As in dance, the relationship between gesture and sound is limited only by aesthetics and perhaps also by the audience’s horizon of expectations.

In the field of electronic and computer music the question of music’s relationship to gesture is fundamental and has a long history. In recordings and acousmatic music the physical gestures of the performer or the physical actions resulting in a sound are no longer visible, calling the relationship between sound and action into question. This has a precursor in the design of Wagner’s theater, which shields the orchestra completely from view so as to hide the musicians’ movements and immerse the audience in a more complete fusion of music and stage action.

Mechanical instruments have long provoked anxiety about abstraction of the relationship between gesture and sound. Béla Bartók observed that the problems of mechanical music had a long history going back to the levers of the piano which separate the performer’s hand from the string.⁹⁸ The voice—with its direct connection to sound and ability to shape sound expressively—was the ideal that no instrument would fully achieve. But the piano was quickly modified with the Janissary pedal, opening up the

97. For a survey of ways that contemporary choreographers have used music since the 70s and 80s, see Sally Banes, “Dancing (with/to/before/on/in/over/after/against/away From/without) the Music: Vicissitudes of Collaboration in American Postmodern Choreography,” *Choreography and Dance* 1, no. 4 (1992).

98. Béla Bartók, “Mechanical Music (1937),” in *Béla Bartók Essays*, ed. Benjamin Suchoff (New York: St. Martin’s Press, 1976), 289–298.

possibility of the same gesture triggering entirely different instruments (a hammered string versus a struck cymbal). These different timbres could be increasingly distant, both physically and culturally. Theater organs achieved an extreme in both senses, a depressed key triggering any number of different *exotic* sound effects via compressed air. A diversity of sound production methods (percussion, whistles, thunder sheets) is hidden in the walls of the theater, allowing sound effects to magnetize to actions on the screen.

Seeing past the potential dangers of disconnection, composers have been quick to take advantage of these possibilities, imagining ways for musical structure to be freed from the confines of gesture, for example in the impossible ultramodern ragtime of Conlon Nancarrow. Composers since Edgard Varèse have delighted in the possibilities of the electronic medium and the elimination of the constraints of conventional instrumental performance (and performers). Electricity has also enabled more complex mechanisms and increased decoupling of interface and sound production in the form of voltage control, thus the Theremin and also the various control devices that can be used with modular synthesizers. All of these have served to expand the possibilities of live performance rather than decreasing its importance.⁹⁹

99. Tara Rogers' alternate history of electronic music focusing on Clara Rockmore suggests how performance with an uncanny, unfamiliar interface did not get in the way of accessibility, but in fact made electronic music more compelling for audiences. Tara Rodgers, "Introduction," in *Pink Noises: Women on Electronic Music and Sound* (Durham, NC: Duke University Press, 2010).

It's easier than ever to capture and map data from sensors to parameters of real-time digital synthesis. The increasing variety of sensors that come built-in to mass-produced mobile and wearable computing devices has made gestural control accessible to even beginning computer music students. All that's standing between your synthesis algorithm and a physical gesture—by way of video motion tracking or accelerometer data—is, perhaps, a quick download of a Max external. And this means that it's also becoming commonplace for us to think of the relationship between performance gesture and musical sound as a compositional parameter. Composers continue to lead the charge in exploiting these new possibilities.

Dystopian Anxieties

But anxieties about the disconnect between gesture and sound in music technologies continue to crop up as well. These anxieties are dramatized in interactive dance works through the frequent appearance of science fiction imagery. The flavor of science fiction most often depicted is not hopeful, but dark and dystopian. We're more likely to be reminded of RoboCop's grim vision of a future Detroit than, say the bridge of the starship Enterprise.

Take for example *Seine hohle Form*, a collaboration between choreographer Robert Wechsler, composer/programmer Butch Rovin, and interactive system designer

Frieder Weiss.¹⁰¹ (Wechsler and Rován, and this work in particular, are frequently cited in the computer music literature on interactive dance.)¹⁰² Quiet wooshes of filtered noise give the impression of a barren, unfriendly landscape. The solo female dancer at the opening of the piece is alone but for this cold synthetic wind. When she is joined by a male dancer upstage, his aggressive, angular movements trigger aggressive, hard attack sounds: squelches, jitters, and scrubs. His movements might be a powerful robot booting up and tuning its servos.¹⁰³ The movements are simple, large, and halting at first, growing finer and more complex as the solo continues. But this is not a well-tuned machine. The abstract sound effects which accompany his movements evoke glitchy malfunctioning or a futuristic engine that won't quite start. The alien wind can still be heard in between the sound effects, along with echoes trailing off from the bursts of robo-noise which further suggest a vast, harsh landscape receding into the darkness beyond the isolated pools of theatrical light.

The image of dancer as robot is also prominent in another frequently-cited interactive dance work, Tomie Hahn and Curtis Bahn's *Pikapika*.¹⁰⁴ Sensors actuate a

101. My descriptions and analysis are based on a video of the performance: Robert Weschler, Butch Rován, and Frieder Weiss, *Seine Hohle Form*, 2000, accessed February 9, 2015, <http://vimeo.com/8895552>.

102. Toenjes, "Composing for Interactive Dance."

103. Servos as in servo motors commonly used in robotics.

104. My descriptions and analysis are based on a video of the performance: Curtis Bahn and Tomie Hahn, *Pikapika.mov*, 2003, accessed September 28, 2014,

rich, complex, real-time sound design for a solo performer embodying an anime-inspired character. While anime imagery frequently plays up the collision of robotic elements and futuristic weapons with waifish, scantily clad heroines (Aeon Flux, Ghost in the Shell's Motoko Kusanagi), Pikapika is solid and powerful.¹⁰⁵ Silver metallic tights suggest that we might understand parts of her body to be machined from steel. Visible wires connect devices on her arms and a Batman-esque utility belt to a backpack which presumably contains additional devices to extend her body's capabilities. Her sound design consists of crunching, banging, clacking, snapping, and winding motors—layered at varying speeds that suggest much heavier-than-human weight and stronger-than-human force. These are abstracted variants of the techniques used in film sound design to give the impression of weight and substance to CGI figures or miniature models. And as in film, surround sound gestures expand Pikapika's swirling reach in space.

But for all this technological power, Pikapika's movement comes only with difficulty. The dance vocabulary of this piece is constrained and deliberately robotic. The performer walks around the stage like a life-sized automaton with limited range of

http://www.youtube.com/watch?v=GSBM-RXSWzY&feature=youtube_gdata_player. Bahn and Hahn also published an oft-cited article describing the work: Curtis Bahn and Tomie Hahn, "Pikapika: The Collaborative Composition of an Interactive Sonic Character," *Organised Sound* 7, no. 3 (December 2002): 229–238.

105. Bahn and Hahn do cite anime as a reference, but the specific pointers to anime characters are from my own admittedly limited exposure to some of the more popular examples of the genre. Nonetheless I think a comparison of a Google image search for "Motoko Kusanagi costume" to Pikapika's costume is convincing.

movement and speed. Her facial expressions are similarly limited to a narrow range of flat-affect scowls. Distorted, pixilated digital video further suggests malfunction. Technology is blocking rather than facilitating our understanding of what this character is up to and how we might interpret her actions. This is a vision of integration of human and machine that seems tense and precarious.

Restoring the Place of the Body

Many composers think about their interest in new technologies for gestural control not as a continuation of a theme that has been part of electronic music from the start, but as addressing a fundamental problem with the field. It is not uncommon to find statements in contemporary computer music literature such as this from a 2001 paper by Bahn, Hahn, and Dan Trueman: “Musical performance in a cultural context has always been inextricably linked to the human body, yet, the body has played only a minor role in the creation and performance of electronic music.”¹⁰⁶ Or this from 2012 NIME paper: “As is often commented on, performing with computers allows for many new and exciting sonic possibilities, but many times with a weak or missing connection between the actions of the performer and the output sound.”¹⁰⁷ Computers promise limitless

106. Bahn, Hahn, and Trueman, “Physicality and Feedback: A Focus on the Body in the Performance of Electronic Music.”

107. Ståle A Skogstad et al., “Developing the Dance Jockey System for Musical Interaction with the Xsens MVN Suit,” in *Proceedings of the International Conference*

possibilities for creating expressive musical sounds. They offer the composer the opportunity to work *in* sound but *out of* time. Unlike the piano, a synthesis algorithm can shape many changing parameters over the course of a note. And these expressive parameters can be controlled with great precision. But if we want to add live performance back into the equation, then how do we offer performers and audiences access to this realm of possibility as well? How can the performer relate to the computer as a musical instrument? And how can the audience understand what's going on if there's nothing to see?

Interactive dance pieces are preoccupied with technology's relationship to the body—as discussed above in the appearance of dystopian cyborgs as characters. These pieces seem to worry about what is essential in the body that will be lost by closer integration with technology. *Loopdiver*, for instance, a 2009 work by Troika Ranch, one of the most prominent professional dance companies working with interactive technology, explores the dehumanizing effects of a media-saturated environment.¹⁰⁸ An ensemble of dancers virtuosically executes choreography learned from video loops of various lengths. In performance the hard splices are reinforced by synchronized sound

on New Interfaces for Musical Expression, 2012, accessed September 27, 2014, <https://www.duo.uio.no/handle/10852/9101>.

108. My descriptions and analysis are based on a video of a 2010 performance: Troika Ranch, *Loopdiver* (The Dance Center at Columbia College, Chicago, 2010), accessed February 9, 2015, <http://vimeo.com/115143505>.

loops. *Loopdiver* suggests that we might wonder not just about the dangers of futuristic implants or realistic androids, but also the dangers of our current daily experience, already permeated with technologies that write dysfunctional behaviors onto our bodies and disrupt the most intimate human relationships.

Stepping back for a moment, we should remember that the musical world at large is not too concerned about the dehumanizing effects of “fixed” or “non-interactive” media in music. The phenomenon of looping is well-known in popular music, where it is just as likely to be heard as empowering or liberating as sinister and confining. And the alleged problem of music’s divorce from gesture is peculiar to the context of acousmatic concerts seldom seen outside of academic contexts. The popular acousmatic performance of bedroom record players, Walkmans/iPods, and electronic dance music have other ways of integrating successfully with social context—social dancing for starters, or serving as ambient music to accompany other activities. The problems seem to start when the audience is compelled to sit still in the dark and listen. We can think of the composer hitting the space bar to trigger an entire composition as another extreme of arbitrariness in mapping between gesture and sound, and one that’s much more familiar in computer music circles than my imagined EWI triggering a bank transaction. While it’s true that this context has its problems, it also has the danger of serving as a straw man. It’s unknown in the broader world to the extent that a musician like Tim Hecker can make a gimmick out of the acousmatic format in a broader live art context, framing computer

music performance in a darkened concert hall¹⁰⁹ as an “immersive sensory experience.”¹¹⁰

But in any case some researchers of gestural practices for computer music see the gestural-social disconnect as such a dire problem that they imagine audience surveys may be necessary as a test of an interface’s legibility.¹¹¹ The decoupling of gesture and sound is seen less as a situation with creative potential—for instance, the potential of audiences to use their imaginations while sitting still in the dark, or as an ideal situation for structural listening—and more as a deficiency to be repaired. One group of researchers says: “To overcome this problem of missing or unnatural action-sound couplings, we are trying to develop pieces in which properties of the output sound match properties of the performed actions.”¹¹² The bond of music and gesture has been severed, and it must be healed. The future of computer music as a viable art form in our society—one that can communicate with audiences—is at stake. These investigations go to great lengths to

109. My characterization of the performance is based on an email conversation with an audience member: Milka Djordjevich, e-mail message to the author, October 3, 2014.

110. “Tim Hecker,” *PICA*, accessed October 3, 2014, <http://pica.org/event/tim-hecker/>.

111. Skogstad et al., “Developing the Dance Jockey System for Musical Interaction with the Xsens MVN Suit.”

112. *Ibid.*

develop mappings that seem “natural” in an attempt to recover what has presumably been lost in the abstraction between performance interface and sound production.

Collaboration with dance has often been approached in computer music circles as a subset of the music and gesture problem. According to this logic, music-dance relationship is seen as a problem of the dancer’s disconnection from electronic media. This issue can be addressed with interactive technology, the success of which can be assessed by using surveys to gauge the satisfaction of dancer-participants.¹¹³ In this extreme case, the new technology is meant to conform to expectation rather than offer new or disruptive possibilities.

Decoupling and Recoupling of Music and Dance

The parallel between “gestural control” and “dance” is dramatized from a very different perspective in the recent stage show by Swedish electronic band The Knife.¹¹⁴ The show opens with a few numbers featuring imaginative, sculptural custom-built electronic instruments. But this gradually gives way to what could be better described as

113. Michael Krzyzaniak et al., “Separation: Short Range Repulsion,” in *Proceedings of the International Conference on New Interfaces for Musical Expression*, 2014, 306, accessed September 26, 2014, http://nime2014.org/proceedings/papers/279_paper.pdf. Bizarrely, this kind of audience response study is a kind of inversion of Babbitt’s desire to make music into science. Not “who cares if you listen” but “your listening is our object of study.” Not music which requires impossible effort, but music which requires no effort. To extend Brecht’s culinary metaphor, it’s predigested.

114. “The Knife” (presented at the Terminal 5, New York, May 1, 2014).

contemporary dance with mostly pre-recorded music. By the close of the show any trace of an instrumental relationship between the performance and the sound emanating from the PA has been lost. It's simply live dancing to pre-recorded electronic music. Most of the members of the "band" are dancers, not musicians. And the audience seems perfectly happy to be craning their necks in a crowded rock venue to see some athletic dance moves rather than a geek behind a laptop.

The technologically-enabled decoupling of gesture and resulting sound turns instrumental musical performance into a category of dance. Since the relationship between gesture and sound is no longer one of absolute necessity, a performer can render the gestures of an instrumental performance—with or without a prop that resembles to whatever degree a musical instrument—or they can perform an abstract dance that relates to the music in some other way. We could equally trace this realization back to pieces by Mauricio Kagel, Morton Subotnick, and others from the 60s onward that incorporate theatrical gestures not directly tied to sound production. Subotnick's *Play* series (1964-65) for example, mixes instrumental performance with specified theatrical gestures to humorous and satirical effect.¹¹⁵

Put another way, creatively decoupling gesture from music in performance need not rely on advanced technology. All that is needed is either an expansion or a separation

115. Morton Subotnick, "Morton Subotnick: Interviewed by David W. Bernstein and Maggi Payne," in *The San Francisco Tape Music Center: 1960s Counterculture and the Avant-Garde*, ed. David W. Bernstein (Berkeley: University of California Press, 2008), 130.

of roles. But in the context of western art music performance, we do not view all gestures equally. There is a hierarchy of gestures from the “real” to the merely “choreographed.” There are the *actual* sounding gestures of musical performance and the *ancillary* gestures.

Here is an example of the hierarchy at play in computer music discourse: “In...’tape-music’ concerts...and in certain popular-music/performance contexts...exaggerated gesture along with extreme amplification...create exciting connections between performers and sound production in high volume contexts (these connections are sometimes real and other times simply choreographed).”¹¹⁶ Never mind the fact that movements which are “simply choreographed” are not always so simple. It’s one thing if we’re talking about the gratuitous pelvic undulations of a schmaltzy hair rocker, but much choreography—even for *mere pop concerts*—is more substantial and potentially meaningful.

Given the history of music technology and the current context of computer music research, it’s logical that the majority of discussion of dance in the field is not about the aesthetics of music-dance relationship per se, but about dance movement as an input for computer music systems. This work seeks to bring the *ancillary* gestures of dance into a central role with *actual* sounding capability. Computer music perhaps has a habit of seeing *anything that can be digitized* as a potential input for a computer music system.

116. Bahn, Hahn, and Trueman, “Physicality and Feedback: A Focus on the Body in the Performance of Electronic Music.”

But the increasing ease with which *anything can be digitized* cannot seduce us into substituting parameter mapping for critical thinking. As composers, our job is to explore a diversity of paradigms beyond what is obvious or “natural.” And as composer-technologists, our job is to question how our engagement with the digital either aligns with or resists the priorities of dominant paradigms such as technological capitalism.

In the case of interactive dance in particular, there is a danger of complicity with the ever-expanded textualization of the body described by Haraway. Designers of gestural interfaces for music certainly do have something to learn from examining connections to dance.¹¹⁷ But approaching collaboration with dance from an instrument design perspective can lead to just this sort of complicity.

The relationship between dancer and music in performance is fundamentally different than the relationship between a musician and the sound they produce. And it is not the case that the dancer’s relationship to music is some simple inversion either—that the musician’s movements produce music, while the dancer’s movements are produced *by* music.

There is no such thing as a single obvious, best, or “natural” relationship between gesture and sound that must be maintained or restored when it comes to computer music.

117. The potential value of dance training for developing body awareness for performance with gestural interfaces is discussed by Mary Mainsbridge and Kirsty Beilharz, “Body as Instrument—Performing with Gestural Interfaces,” in *Proceedings of the International Conference on New Interfaces for Musical Expression*, 2014, accessed September 27, 2014, http://nime2014.org/proceedings/papers/393_paper.pdf.

Pursuing such a relationship at the expense of exploring new possibilities would be like griping at the dehumanizing effects of the player piano rather than taking advantage of Nancarrow-ian super-human possibilities. New technologies need not replace or imitate old technologies.¹¹⁸ Just as electronic instruments should not be hobbled by the paradigm of the keyboard, dance technology need not replicate the most familiar or expected paradigms of music-dance relationship. We cannot confine our thinking to replacing what seems to be lost with new advances.

And if there is no such thing as a necessary “natural” relationship between gesture and sound in instrumental music performance, then there *certainly* is no such thing in the relationship between *dance* and music (recall Cage’s call for possibility over necessity from Chapter 1). On the contrary, dance often seeks to relate to music in unexpected ways. Choreographers and composers work together to craft the dynamics of this relationship to creative effect. They compose not only their respective arts, but also craft the relationship between them compositionally.

Much of the dance work in our field seeks to turn the dancer into a musician of sorts. This is described as having a liberating effect for the performer, who can now control the music rather than being controlled by it. Dancers, however, do not need to be

118. “Most inventors of electrical musical instruments have attempted to imitate eighteenth- and nineteenth-century instruments, just as early automobile designers copied the carriage.” John Cage, “The Future of Music: Credo (1937),” in *Silence* (Middletown, CT: Wesleyan University Press, 1961), 3.

freed from the tyranny of music. And even if they did, the solution would not be to simply reverse the putative relationship of domination.

Freeing the Dancer, Restoring the Dancer's Voice

Thinking about dance in terms of the “body as instrument” metaphor can also have the unexpected result of portraying dance as a kind of neutered musicianship. In this view, the dancer in a standard or “non-interactive” performance situation is thought to be “dancing” the music in the same way that a musician would be “playing” the music; the musical accompaniment for contemporary concert dance is still after all commonly referred to as a “score,” a remnant from the history of ballet. Extending this analogy, dance is then a variant of instrumental performance where the player cannot influence the sound. They are but a “slave” to the unresponsive composition or track. There is a parallel here to the so-called “tyranny of the tape” in the tradition of composition for instruments and tape.¹¹⁹ Dance is seen as a variant of music-minus-one performance. It’s like karaoke, but with movement instead of voice.¹²⁰ Take this characterization of the sorry state of dance for instance, from an article in *Computer Music Journal*:

119. “The tradition of ‘tape and instrument’ composition creates a certain ‘tyranny of the tape,’ leaving a performer to chase the unyielding progression of the fixed media play-back.” Bahn, Hahn, and Trueman, “Physicality and Feedback: A Focus on the Body in the Performance of Electronic Music,” 3.

120. Serious karaoke performers would no doubt object to a characterization of music-minus-one performance in terms of “tyranny of the tape” as well. See Mark Katz, “The Amateur in the Age of Mechanical Reproduction,” in *The Oxford Handbook of*

Traditionally, music and dance have been complementary arts. However, their integration has not always been entirely satisfactory. In general, a dancer must conform movement to a predefined piece of music, leaving very little room for improvisational creativity.¹²¹

This limited view of dance assumes either pre-recorded music or, perhaps, an ensemble that does not watch the dancer, but proceeds of its own accord.

This preoccupation with music as a cage from which dance must escape appears frequently in interactive dance works. Recall the constrained robotic movement of *Pikapika*, combined with video imagery that evokes surveillance camera footage and an interactive system that seems to be watching her every move with digital precision. And in *Seine hohle Form* the theme of imprisonment by music is explored more explicitly. The piece opens with a dancer who extends straight arms then a pointed toe into the space around her, seeming to summon slow-attack synthesized tones from the air. A raised, clenched fist brings sounds to a stop. But what at first seems like a magical musical ability is later recontextualized as a system of confinement. She gathers herself and stands tall, arms sweeping upward dramatically.¹²² With a spiraling turn she breaks free of her responsibility to the tones and runs across the floor. But what at first seems like

Sound Studies, ed. Trevor Pinch and Karin Bijsterveld (New York: Oxford University Press, 2011), 459–479.

121. Morales-Manzanares et al., “SICIB,” 25.

122. This sequence starts around 6:00 in the video. Weschler, Rován, and Weiss, *Seine Hohle Form*.

new freedom is perhaps only an opportunity to reflect more openly on her previous confinement. As she crisscrosses the floor her gestures suggest different traps or obstructions. One arm binds the other to her torso. She attempts to shake her wrists apart as if battling invisible shackles. Then her arms are bound behind her back and she turns to show us. She breaks free in slow motion as if we're seeing a dream of escape rather than actual freedom. And with another turn she finds herself once again within the grid of sonic control.

The dancer at moments seems stiff, nervous to move under the nervous gaze of the panoptical motion tracker. She stops, hesitates, eyes dart from side to side, scheming about how to break free, lips parted, attempting to control her breathing as if hiding from the machine vision system.¹²³ A computer operator is visible in the background, not watching the stage, but a glowing screen.

Dance does not need to be freed from music. Interactive dance work that proceeds from some notion of music-dance relationship derived from a superficial understanding of ballet ignores developments in twentieth century ballet (The Ballet Russes, Anthony Tudor, George Balanchine), modern dance (in general), and especially dance since 1950. This could be seen as an example of a broader problem in computer music, which too often seeks to bridge new technologies with an imagined distant past or "pure" cultural other, while ignoring relevant recent history and context. The rhetoric of "bridging past

123. This is around 6:50. *Ibid.*

with future” or merging “tradition” with advanced technology can be found prevalently in “hyper-instrument” work, for instance, as well as in interactive dance.

Following this way of thinking, the imagined “conventional” or “non-interactive” dance is constituted fully through its relationship with music. It cannot communicate unless music lends it a voice, and even in that case it can say nothing more than the words music puts in its mouth. Interactive systems claim they can “provide the dancer with the flexibility of performer nuance and inflection usually associated with musicians rather than dancers.”¹²⁴ Dancers are apparently impoverished by their inability to shape the sounds in performance. Presumably their highest hope could be to visualize music.

Even if we know nothing of contemporary dance we should be able to imagine the situation of a dancer performing in silence or with improvising musicians that watch, respond, and interact. But this is in fact the false problem that interactive technology would step in heroically to solve. Sensors confer upon dance the ability to write. They give dance a voice by making movements audible. Thus audible, dance also acquires the new ability to dialog with music and musicians. This is how an interactive system can claim that it “allows musicians and dancers to interact and improvise dialogues during the course of the performance.”¹²⁵ The musicians to whom the dance was previously either invisible or illegible can now hear it.

125. Morales-Manzanares et al., “SICIB,” 26.

But choreography does not need music to confer upon it the status of writing—to constitute it as a semiotic system. The dancer does not need an instrument to restore her voice.¹²⁶ If musicians wish to “dialog” with dancers (and this in and of itself may be a questionable goal) then they can “read” the movement. Movement is, after all, no less a “universal language” than music.

The phenomena of synchronization and mimesis in dance-music relations are well known. If we lose ourselves in a desire for “the dancer to simultaneously articulate sound and gesture,” reuniting two art forms like long-lost siblings separated at birth, we risk sacrificing the power the forms wield separately.¹²⁷ When we write for the piano, we do not mourn the separation of the left and right hands, longing for an imagined past in which humans possessed a single ten-fingered appendage. We celebrate their independence, as well as the richness of their connection through the performer’s body.

126. Following Dan Trueman and Perry Cook’s work on using sensors with speakers, Curtis Bahn speaks of a desire to “reconnect interactive electronic sound with the musical body producing it” as well as using the dancer-mounted speakers to “restore the ‘voice’ of the performer.” Bahn and Hahn, “Pikapika: The Collaborative Composition of an Interactive Sonic Character,” 231. Contemporary dance artists since the 60s have importantly and successfully refused to be mute dancers, integrating the actual voice of the performer into dance works. To claim that new technology is necessary to restore the performer’s voice not only demonstrates an ignorance of the dance context, but works towards silencing both historical and current dance “voices.”

127. “In our pieces for interactive dance the sensual parameters of sound and vision become fused. While historically (Western art) music has accompanied dance, or the dancer has been bound to the strictures of music, interactive performance environments enable the dancer to simultaneously articulate sound and gesture.” Bahn, Hahn, and Trueman, “Physicality and Feedback: A Focus on the Body in the Performance of Electronic Music,” 4.

We have no need for additional technology for the left hand to know what the right hand is doing, even if we seek to write in a way that frees the hands from their conventional roles. And so should it be with music and dance.

Technology and Gender

Interactive technology ties music more closely to the performer's body, suggesting that music and sound play a more direct role in expression of a performer or character identity rather than accompanying or creating an environment. When we experience a sound as being made by the dancer, we are likely to take it as an aspect of their role in the piece rather than a separate entity. The creators of *Pikapika* think of the role of sound in the work explicitly in terms of creating a "sonic character."¹²⁸ In *Seine hohle Form*, two dancers are introduced with solos in which their movements control contrasting sound material. The female dancer is paired with soft-attack tones while the male dancer triggers aggressive, hard-edged bursts of technological noise. *Pikapika* traffics in similar gendered stereotypes in its sound material, albeit inverted to stage a feminist intervention. Interactive dance tends to force questions about gender and technology, whether or not they are addressed by the works or the discourse around them. Explicit incorporation of technology intensifies the already gendered character of music-

128. Bahn and Hahn, "Pikapika: The Collaborative Composition of an Interactive Sonic Character."

dance relationship as the largely male-dominated field of music encounters the largely female-dominated domain of dance.

This is especially true when the technologies at play resemble medical technologies. Some of the sensors used in interactive dance did get their start as medical devices, and many of them behave like or read theatrically as medical devices. There are extreme examples, as when a dancer is fitted with a particularly medical-looking device to measure their respiration and send the data to an interactive music system.¹²⁹ The authors of that particular study note that “[the dancer] claimed that the mask made him more breathless after he moved a lot, and [made it] hard to control the respiration, which caused the respiration pattern [to be] more fluctuating and irregular.”¹³⁰ This troubling example may be an outlier of sorts—dance technology is seldom quite so invasive—but less extreme methods of capturing bodily movement have troubling implications as well. We should recognize that medical devices for measuring and visualizing bodies—especially women’s bodies—have a fraught history going back to the speculum. To paraphrase the Haraway quote in the epigraph for this chapter, this is another origin story—along with the lineage of musical instrument technology—that is built into the technology of interactive dance.

129. Jeong-seob Lee and Woon Seung Yeo, “Real-Time Modification of Music with Dancer’s Respiration Pattern,” in *Proceedings of the International Conference on New Interfaces for Musical Expression*, 2012, accessed September 27, 2014, http://www.eecs.umich.edu/nime2012/Proceedings/papers/309_Final_Manuscript.pdf.

130. *Ibid.*

Haraway notes that “women’s bodies have boundaries newly permeable to both ‘visualization’ and ‘intervention.’”¹³¹ Today, ultrasound imaging is a common sight in abortion debates. These images are used to portray fetuses as independent beings with their own human rights. Mandatory ultrasounds for women who plan to terminate pregnancy are wielded as a tool of state control over women’s bodies. This is precisely what is at stake in unnecessary imaging of bodies. The burden of proof is much heavier than vague claims about “artistic possibilities” and “exploration” will bear. As composers we must consider whether our explorations are compatible with our values. If we seek to free the dancer with this technology, then we might start by envisioning works as sites of resistance to larger forces seeking to limit the autonomy of actual women.

On the other hand, we can take inspiration from artists who have engaged critically with other sorts of medical technologies. We can think of Eduardo Kac’s interventions in genetic engineering that urge us to consider the status of genetic mutants in our society as well as the relations between humans and animals.¹³² We can consider Orlan’s radical body modifications.¹³³ Stelarc’s work in particular comes to mind when

131. Haraway, “A Cyborg Manifesto (1991),” 306.

132. Eduardo Kac, “GFP Bunny” (2000), accessed March 17, 2015, <http://www.ekac.org/gfpbunny.html>.

133. Orlan, “I Do Not Want To Look Like...,” *Women’s Art Magazine* 64, no. May/June (1995): 5–10.

we think about how technology makes the body increasingly permeable.¹³⁴ We can think of his data-actuated muscles as a kind of inversion of motion tracking. Rather than using movement to create data he uses data to create movement.

Can we imagine a computer music work using interactive technology in collaboration with dance that adopts a similarly critical approach? One that truly problematizes boundaries between body and machine?

Again following Donna Haraway, I would like to suggest that the world of cyborg dance can be seen in one of two ways:

From one perspective, a cyborg world is about the final imposition of a grid of control on the planet, about the final abstraction embodied in a Star Wars apocalypse waged in the name of defense, about the final appropriation of women's bodies in a masculinist orgy of war. From another perspective, a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints. The political struggle is to see from both perspectives at once because each reveals both dominations and possibilities unimaginable from the other vantage point.¹³⁵

This is one possible rubric for evaluating the use of technology in any work of art, and it is especially relevant for interactive dance. Which perspective does the work embody? The first? Or perhaps a dystopian representation of the first, which merely plays into comfortable liberal progressive attitudes? What does it look like when interactive technology is used in a way that enhances our ability to feel "kinship with animals and

134. Stelarc, "Prosthetics, Robotics and Remote Existence: Postevolutionary Strategies," *Leonardo* 24, no. 5 (1991): 591–595.

135. Haraway, "A Cyborg Manifesto (1991)," 295.

machines?” Or embrace “permanently partial identities?” Does it support or work against the “natural matrix of unity?”¹³⁶ Does it work for or against the “all play”¹³⁷ of the “informatics of domination”?

When we can encounter a cyborg, we can ask whether she is of a kind to lead us out of the maze of dualisms, or whether she bolsters the matrix of dominations. Is she simply reversing familiar stereotypes for instance, or is she complicating our understanding of binaries such as animal/machine, man/woman, etc.¹³⁸

To recap, computer music has tended to see dance in terms of a “naturalistic” view of gesture in instrumental performance. Our field has a heightened awareness of gesture because electronic and computer-based instruments force us to define the relationship between music and sound rather than taking it for granted or relying on existing conventions of instrument design and performance practice. There’s a potential kinship here with contemporary dance, which also does not take the relationship between gesture and music for granted, but treats it experimentally and flexibly in a multitude of

136. Haraway, “A Cyborg Manifesto (1991),” 297.

137. *Ibid.*, 300.

138. I am not the first to point out that Haraway’s work may be relevant to interactive dance. See especially Bahn, Hahn, and Trueman, “Physicality and Feedback: A Focus on the Body in the Performance of Electronic Music.” My interpretation, however, differs significantly. I believe Haraway’s framework has more value as an open-ended provocation to critical engagement with technology than as evidence that any one particular artwork is “critical.” In reference to this article I would also draw particular attention to the distinction between disrupting and destabilizing familiar binaries versus merely *representing* these binaries.

ways. But there's a long history of gesture-music disconnect provoking anxiety amongst musicians while also opening possibilities for composers. A similar duality is at play in contemporary computer music discourse: excitement about new forms of gestural performance on the one hand, and anxiety about accessibility of "non-interactive" formats on the other. Researchers who focus on this anxiety over accessibility see the gesture-music disconnect as a problem to be solved rather than a rupture with creative potential, leading them to focus on "natural" mappings. This view, however, is counterproductive when it comes to conceptualizing music-dance relationship in collaborative processes. It works against dance's autonomy as an art form, which is fundamental as a starting place for any contemporary composer-choreographer collaboration. It reinforces redundancy between music and dance rather than a flexible, composed relationship between the mediums.

Furthermore, we should consider dance's perspective on interactive technology. The dance field does not have the same ingrained relationship to technology that we have in music, and has good reason to approach technology for capturing movement with caution rather than enthusiasm. This caution is to be celebrated, as dance can offer us an impetus for critical engagement with technology that our field too often lacks.

As cinema converges with augmented reality and wearable technology, distinctions between film sound, film music, and concerns of music and sound design and theater, will merge and collapse. This is yet another reason to think about music-dance relationship broadly and critically. This will be an important way to understand music-

media relationships in general as the space of the screen expands in various ways into/onto/around the body and permeates the spaces of our lived environment.

In conclusion I'll add that there's another way to understand computer music's interest in dance, and that has to do with the global reach of technology. "The age of the microchip has enabled ubiquitous computing to permeate culture internationally. [...] However, as a society, as we move further into the future, we must continue to look in to [sic] our past to extend traditional techniques into modern practice."¹³⁹ As our field expands to incorporate non-western traditions, it must necessarily deal with the fact that many of those traditions do not separate dance from music in the manner of the west.¹⁴⁰ This expansion will lead to approaches to dance in computer music that will complicate and enrich the concerns I've outlined above.

139. Ajay Kapur et al., "New Interfaces for Traditional Korean Music and Dance," in *Proceedings of the International Conference on New Interfaces for Musical Expression*, 2013, 45.

140. This is suggested by the influences of *Pikapika* as well as by Aurie Y. Hsu and Steven T. Kemper, "Shadows No. 4: Belly Dance and Interactive Electroacoustic Musical Performance," in *CHI'10 Extended Abstracts on Human Factors in Computing Systems* (ACM, 2010), 3117–3120.

Part Two

Music for Eleanor Bauer's Triangle Trilogy

In Part Two I discuss, describe, and analyze the music and sound I composed for a series of three pieces by choreographer Eleanor Bauer. These pieces premiered in 2011, 2012, and 2013 at the kaaitheater in Brussels. The trilogy is in a sense ongoing as the last piece has continued to develop through subsequent revisions for performances in 2014, and more performances are scheduled for the future (performances to date are listed in Appendix D).

Rather than discussing “the music itself” in isolation, I will view the trilogy as a whole, including my own perspective on the dance, visual design, and other “non-musical” elements. I want to build up an understanding of the work based in how it comes across as an experience. So I will offer my own interpretations of the “non-musical” as well as the “musical” elements.

Let me be clear that I do not intend to speak for my collaborators. Eleanor has spoken about these pieces in press materials for the works as well as in a number of interviews.¹⁴¹ We have spoken about them together in public post-performance discussions. The views of the dancers and other collaborators would no doubt add useful perspectives on the music and sound for these pieces too (as dancer Carolyn Brown's

141. See the “writing about dance” section in Bauer's online CV at “Bio & CV,” *Good Move*, accessed April 22, 2015, <http://goodmove.be/B-I-O-C-V>.

memoir provides much insight into the collaboration of Cunningham and Cage).¹⁴² I do not mean to substitute my voice for these voices.

But my readings of the choreography, visual design, and the work of the performers drive my compositional process. As we collaborate, the elements co-evolve according to each of our interpretations and reactions to the co-working in other mediums: the dance and music interpret and comment on the set design; the lighting develops and expands upon the dance; the performers find connections between the lighting, music, and choreographic scores; and so forth. Through my account I hope to show the benefits of approaching the domain of inter-arts collaboration as *an expanded field of performance* rather than a dialog between separate mediums or disciplines.

My discussion of the trilogy is meant to be read alongside video/audio recordings which document the performances (Appendices A, B, and C), representing a pseudo-objective, external vantage point. Because sound recording is part of my creative practice, it would seem natural that I should be concerned with capturing the sounds of the performance. But I have learned that it is to my advantage to be involved in the production of the visual documentation as well. Many videographers who shoot dance insist on shooting different angles on different nights and editing them together. Although it could be possible with the right coordination to cobble together a sound mix that makes sense with such a method, I have yet to find a videographer willing or able to manage this

142. Brown, *Chance and Circumstance*.

kind of collaboration. The planning and coordination necessary for such a task simply turns out to be beyond what is possible under the circumstances of premiering these sorts of contemporary dance works. This was the case with the video document for the first piece in the trilogy, where luckily I also set up a camera to capture a single continuous long shot of the piece that I could later sync to my sound mix. The lack of close shots is a shame, but in the end this is the best solution for my purposes here. For this video, I also edited in footage from my built-in laptop camera to give a better sense of the live music elements.

For the second piece in the trilogy I was not involved as a performer, so—with the choreographer's support—I took it upon myself to do two-camera shoot of my own. The sound recording situation was also more complicated—multiple performers singing, speaking, and playing harmonicas in-the-round—and thus required numerous microphones placed around the space to capture the scene satisfactorily.

The third piece was simpler in a sense than the other two: a frontal proscenium arrangement and only three performers. For this piece we also had an excellent filmmaker with good dance documentation experience shoot multiple performances—including a pre-premiere showing as a test. This is the kind of rehearsal and iteration that is really necessary for a successful shoot, but which is seldom actually possible in practice. As of yet, however, there are still sync problems between his footage and my final sound mix that have not been resolved. This is due—somewhat predictably—to the familiar problem of the filmmaker editing together different shots from different performances. So my

present best document is—like the video of the first piece—a single long shot from my own camera.

There are a number of challenges in making satisfying audio recordings of these pieces beyond their role as sound for video. Two of the three pieces are presented with the audience in the round, and the sounds are arranged so that different audience members will hear different mixes of sounds at different times, making the construction of a single objective “listener” a challenge. Much of the material is pre-recorded or otherwise amplified, but the speakers are placed so as to interact with the room acoustics as well. Some of the sound coming from speakers primarily reaches the audience through reflection off various surfaces of the theater’s architecture. But a straightforward classical music recording approach—one that seeks to represent the sound in the room “authentically” via a single stereo microphone pair in a standard configuration for instance—is neither possible nor desirable. For starters, there is no good place to put such a microphone that would not be too visually distracting. And the standard placement would likely be too close to the lighting instruments, which are often quite noisy. I have arrived at the solution of placing a variety of hidden close mics in the best positions available to capture different parts of the piece. These sources are then combined with “direct” recordings and/or pre-recorded, electronic, and other “fixed” materials to give some sense of the experience of the piece. Shifts in the sound mix over the course of the piece can help create a better sense of the shifts in dynamic threshold and attention that would naturally occur for a listener/viewer in live performance—for instance, the way

that one's attention may shift to the sound of the dancer's feet against the floor during a quiet moment, or the way that a sudden sound from behind might catch your attention even if it is quite soft. So though the video in this context stands as the most objective document of what happened in the performance, it is also in many ways another subjective interpretation.

Yet another difficulty has to do with the specific nature of some of my audio materials: I am often using amplified sounds that are placed in such a way as to blend with the acoustic sounds in deliberately confusing ways. The pre-recorded sounds are often alternate versions of sounds being produced by the performers, altered only subtly. At other times these recorded sounds are only projected at the very threshold of audibility, intended to have the effect of a subtle shift in atmosphere. There's often no good way to communicate this type of sound through the limited range of a video document.

The solution might be to make a true film adaptation of the work, re-choreographing for the camera, shooting on a soundstage, and reconceiving the music and sound design for film rather than as a live experience. The suggestion of undertaking this kind of project is intriguing, but such a film would no longer really be a document of the live performance. The idea of making an adaptation is something we have yet to seriously consider. One reason is that we are fundamentally concerned with making live theater. Making a film would require essentially a change of medium. And to what end? If we wanted to make a film, we might as well start over and just make a *film*.

Along with the video documents, I will describe and analyze the pieces by narrating from two perspectives: external as well as internal. I will describe the work first according to an imagined audience perspective. I often think about the audience's perspective as I work, trying to imagine layers of relationships and references that will be legible to different audience members. I do not expect (or want) the audience to hear and register every obscure detail or rationale, nor do I expect each audience member to make the same meaning from what they hear in combination with the rest of the piece. But I do think about what would be plausible for an attentive, open, non-specialist (but also non-neophyte) audience perspective to take in.

In describing the audience perspective I take some inspiration from Christopher Small's detailed, phenomenological description of the familiar concert hall experience:

We take our allotted seats, which for tonight's concert are in the middle of a row between two aisles. When the other seats in the row are taken, we shall have to stay here for the duration of the performance; there will be no moving around. Since all the seats face in the same direction, we can talk only to our neighbors in the same row and, with more difficulty, to the person immediately behind or in front of us. If the foyer was a place for socializing, this is strictly a place for looking, listening and paying attention. It is indeed an auditorium, a place for hearing. The word itself tells us that hearing is the primary activity that takes place in it, and here indeed it is assumed that performing takes place only in order to make hearing possible.¹⁴³

143. Christopher Small, *Musicking: The Meanings of Performing and Listening* (Middletown, CT: Wesleyan University Press, 1998), 26.

My conception of the audience's horizon of expectations is an important part of how I think about these performances. And in a contemporary dance performance these expectations are different than in a concert hall.

I hope you will forgive me for using the second person to explore the audience perspective on the work. I do not mean to tell you what to think or how to experience the pieces. I do not mean to suggest that I know what you would have thought or how you would have interpreted the pieces if you would have been at the performances. I intend the "you" as plural (y'all) and provisional (y'all *may*). In adopting this device I take inspiration from Italo Calvino, who makes much wilder use of second person to explore the experience of reading a novel in *If on a winter's night a traveler*:

So here you are now, ready to attack the first lines of the first page. You prepare to recognize the unmistakable tone of the author. No. You don't recognize it at all. But now that you think about it, who ever said this author had an unmistakable tone? On the contrary, he is known as an author who changes greatly from one book to the next. And in these very changes you recognize him as himself. Here, however, he seems to have absolutely no connection with all the rest he has written, at least as far as you can recall. Are you disappointed? Let's see. Perhaps at first you feel a bit lost, as when a person appears who, from the name, you identified with a certain face, and you try to make the features you are seeing tally with those you had in mind, and it won't work. But then you go on and you realize that the book is readable nevertheless, independently of what you expected of the author, it's the book in itself that arouses your curiosity; in fact, on sober reflection, you prefer it this way, confronting something and not quite knowing yet what it is.¹⁴⁴

144. Italo Calvino, *If on a Winter's Night a Traveler*, trans. William Weaver (New York: Knopf, 1979), 9.

Similarly I am interested in exploring the functioning of memory and shifts in perception in the experience of the work. Calvino also provides a model for situating the experience of the work in a broader, multisensory and social context:

The novel begins in a railway station, a locomotive huffs, steam from a piston covers the opening of the chapter, a cloud of smoke hides part of the first paragraph. In the odor of the station there is a passing whiff of station café odor. There is someone looking through the befogged glass, he opens the glass door of the bar, everything is misty, inside, too, as if seen by nearsighted eyes, or eyes irritated by coal dust. The pages of the book are clouded like the windows of an old train, the cloud of smoke rests on the sentences. It is a rainy evening; the man enters the bar; he unbuttons his damp overcoat; a cloud of steam enfolds him; a whistle dies away along tracks that are glistening with rain, as far as the eye can see.¹⁴⁵

The novel begins not on the first page, but at the moment the reader opens the cover.

Whatever is happening around you at that moment is also part of the story. In imagining a pluralistic audience perspective, I am interested not only in situating the music within the context of the choreography, décor, and lighting, but also in situating the work in the context of significant unexpected and unintentional events.

I will supplement and annotate this imagined audience perspective with one more directly related to my own: a view from within the process of the work. This will allow me to discuss the internal structure and background ideas, and, when relevant, the processes and methods by which parts of the work reached their final forms on the stage. The purpose of sharing this internal perspective is not so much to reveal the work's "true

145. Italo Calvino, *If on a Winter's Night a Traveler*, trans. William Weaver (New York: Knopf, 1979), 10.

meaning” as to elucidate the receding levels of detail which impact the audience experience in subtler ways. Without a doubt these details are alternately perceived and interpreted or missed (or ignored, or dismissed) by each audience member in turn in a multitude of ways. These details may only function subliminally, but nonetheless I believe they are interesting. So at times I will dwell on the subtler details mentioned above that would be lost in the flattening from live performance to video: speaker placement, distinctions between live and recorded, acoustic and amplified, and so forth. And I will attempt to clarify internal structures beyond what is strictly perceptible to an audience as well as the (sometimes convoluted) procedures at play. Though I am concerned first and foremost with what can be heard, I am also interested in what might be just beyond perception.

I will also analyze these pieces in terms of dance-music interactions, not just in the sense of “counterpoint” between the mediums, but in terms of conceptual and deeper formal relationships. I believe these are the sorts of relationships that actually contribute to a sense in the experience of the work of deep connection between the dance and music, the sense that the dance and the music are originating from a shared conceptual and poetic space. These connections give rise to the sense that dance and music are co-articulating a shared vision, even when they are not so obviously “in sync” in their surface formations.

Chapter 3

A Dance for the Newest Age (the triangle piece)

You enter the theater and ushers direct you to sit in risers on the stage rather than in the house. This in itself is not that unusual. It's a huge theater, and the stage alone is big enough to be used as a flexible black box for artists who don't require the seating capacity of the house's permanent risers. You've seen a performance here, for instance, where the audience was led through an installation of objects and set pieces with continuously unfolding performance. The performance was intimate and interactive in a way that



Figure 1. Empty stage at the beginning of *A Dance for the Newest Age (the triangle piece)*

wouldn't have been possible in the conventional proscenium arrangement. For the current performance, however, there is clearly an audience area and a stage area. The flexibility of

the open space has been used in another way: to create a stage in the shape of an equilateral triangle with seating in the round in three sections. The stage is black vinyl dance flooring. Tape marks out two smaller concentric triangles within the large one. You can see the audience section opposite you reflected in the floor's glossy finish. You remember that the piece has something about "triangles" in the title, and you can already see how triangles are quickly becoming a theme, even before the performance begins.

Figure 2. The hymnal-like opening spread of the printed program for *A Dance for the Newest Age*. Few of you will look at this very closely before the piece begins.

You open the printed program handed to you at the door, and right away there is something unusual. There are several pages of printed music inside, giving an effect like a church bulletin. The first words resonate with this association and also work against it:

“science on my mind, religion in my heart...” Is this some kind of new age church of geometry?

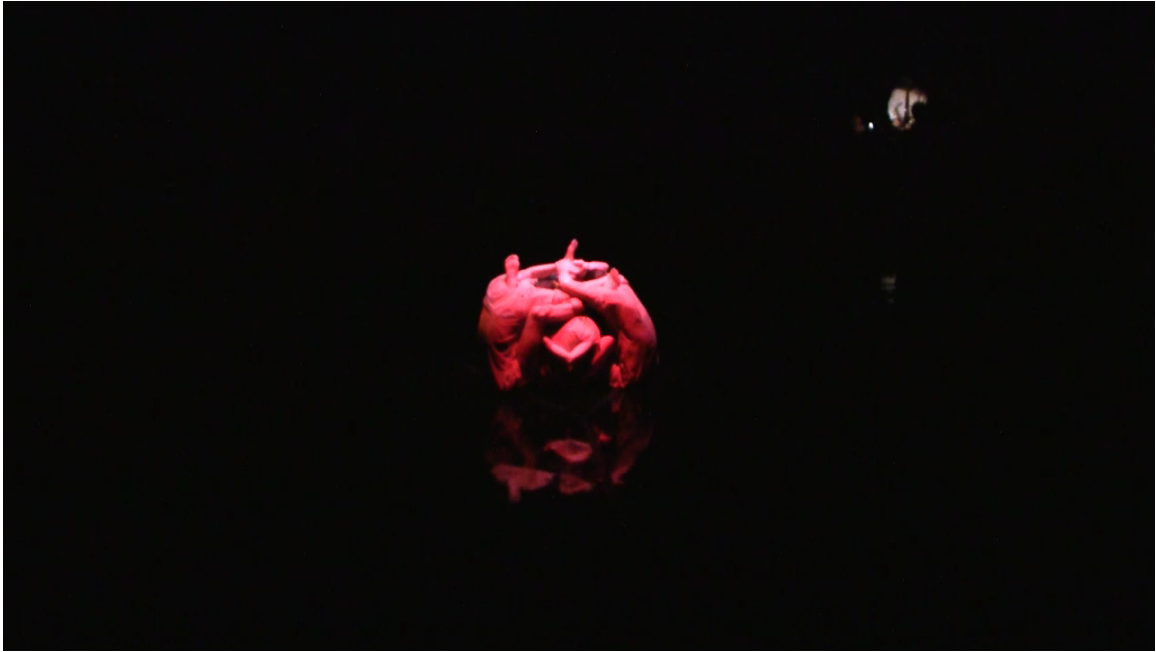


Figure 3. Dancers huddled into a ball which is reflected in the glossy stage surface. I am visible in the background to the upper right.

The audience quiets around you as six performers file in wearing matching translucent beige tunics. They separate into three groups, one at each vertex of the triangular stage space, and pause before converging on the center. They briskly descend to the floor, sitting in a tight circle with legs overlapping, and deliberately twist their limbs together into a densely packed human ball. They tuck in their heads and interlock their arms. Just as the formation is complete the space goes dark. The only light remaining is bright, warmly colored, theatrical lighting focused on the human ball. As your eyes adjust you notice how the light emphasizes the form's reflection in the floor.

A moment later the performers begin to hum loudly in unison. The sound emerging from the ball is muted—they are singing into one another's bodies rather than towards the audience. In fact, it's difficult to tell if they're really singing because their faces and mouths are hidden. But the sound is definitely coming from the ball, and it doesn't sound like a recording. They may be engaged in some kind of physical tuning or sound-healing practice. The intention seems more physical than auditory or musical. The singing is an extension or intensification of the physical contact.

The ball stays perfectly still the humming opens up into an "O" and the sound mysteriously expands out into the room. Now the singing is being amplified, and it is also being distorted or manipulated. The voices sound as if they're being magnified or stretched. The chorus now includes deep tones—deeper than seem right for the bodies on stage. The sounds fill the room coming from behind as well as in front of the audience risers. The sounds is being "reflected" from the periphery of the room just as the bodies are being reflected in the glossy floor.

The chant of our fictional cult of crypto-religious scientific performance art is "mhO." This is a reversal of the yogi's "Om" creatively misheard as its homonym "Ohm." Thus "mhO" connects us to the intersection of spirituality (mantra), science (electricity and magnetism), and experimental art practice ("Do it backwards").¹⁴⁶ The sound of "mhO" centers the participant in the self ("m") and then through the breath

146. "Do it backwards" is the law #1 of the three "Laws of the Avant-Garde" as formulated by electronic musician Nicholas Collins. See his wonderful book *Handmade Electronic Music: The Art of Hardware Hacking* (New York: Routledge, 2006), 226.

(“h”) opens out (“O”) into social reality and community.

repeat a few times, one full breath for each note, any octave, stagger breaths, do not synchronize

1/1
mhO

1/2
mmhhOO

1/3
-2
mmmmhhhOOO

1/4
mmmmhhhhOOOO

1/5
+14
8
mmmmmmhhhhOOOOO

1/6
-2
8
mmmmmmhhhhOOOOOO

Figure 4. Undertone pitch relationships resulting from playing back a recording of the dancers' voices at fractional speeds.

Recordings of the performers intoning the same “mhO” are heard at original pitch, as well as at fractional speeds of 1/2, 1/3, 1/4, 1/5, and 1/6. The transcription in Figure 4 shows the specific impact of the variable playback on pitch and duration of the sung pitches. F and a very low Ab are heard along with doublings of the original Cs. The recording is about 2:30 in duration, or 15:00 at 1/6-speed, bleeding into the next section of the music as a subtle background layer. The pitch shift tends to emphasize high frequency breath sounds and other aspects of vocal production such as saliva clicks that are less audible in the normal speed recording. Small deviations in pitch also become more prominent. The slowing results in peculiar exaggerated vibrato as well.

These recordings are projected from a six-channel speaker system arranged as shown in Figure 5. Speakers 1, 3, and 5 are hung above the vertices of the dance floor a few feet above head height, facing the opposite audience section. The other set (4, 5, and 6) is placed roughly according to the vertices of a larger triangle formed by reflecting the form of the dance floor across each of its sides (dashed lines in the figure). The speakers are moved from these ideal locations however in order to take advantage of the theater’s architecture. Speaker 4, for example, is placed just inside an open door leading to the dressing rooms, leading to a more distant reflected sound. From the perspective of each audience section (for example, those seated facing the top of the triangle in the figure—the same ones pictured in Figure 1), the speakers function like a front center channel (1), a wide stereo left (3) and right (5), and single rear ambient channel (4), and two distant location speakers on the far front left (2) and right (6).

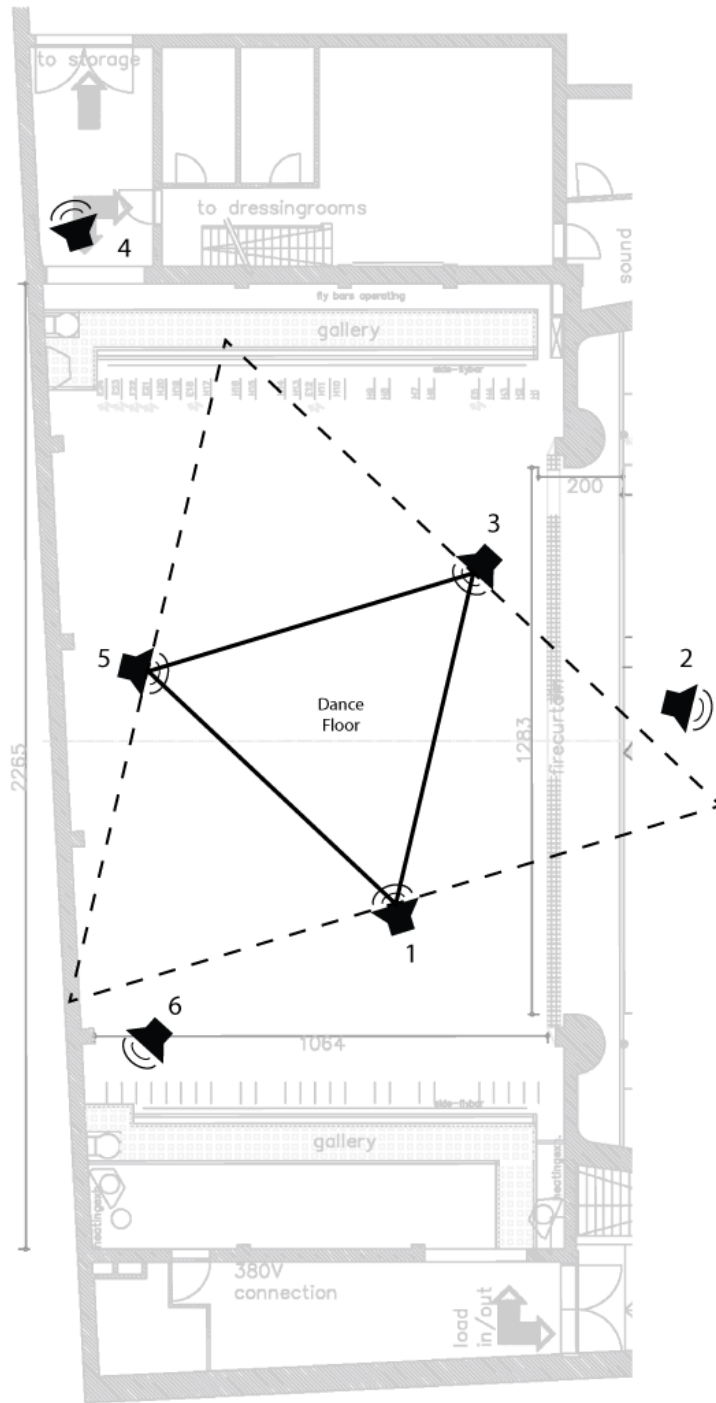


Figure 5. Speaker setup for *A Dance for the Newest Age*.

About a minute later you hear a cluster of low electronic tones join the chorus, whirring and throbbing like a large machine. The bodies on stage are still perfectly motionless.

The image displays a musical score for ten triangle-wave oscillators, labeled n=2 through n=11. Each staff is in 4/4 time and begins with a quarter note. The frequencies are: n=11 (180 Hz), n=10 (164 Hz), n=9 (147 Hz), n=8 (131 Hz), n=7 (114 Hz), n=6 (98.1 Hz), n=5 (81.8 Hz), n=4 (65.4 Hz), n=3 (49.1 Hz), and n=2 (32.7 Hz). The score includes dynamic markings: -49 for n=11, -14 for n=10, +4 for n=9, -31 for n=7, +2 for n=6, -14 for n=5, and +2 for n=3. A tempo marking of quarter note = 60 is at the top left. A vertical dashed line at 1:00 indicates when a cluster of tones is introduced. A small inset score at the top right shows a more complex rhythmic pattern at 1:00.

Figure 6. First minute of triangle-wave oscillators. See Appendix E for enlarged, complete transcription of triangle-wave oscillator material.

The electronic tones are in fact triangle wave oscillators, pseudoscientistically mimicking our cult's symbol—the triangle—at the smallest musical time scale: timbre. The frequencies are overtones of C, the note representing the root chakra according a chart that Eleanor found in a sound healing book. Figure 6 shows a transcription of the oscillators when they first enter. Note durations are determined by the same whole

number ratios as the frequencies—each oscillator’s amplitude is modulated by a proportional very low frequency pulse. So the 32.7 Hz tone ($n=2$) sounds for $360/2$

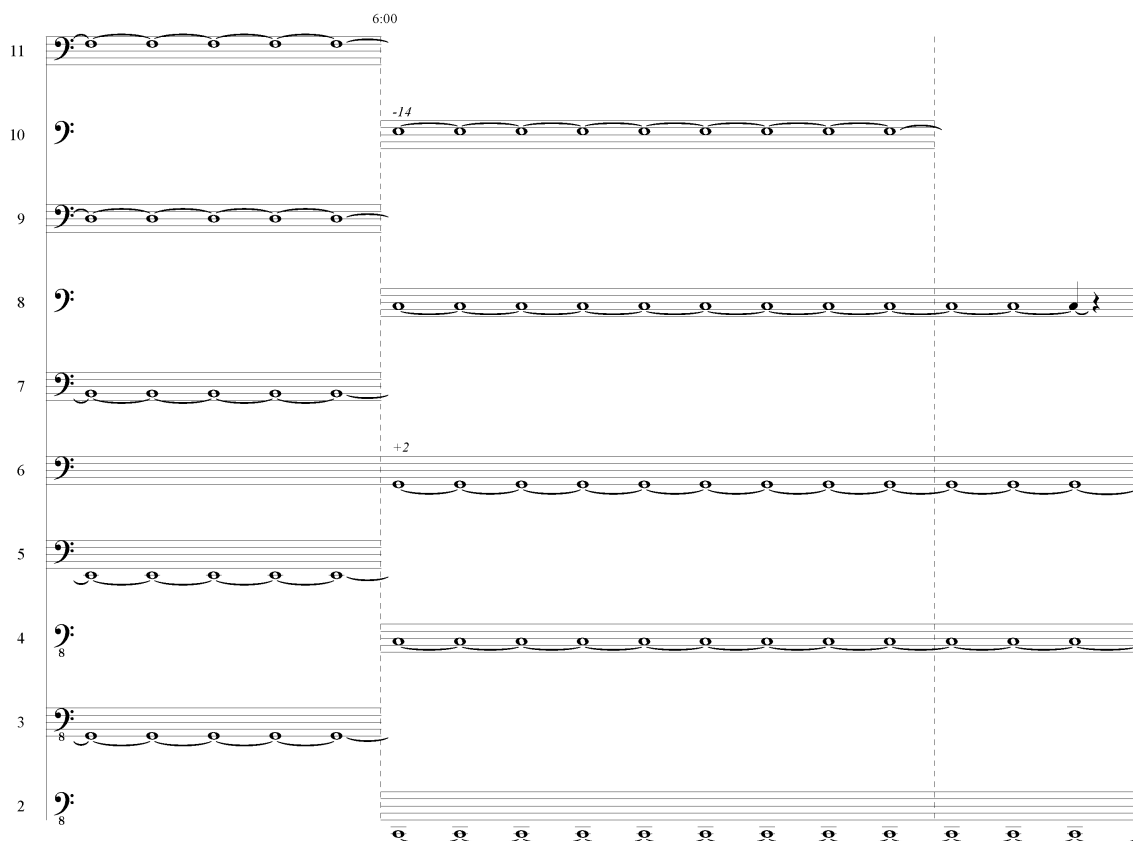


Figure 7. The oscillators align on a just major chord six minutes after entrance. See Appendix E for enlarged, complete transcription of triangle-wave oscillator material.

seconds or three minutes, followed by three minutes of silence, while the 49.1 Hz tone ($n=3$) sounds for $360/3$ seconds or two minutes, followed by two minutes of silence, and so on up to the 180Hz tone ($n=11$), which sounds for $360/11$ or $32 \frac{8}{11}$ seconds, followed by an equal amount of silence before the next tone. As the LFOs phase we hear different combinations of tones resulting in a progression of just-intonation chords.

Rhythmically, the 7th and 11th harmonics establish a subtle irregular contrast to the 60 BPM pulse hinted at by the attacks and releases of the other oscillators.

These overtones can also be thought of as a spectral reflection of the fractional-speed “undertone” mhOs—a sonic analogy to the reflected form on stage.

Over the next few minutes you hear the texture of voices and tones gradually begin to thin, and more variations are audible. The voices fade away as the tones continue in what sounds like a slowly evolving harmonic progression. It becomes apparent the performers are moving, but at an extremely slow rate. Almost imperceptibly they fall apart from one another and melt backwards into the floor. “Melt” in fact is the perfect word to describe the action on stage. This is less like watching a “dance” than watching an ice sculpture melt.

The activity of the dancers here is divided into three parts: “solid,” “liquid,” and “gas,” progressing through the states of matter, their bodies achieving buoyancy, becoming upright, and ready for motion and interaction. These correspond to the three aspects of mhO as well: starting from internal sensation and moving outward.

The electronic tones catch your attention for a moment as they land on a major triad. All that is left of the amplified voices now is a deep, rattling, raspy, breath that mixes with the sound of the theater’s air handling.

The tones progress through permutations that increasingly suggest harmony, and thus motion and interaction. They align on a just major chord (Figure 7), then peel away one by one.

As the dancers reach the floor there is a discernable transformation of their movement quality. They become elastic and buoyant, like slowly inflating balloon animals.

$\text{♩} = 110$

Amplified Voice

Delayed Voice 1

Delayed Voice 2

Digital Delay, $t = 7056\text{ms}$

Digital Delay, $t = 14112\text{ms}$

V

D. 1

D. 2

V

D. 1

D. 2

sci, sci-ence on my mind re - li - gion in my heart oh

art with my hand thoughts thoughts thoughts on my mind fee - li - gion in my heart oh art with my hand

lings fee - lings in my heart o - pin - ions on my art thoughts thoughts thoughts on my mind fee - lings fee - lings in my heart o - pin - art with my hand thoughts thoughts thoughts on my mind fee -

Figure 8. First 24 bars of canon for amplified voice and digital echoes on a text by Eleanor Bauer. Complete score in Appendix F.

A man's voice begins singing the music from the concert program. You can see the musician singing into a microphone off to the side. After the singing starts, the dancers exit

one by one in the dimming light. The stage is left empty as the voice and its reflections accumulate.

My voice is amplified through a speaker hanging at one vertex of the triangle, with an echo that brings it back a few seconds later at the second vertex and then again at the third. The reflections are coordinated with the pulse of the music to form a canon.

This music picks up on the key suggested by the major triad a few minutes earlier. The text is an extended meditation on the science-religion-art triad. The echoes and text are aligned so that we always hear an equally balanced simultaneity of sentiments related to art, religion, and science.

One of the dancers reenters the space upright, walking quickly in a pattern that crisscrosses the floor. She is joined by a second and then a third performer. Their arms at their sides, they continue to walk back and forth across the floor in a deliberate pattern.

The dancers maintain a straight-line formation, one dancer always on the line connecting the other two as if joined by an invisible, rigid rod. These are no longer bodies so much as points in space.

You are witnessing a demonstration of some kind of mechanism: a machine or perhaps orbiting planets. A second trio enters in similar fashion, and the complexity of crisscrossing and potential collisions increases.

Gradually the performers transition to a simpler system of independent center crossings which might be some kind of higher-dimension square dance. They trace out triangular or perhaps interlocking star patterns on the floor.

As the voices of the echo cannon converge on closer intervals and then eventually a unison with increasingly related vowels, the space of the travelling dancers converges as well. Their footfalls begin to entrain to one another rhythmically and quickly they agree on a common pulse.

The dancers' footsteps are audible for a moment as the echoing voice fades away. An acoustic guitar joins the pulse of the dancers' feet with a simple 2-note pattern on the bass strings. Something resembling folk patterns emerge in both the dance and the guitar. The dance could be a country dance adapted to a triangular floor—and also to accommodate shifts between couple partnering and triad partnering. It becomes evident that among the six performers there are three taller and three shorter bodies. Sometimes each of the taller performers are paired with a shorter one. At other moments the group divides into two trios by height.

The folk finger pattern in the guitar continues with gradually increasing complexity. Rather than shifting chords there are gradual re-tunings of open strings above the constant bass.

The chord gradually bends from major to minor and back; a third is reinterpreted as the root. The rhythm develops through a progression of polyrhythms in the right hand.

start in standard tuning
(EADGBE)

Left Hand (Tuning)

Right Hand

LH

RH

LH

RH

LH

RH

Figure 9. Transcription of “court dance guitar” section. See Appendix G for enlarged, complete score.

The dancers arrive in a single line, short-tall-short-tall, arms linked, leaning back and forth against one another in alternating balances. The guitar returns to a slowing version of its opening two notes, proceeding to a sparse mid-register melody as the dancers come back to the center. They move into a slowly shifting series of intricate weight-balancing sculpture. Hands linked in the center they hold each other’s weight and lean outward like the façade of a gravity-defying modernist building. Echoes of the guitar melody begin to ricochet around the room: near and far, in front and behind. The atmosphere is one of airy space.

The guitar is gradually retuned, with layers of sound building up via echoes in the six speakers, each at a one-minute interval from the next, enveloping the room in a slow circular gesture over the course of six minutes. The tuning eventually ends with a clear arpeggiation of the open strings of the standard EADGBE tuning—familiar to anyone who has ever tuned a guitar themselves. The dancers respond by breaking formation and proceeding to the vertices of the floor. They begin to vocalize on the pitches of the open strings of the guitar, blending with additional voices from the PA. Six voices and six strings.

any octave. breathe, rearticulate, and change register as necessary. dotted lines indicate tuning partners.

Figure 10. “Guitar Cult Tuning/Breeding.”

The performers proceed through different pairings of partners, seeming to listen and tune with one another as they go, resulting in a series of shifting open sonorities as the guitar fades away. The bodies converge as the pitches converge, returning to the center of

the space and gaining both physical and sonic intensity. They build to a climax and suddenly release.

The clump stays together but with an abrupt shift in quality. They now seem to be acting out the motions of mixing gasses or air currents. They drift about the stage space like a low-flying cloud or patch of fog.

The male singing voice begins again, singing more of the music printed in the program. This material is faster moving than the canon we heard earlier. Some of the gestures are reminiscent of barbershop quartet music, but with three voices rather than four. The text pedantically explains elements of brain anatomy but with an absurd density of simultaneous scientific jargon between the voices.

Simple triadic harmonies create a friendly, even nostalgic, surface that clashes with the thorny technical language.

At the close of this musical number the light shifts and the dancers disperse, leaving a solo performer onstage in silence. She begins what seems like an improvised dance, vocalizing occasionally. She is eventually joined by a second dancer, a third, and so on. The dancers slowly crisscross the floor, continuing their individual dances and seeming to be unaware of each other. There are additional sounds in the distance that sound vocal and might be similar to the sounds being made by the performers on stage, but it's hard to be sure. The effect is as if another version of the same performance is happening in the next room.

$\text{♩} = 60$

Guts
 mh - O m order is de-

Heart
 mh - O m desire is de-

Head
 Ohm Ohm m law is de-

6
 ter mined by the lo - gic of the guts from whence spring — sensations that are

ter-mined by the lo - gic of the heart from whence spring feelings that are

ter-mined by the lo - gic of the head from whence spring thoughts that are

10
 re-ge-stered in the Rcomplex al - so known as the mammalian brain

re-ge-stered in the lymbicsystem al - so known as the reptilian brain

re - gi - stered in the neocortex al - so known as the human brain the

Figure 11. A trio for simultaneous head, heat, and gut voices, with text by Eleanor Bauer. See Appendix H for full score.

The dancers improvise but maintain a shared choreographed path. They enter, dance along the path, then finish and exit in the same order. The sound consists of three separate recordings of the same scored dance improvisation in rehearsal played from the outer triangle of speakers.

They complete their dances one by one and exit over the course of a few minutes, bringing the piece to a close.

Chapter 4

Tentative Assembly (the tent piece)

As you enter the first thing you notice is that a stage area has been carved out of part of the theater where large audience risers normally stand. The new stage area is triangular, similar to the one for A Dance for the Newest Age. Smaller audience risers have been constructed, one on each of the three sides of the triangle. There is not a dance floor, but simply the bare wood floor that would normally be beneath the risers. Chalk markings form a crisscrossing geometric design on the floor. A kind of chandelier made of string hangs from the ceiling, perhaps a drooping mirror image of that same design.

The chalk drawing is in fact exactly that: the scenographers made the drawing using the giant string figure as a pattern.

The lights go dark, the audience chatter dies down, and a harmonica note sounds out from some distant corner of the space behind you. Another harmonica answers from an opposite corner, then another and another, each from a new separated location. Each player seems to be operating more or less independently, and they aren't necessarily playing the harmonicas in expected ways. One sounds as if he or she is speaking through the instrument. Another is blowing too hard, causing a distortion in the pitch. Another seems to be attempting a virtuosic gesture despite lacking the required skill. There's a forceful ascending arpeggio followed by a high swell; flutter tonguing; a single tone in the midrange followed by another a half step down; the same forceful ascending major arpeggio a second time.

Each of the nine performers has a diatonic harmonica in a different key taken from a 12-key set. In this opening section they have each developed a personal sound gesture which they perform twice at their discretion over the course of about three minutes.

There's a pause of a few seconds and the texture shifts: several players join together in a low register cluster. A second cluster is heard with the characteristic bending associated with inhaling rather than exhaling through the instrument.

A sequence of notes follows deliberately, this time staying neatly within a major scale. The sequence of notes begins to form a melody, perhaps a familiar melody. The harmonicas are out-of-tune with one another, and the rhythm has a halting, stumbling quality which grows humorous. A fellow audience member snickers in recognition, and that's when you place the tune. It's L'Internationale, the communist anthem. Are they making fun of it? The harmonica is an appropriately populist instrument, but the unsure execution doesn't quite fit with the workers' call to arms: Foule esclave, debout, debout (Enslaved masses, stand up!). This certainly isn't the most beautiful rendition you've heard, but on the other hand they must have put considerable effort into assembling the melody as an extended hocket. The darkness as well as the distance between the players means that they're working without a conductor. The difficulty here must be part of the point.

The notes are divided between the nine players bell-choir style—that is, in such a way that it's only necessary for them to play the lowest hole on their harmonica, either inhaling or exhaling (see Figure 12). This enables the group to cover all the notes with

only the most minimal harmonica technique. (With the lowest hole it's easy enough to simply cover the other holes with your fingers to keep them from sounding.)

We drilled this quite extensively in rehearsal, with and without conductor. But as you might expect it wasn't really possible to execute it cleanly spread out in a large space in the dark. The mistakes were real mistakes. No effort was made to "ham it up."

During the last phrases of the tune, lights flash momentarily on the stage to reveal one of the players then another. Then general lighting comes up and nine performers gather around the edges the triangular floor, each at one of the intersections of the chalk drawing. They are dressed in more or less pedestrian clothes, dark and muted on top, but most with more brightly colored sneakers.

They step into the area marked by the chalk drawing, watching one another from across the space. They seem to be paired off, each with a partner on the other side of the floor. They match each other's posture and movements for a moment, then move on to a different partner. The process results in the group shifting gradually into various improvised spatial configurations which you measure against the chalk drawing. It's as if information is being passed between the performers in a network of feedback loops that mimic the geometric pattern marked out on the floor. After a few minutes they begin to employ their arms more actively in the process, making it easier to see the flow of movement information as it is distributed quickly throughout the group. The arms become more gestural and expressive, and the energy is transferred into their movement through space as well. Turns enter the vocabulary, then occasional shifts in level—crouches, hops. The room is quiet with intense focus as the group feels each other out. You hear swishing of pant legs and

L'Internationale

Harmonicas

Bb Eb D F Eb Bb C Ab C F Eb D C Bb Ab G Bb
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
 De - bout, les dam-nes de la ter - re, De - bout! les for-cat; de la faim! La

5 Eb D F Eb Bb G C Ab F Eb D F ↓ D Eb F F
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↑ ↓
 rai - son tonne en son cra - ter - re C'est l'e - reup - tion de la fin. Du pas -
 note has trouble sounding?

9 D C D Eb C D Bb (A) Bb C F* F Eb D Eb
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↑
 se fai - sons tab - le ra - se Foule es - clave de - bout! de - bout! Le

13 F D Bb Ab Bb F Eb Db D C D F Eb C Bb F F
 ↓ ↓ ↓ ↓ ↑ ↓ ↑ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↑ ↓
 mon - de va chan-ger de ba - se: Nous ne som - mes rien, so - yons tout! C'est la

17 Eb Bb G C Ab Eb Eb D C Bb F F
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↑ ↑
 lut - te fi - nal - le, Grou-pons nous, et de - main L'In -

21 F F Bb Eb D C C A C Eb F F F
 ↑ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↑ ↓ ↓
 ter - na - tio - na - le se - ra le genre hu - main, C'est la

25 Eb Bb G C Ab Eb Eb D C Bb F F
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↑ ↑
 lut - te fi - na - le; Grou-pons nous et de - main, L'In -

29 Bb Ab ↑ F F D F F ↓ ↓ F Eb F D Eb
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
 ter - na - tio - na - le se - ra le genre hu - main.

Figure 12. My arrangement of “L’Internationale” for a 12-key set of diatonic harmonicas, mostly using the lowest hole only.

sneakers tapping or squeaking against the polished wood floor. The group gradually slows to stillness, each performer arriving at one of intersections around the edge of the chalk figure.

After a few seconds the quiet is shattered by loud music and an abrupt increase in the stage lighting. Looped fragments of pop music blast from speakers in different locations around the room. The stuttering loops are all the same length, like skipping CDs, giving the texture a rhythmic uniformity despite the disparate material. The dancers respond to the noise with a parallel increase in energy. Some of them perform repetitive movements that look like club dancing or head banging. Others skip about the space or take running dives, sliding across the floor. One or two turn to slower movements, indulging in deep, luxurious lunges or stretching on the floor—in stark contrast to the rhythmic propulsion suggested by the music. There's distorted electric guitar; a male voice with heavy vibrato; a truncated percussive noise; churning heavy metal drums. New loops fade in as others fade out, but at a slow pace that is relentless in combination with the high density of the sampled material. You think you recognize horns and strings from a Michael Jackson track. Another sample sounds reminiscent of reggae. Another of lute or some folk string instrument. The dancers' movements are quickly smudging and erasing the chalk lines on the floor. Two performers huddle next to a loudspeaker playing air guitar. Another removes her shoes and socks. The sounds emanate from speakers scattered around the room both in front of and behind you, recalling the spatial distribution of the harmonicas at the piece's opening. This has been going on for a while and shows no signs of developing towards an ending.

At the beginning of this process I proposed that rather than collaborating with Eleanor I would approach the musical element of this piece as a collaboration with each of the performers individually. I started by distributing a survey. The first set of questions asked them for specific musical reference points: What is a specific song/piece/sound that's related to your current understanding of the piece? How is this song/piece/sound related to *Tentative Assembly*? What music is good for being alone? What music is good for being in a crowd?

Later in the process, the performers developed an improvisational score focused on maximizing *pleasure* in movement. Using the survey responses as a starting point, I developed a list of music that would be maximally pleasurable for each individual performer. I then created a simple chance process to generate a collage of fragments of equal length (1-second) from these selections distributed amongst six speakers arranged in a similar fashion to *the triangle piece* (see Figure 13). I saw this as a reductio-ad-absurdum of “democratic” composition-by-committee in the spirit of Komar & Malamid’s *Most Wanted Song*.¹⁴⁷

147. Dave Soldier, “Eine Kleine Naughtmusik: How Nefarious Nonartists Cleverly Imitate Music,” *Leonardo Music Journal* 12 (2002): 55–56.

Ideal Speaker Locations for Tent Piece

Chris Peck
31 March 2012

1, 3, & 5 are hung ~2m above corners of dance floor.

2, 4, & 6 are placed somewhere near vertices of large triangle formed by reflecting the dance floor triangle across each of its sides. (This can be very approximate.) These speakers face outward for diffuse, distant, reflected sound.

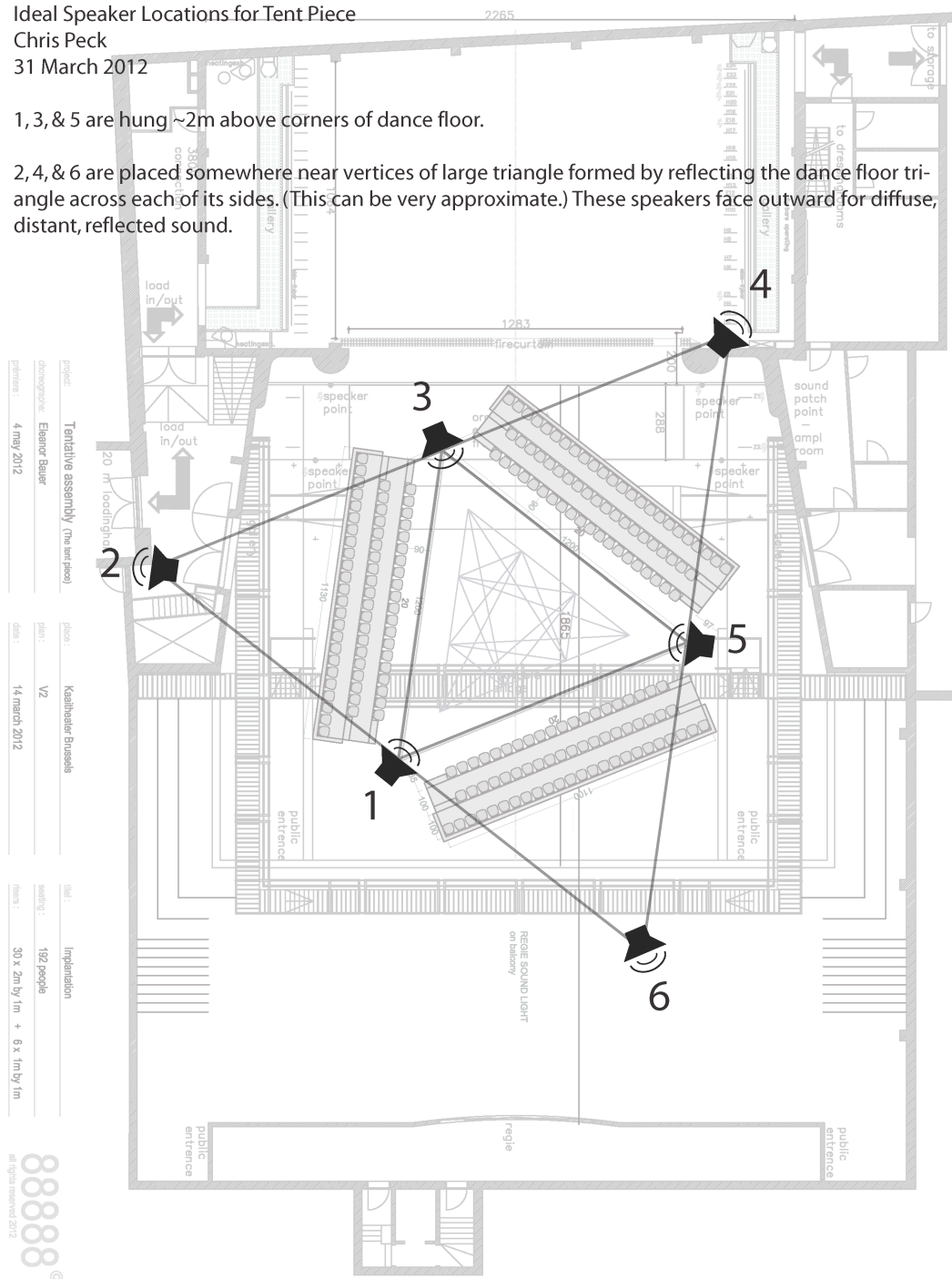


Figure 13. Speaker placement for *Tentative Assembly*, shown on scenography plan.

The music cuts abruptly but the dancers continue with their activities. Over the next minute or so their energy decreases and dissipates. They gravitate towards one corner of the triangle and descend to the floor in a slowly writhing huddle. Their breathing is clearly audible in the loud silence.

Up until this point the dancers have related to one another in a somewhat aloof fashion, in a spirit of interest or curiosity rather than cooperation or necessity. But now in this huddle they support each other, taking turns climbing to the top and then cycling back down to the bottom. There's still a hint of humor here, especially at first, as one dancer and then another awkwardly clambers to the top of the pile. But the giggles fade. Their effort in the task at hand is palpable, even if it isn't clear at first what that task is. Their strength and awareness of one another is being tested.

The huddle gradually starts to move towards the center of the floor. After a few minutes it reaches the center and continues across to the other side. Their breathing is quick in contrast to their slow progress. You're reminded of their earlier cooperative harmonica rendition of L'Internationale. Similarly, this is not the easiest approach for the group to get from point A to point B. They're going out of their way to share the effort equally in every moment. If the musical version felt humble and ironic, however, the travelling huddle does not. This shared effort feels more serious. As they reach the opposite side of the stage the performers disengage from the group formation one by one.

Two performers re-enter, staying close to the floor at first and maintaining contact. It's as if they are about to re-cross the stage in the opposite direction using the same

method. But they come to their feet, still maintaining contact, and their dynamics become more varied. The sense of urgency or drama is heightened.

Three more performers enter a few minutes later holding lengths of string resembling the material that makes up the sculpture hanging above the stage. They hold the string taut to form the clear figure of a triangle in a plane oblique to the floor. As they let the string slip through their fingers and back away from each other, the triangle expands. A few tentative harmonica notes float in from the darkness behind the edge of the stage area. The duet continues alongside the string triangle, gathering intensity and growing in terms of range and variation. A fourth performer enters to join the triangle trio. Pinching the string along one of the triangle's sides, she begins adding facets to the figure to create increasingly complex shapes. Now there are at least two or three unseen harmonica players behind and around us. They play long tones which seem to respond to the developing geometry in string.

Each of the three harmonica players responds to one of the initial segments of the string triangle. Their pitch is influenced by the length of the segment, while the number of pitches/holes is roughly related to the number of subdivisions of the segment.

The duet comes to a close and joins the group with the string. More performers emerge from the darkness at the edge of the stage. These three are holding harmonicas to their mouths—our unseen players revealing themselves. All the performers are now involved with the string, creating what looks like it could be a demonstration of some complex many-dimensional concept. The harmonica players stash their instruments in their

pockets so as to more fully focus on the task. The group continues building their massive asymmetrical cat's cradle in silence.

Then the harmonica players take out their instruments and sound a few coordinated notes. The group inhales together like a barbershop chorus taking its starting tones from a pitch pipe. Incongruously, they let out a deep, sustained primal scream. As they raise their voices they slowly lower their string sculpture and leave it lifeless on the floor.

Standing as a group and coming apart slightly, their voices morph into a repetitive vocalization. Then before that coalesces into anything recognizable it becomes a high unison yowling, then bizarre laughter. At first they seem to be approaching the audience as if to address them, but their eyes are closed. Each turns independently in place, towards and away from each other and also towards and away from the audience. They inch along the edge of the stage in a clump. The vocalization continues to morph and develop. They seem to be feeding off of one another's energy, drifting through varied emotional and sensory states. At first these states are basic. They are like animals or children. They play together with the discovery of new vocal sensations.

Gradually some of their eyes begin to open. Then their voices become more expressive and stumble towards something sounding like language. It's as if the group—which has been silent up until this point but for the harmonicas—has suddenly decided to invent a spoken language for itself. They begin to gesticulate at one another as well. They seem to be addressing each other but this is not a dialog. Rather, it's a kind of strange collective monolog. Perhaps you are not witnessing a community attempting to speak with one another, but the inner workings of a collective brain attempting to speak. You are

witnessing the group discovering what they—as a whole—want to say. They start to form recognizable words and then sentences. “In their houses, well... alright...” Predictably, perhaps, it might take them a little more practice before they can start making much sense this way.

But before anything sensible emerges from this process they start to divide into smaller sub-groups. Pairs split off carrying on similar unison monologues independently. Then the individuals split off from their partners and begin addressing members of the audience. They spread out to the edges of the stage space, each taking responsibility for a section of audience. They gesture to the audience to repeat their vocalizations as they increasingly take on the quality of singing. As they pass notes and short phrases sung with nonsense syllables to the audience, they also pass them to one another moving counterclockwise around the floor. The audience begins to chant along. The atmosphere becomes more convivial. Not everyone is playing along, but the performers are attempting to implicate you in the collective task. More and more of the audience joins in, and the effect of the different groups around the room chanting short repeated phrases starts to remind you of the pop music sample collage from earlier in the piece. You’re also reminded of the “human megaphone” communication tactic employed by the Occupy Wall Street protesters earlier this year (it’s 2012).

One of the performers has—as you’ll hear in just a few minutes—learned *L’Internationale* backwards. He’s responsible for extracting small loopable fragments and starting them around the circle of performers in the manner of a telephone game. The strangeness of the backwards text, awkwardness of the backwards melodic contours, de-

familiarizing effects of repetition, and growing din of audience singing all lend themselves to increased possibility of “error” and reinterpretation of the fragments along their way around the room.

One of the performers chooses an audience member and lures them onto the stage. They ask the woman to hold the end of a piece of string in the air while they begin spinning it out from a spool. Then they begin crisscrossing the space, threading the string between the other performers. Each one takes the string in their hands as they continue to sing. The chanted loops gradually expand in duration while slowing in tempo. The string is forming a crisscrossing triangular star pattern like the one that used to be in chalk on the floor (by now it's well smudged). The singing gradually transitions to long tones as the form emerges. When the pattern is complete the performer with the spool returns to the starting place, severs the string, and joins it to the end that had been held by the audience member with a lighter, ritualistically. The performers turn towards each other holding the points of the woven nine-pointed star, vibrating the string connecting them as they continue singing long tones, occasionally turning back to encourage the audience to keep singing too. The string starts to look like a manifestation of the sonic vibrations connecting us through singing. They kneel to the floor keeping the string taut. It rattles against the hard wood producing a spattering of bright clicking noises as the vibrations subside.

A Spanish guitar floats in from one of the speakers as one of the performers breaks from the group and addresses the audience. The intimacy and ease of this direct address is jarring after so much obfuscation, abstraction, and frustrated attempts at communication: “I want to share with you a lullaby that my parents taught me. It tells the

story of a mother singing her baby to sleep so that she can go to work.” She begins to sing a folk song in Spanish: “Duerma, Duerma, Negrito...”

Beyond the initial music surveys distributed to the performers, I also worked with each one individually towards the goal of helping them create a musical “soliloquy.” This could be a way for each to have an individual voice within the collective creative process. Part of the idea was also that each “soliloquy” could be a musical accompaniment for some dance activity performed simultaneously by the other eight performers.

In our first working period we divided my time evenly between individual meetings with the nine performers. Cecilia Lisa, an Argentinian dancer who is based in Brussels, wanted to work on singing this folk song because of how its themes related to the issues of art and social change that we tackled throughout this process.

She joins back in with the rest of the group as they continue to manipulate the string, singing as she works. A portion of the string chandelier is lowered with pulleys and the group stretches it out to reveal that it’s another triangular star figure. They lay it on top of the first figure and attach it at several points.

A new sound becomes audible from a different direction. It sounds like a recording being played backwards. Another performer begins to sing along as he works, as if he’s learned the words from a backwards recording. As the music swells it becomes more clear that it’s a band, perhaps a military band. The singing has the quality of a patriotic song, though the melody is not recognizable backwards. You start to realize that the backwards words resemble what you previously thought to be nonsense syllables in the earlier participatory singing.

We had been working with *L'Internationale* in various ways as a source, and one of the performers—Michiel Reynaert—came to me in our individual meeting with the idea of learning it backwards. I helped him make a backwards recording of himself speaking the text as well as a retrograde version of the score to aid in learning the melody (see Figure 14).

A few spare piano chords enter the mix, and a third performer begins to sing. "Dear Ms. Representative, I'm writing this to you..." The style is sincere classic musical theater. She addresses the audience directly. The piano is a slightly out-of-tune upright, giving the performance a somewhat rehearsal-like quality.

The collaboration with Liz was the most involved of the solos. She brought to the table a desire to explore political content paired with a mode of expression taken from Hollywood musicals. She wrote the text as well as the melody for the verse, and we worked out the harmonization collaboratively. I contributed a melody for the chorus.

We worked together on recording the accompaniment on a quiet Sunday in a nearby dance studio. In terms of production, we ended up with what you might call an “over-recorded” upright piano. I spaced three small diaphragm condensers along the soundboard in order to achieve an extra-wide three-channel spatial field which I could translate to my double-triangle speaker configuration. The introduction to the song, a

L'Internationale

French, C-major, Retrograde

29
niam - uh erneg el ar - es el - an oit - an - ret -

5 25
ni'l niam - ed te suon snop-uorg el - an - if et - tul

9 21
13 al tse'c niam - uh erneg el ar - es el - an - oit-an - ret - 17
ni'l niam - ed te suon snop-uorg el lan - if et tul

17 13
al tse'c tuot snoy-os neir sem - mos en soun es ab ed reg nach av ed-nom

21 9
el tuob - ed tuob - ed evalc - se eluog es - ar el-bat snons-iaf es

25 5
sap ud nif al ed noit-puer - e'l tse'c er - ret - arc nos ne enno-tnos-iar

29
al miaf al ed tac-rof sel tuob - ed er - ret al ed sen mad sel tuob ed

Figure 14. Retrograde *L'Internationale*. Bar numbers corresponding to the forwards version are shown to the right of each system.

sweeping arpeggio, emphasizes this spatial effect. Liz’s choreography for the song—singing from the center of the stage while turning to address her audience in the round—also emphasizes movement in the sound field of the accompaniment. We recorded the material in small chunks that I assembled later in three layers. The result is like having three ultra-reinforced upright pianos surrounding the space.¹⁴⁸

The image shows three systems of a musical score in treble clef with a key signature of one sharp (F#). The first system (measures 1-4) has chords Bm, G7, F#7, Bm, F#7, and Bm. The lyrics are: "dear ms rep-re sen-ta tive. I'm wri-ting this to you—and i hope that you will read it so you'll know my". The second system (measures 5-8) has chords E7, A, and E7. The lyrics are: "heart is all a cla-mor and i stut-ter and i sta-mor be-cause I don't know what the fu-ture holds I guess I'm". The third system (measures 9-12) has chords A, E7, A, F, and F#. The lyrics are: "just a-no-ther ci-ti zen but i thought i'd write to let you know_____ I want to help but they".

Figure 15. First three systems of an early sketch of Liz Kinoshita’s “Dear Ms. Representative.” See Appendix I for complete score.

The ensemble continues their increasingly elaborate and focused work on the string structure, raising portions of their creation above the stage via pulleys. The musical theater singer takes center stage and turns beneath the string, arms extended in a gesture of

148. Liz was inspired by this process to explore the relationship between musical theater and contemporary dance in a work of her own, on which I served as a music consultant. See Liz Kinoshita, *VOLCANO (trailer)*, 2014, accessed March 16, 2015, <https://vimeo.com/115797007>.

imploring the audience to hear her complaints. A few of the other performers join her in an off-key refrain:

*Why, why, why? Question tradition!
Why deny the status quo?
Again, and again, and again and again re-question!
Re-question the future too!*

She is interrupted by yet another performer entering the action of simultaneous singing. She storms about the stage back and forth, now and again raising a clenched fist and shouting single-word demands in French: "Attention! Propagation! Constellation!" Occasionally another performer picks up and repeats one of her demands as if to affirm it. "Vibration! Suggestion?"

The band music swells again, this time playing forwards. The performer who had previously been singing is now whistling the same tune. Now you recognize it as L'Internationale. Earlier they were coercing the audience into singing L'Internationale backwards? This makes you feel slightly uneasy.

From the opposite corner one of the other performers begins to sing an old-fashioned upbeat love song with the accompaniment of recorded male voices.

I wrote this song based on some initial brainstorming about string metaphors and puns with Adam, who also had an idea about learning to sing a country song. In the end Eleanor sang the song I initially wrote for Adam (see Figure 16), with the addition of the male trio accompaniment which references the vocal material of *The Triangle Piece*.

C G C

1. This heart of mine is made of string It comes un - rav - eled each
 2. This heart of mine is made of string But ties that bind don't
 3. This heart of mine is made of string It comes un - rav - eled each

G F C

time I sing Hook line and sink - er I fell for you
 mean a thing You gave me just e - nough to hang my self
 time I sing Hook line and sink - er and hang - ing by a thread

G C

(.) And now there's noth - ing left to do
 And took the of rest - I've got noth - ing left
 A string of lies I'd be bet - ter off dead

F C F G

I'm con - demned there is no use I'll be swinging from my lo - ver's noose I'm

F Am G

hog tied down and quar - tered can't take no more a - buse strung up strung out

G7 C

strung a - long she won't cut me loose

Figure 16. Lead sheet for “Lover’s Noose.”

Simultaneously another performer paces back and forth in front of one of the audience sections addressing them fervently but unintelligibly: he's speaking through a harmonica in another demonstration of extended technique on the humble instrument. Another performer begins to lecture the audience in the style of an enthusiastic infomercial salesperson, rattling off an absurd litany of the benefits and uses of string, demonstrating each one in turn. "Another world is possible, now see it... in string."

I doubt if anyone would have consciously noticed this, but there was also a Muzak-style rendition of "I've Got the World on a String" playing from speakers behind the audience, following Michael in his circuit around the space.

A pair of performers on the other side of the stage trades off words as they perform a choreographed unison duet. "Eighty percent / of / our / interrelationships / are / irrelevant." One has an American and the other a Brazilian accent.

The string has been raised to form a loose pyramid above the stage area. This must be the "tent" of the title. The rest of the group joins in the duet as well as in the process of completing sentences word by word. The pace slows down. It sounds less like it's rehearsed now, and more like they're making it up as they go along. They shift groupings—duets, trios, quartets moving around the space, now and again colliding with the "tent" and sending ripples up the strings toward the ceiling. Spaces between the words lengthen and eventually the group monologue ceases, leaving the ensemble to dance in silence. They play with contact and weight sharing, exploring and following their interactions freely in contrast to the directed, task-oriented collaboration of the previous ensemble dances.

The sounds of harmonicas once again emerge from the periphery of the space, but this time they must be recorded, since all the players are on stage. At first the sound is uncannily similar to the harmonica ensemble at the opening of the piece, but the texture is fuller as well. After a minute or two it sounds like a much larger ensemble of harmonicas forming a kind of wheezy, off-kilter reed organ.

The recorded harmonica music in this section is from a graphic score based on the characters of the word “CHANGE.” I initially made the score for Eleanor as an alternative to singing “A Change Is Gonna Come” (Figure 17). We played it as a harmonica choir with our 12-key set, then again with our harmonicas flipped so as to reverse the pitch contours.

The dance comes to a close as the ensemble moves to the edges of the floor and picks up the string tent. It rises and falls in a kind of dance to the dissonant harmonica ensemble clusters. The performers begin to rotate the string sculpture, walking up the steps at the edges of the audience risers. As they do so the sculpture stretches over the audience. The performers hand the ends of the string supporting the tent to members of the audience and exit. You and your fellow audience members are left for a moment holding up the ephemeral structure on your own. You who are charged with the string must choose whether to applaud and let the tent fall or abstain from the usual ritual appreciation and continue your volunteer duty.

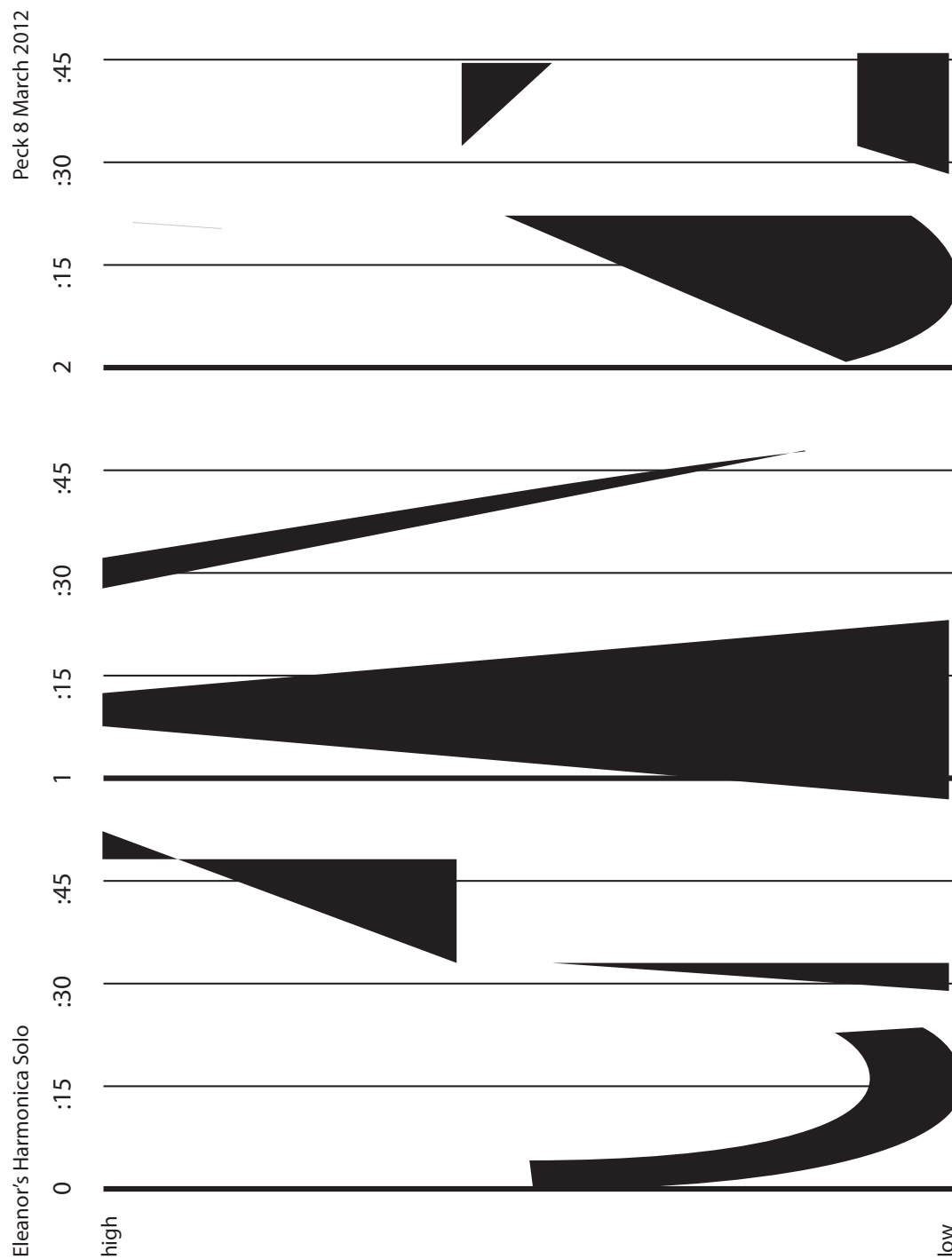


Figure 17. Graphic score used for recorded harmonica choir.

Chapter 5

Midday & Eternity (the time piece)

You enter the theater and find it in a more or less standard, frontal configuration.

After the last two pieces this comes as somewhat of a surprise—and also a relief. It will be nice to sit back and watch a performance from a more comfortable chair. There's also less threat of being dragged into an audience participation experiment.

The stage is covered in white Marley. Three women dressed in white sit cross-legged at the downstage lip. A tall white curtain hangs upstage. The lighting is relatively dim, side lights emphasizing the downstage area where the women sit. A drum set—or, more accurately, some pieces of a drum set arranged more for sculptural display than as if they're actually about to be played—sits downstage right. A few sticks and mallets sit on top of the drums though, and a monitor wedge sits just offstage to the left, suggesting to the contrary that that a drummer may in fact join us later on.

You may not be sitting in a triangle, but there are still triangles present, this time in the form of the familiar percussion instrument. Each of the women holds a triangle of a different size. They play them with metal strikers in an irregular pattern, dampening after each strike by dropping the triangle down onto a thigh. They scan you and the other members of the audience as they enter and settle into their seats. They watch with detachment as they play. The sound of the triangles is like the chime often used to signal the opening of the house to let the audience know that it's time to take their seats for the show. It also occurs to you that they sometimes used a triangle to summon the cowpokes

in for supper in old westerns. In any case their activities are calling our attention to the ritual of readying for a show to start.

The triangles are 6", 8", and 10"—an oblique reference to the Pythagorean (ie. 3-4-5) ratios we played with in *A Dance for the Newest Age*. But these are indefinite pitch instruments, so the sizes do not map onto fundamental frequencies. The performers are also three different sizes, as we'll see when they stand up. They watch the entering audience and play in response to their movements. They uses blinks, for instance, as cues to start and stop notes.

There are small piles of paper sitting on the stage next to the performers. The paper looks like it's covered with text. They continue to play the triangles, now and then shifting focus to a different area of the audience. The room quiets as we settle in our seats, and you can focus more closely on the pure metallic tones. They don't seem to simply be waiting for the audience to be ready. This could go on forever. Maybe the piece has already started?

Unlike the other two pieces in the trilogy, this one is regulated by clock time. The section will last for a set duration before the dancers proceed.

Responding to an unseen cue, the performers deliberately set down their instruments and stand. The stage brightens. They take a few steps back, stooping to pick up the papers. All at once they begin to sing, reading from the printed text. Each of the papers is actually a loop that hangs down from their hands one to two feet. Each loop has a twist in it—they are Mobius strips. The papers are covered with text, suggesting that they could be read from continuously, eventually returning to the start due to the twist in the

loop. Each has an independent text competing for our attention. Their phrases overtake each other incongruously, forming a kind of cutup, The English of two of the performers is accented, adding to the potential for mishearing:

The constant and persistent changes the flower performs... / ...it's periwinkle hour _____ after golden hour... / ...me getting older and older... / ...promising a new world with this [unintelligible] internet revolution _____ / ...until I can feel my breasts touch the table... / ...but trees... / ...it's not that [unintelligible] is tired... / ...and the hair in my nose... / ...the sky remains gray... / ...information... / ...the cold begins to press against your skin... / ...they open their mouths and don't know what will happen... / ...the youngest daughter _____

The text was composed by the dancers during the rehearsal process using some of the improvisational strategies employed in the dance as cues for directed free writing.

The text and music are independent, so new combinations of text are heard in each performance depending on where they pick up the Mobius strip scroll.

They harmonize in slowly moving applied dominants obscured by suspensions and inversions, a circular progression which could similarly proceed through the circle of fourths ad infinitum.

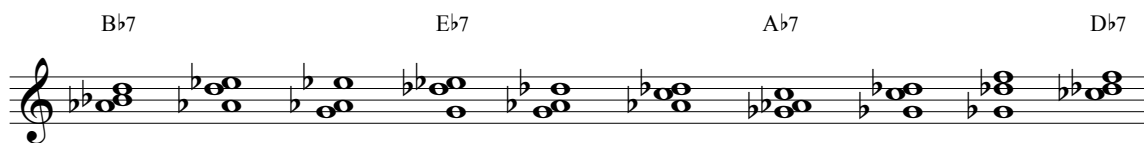


Figure 18. Pitch material for first singing-chanting section.

I think this progression is simple enough that someone—perhaps someone with better ears for harmony than me—could actually hear this. In any case it certainly has at the very least a pedantically cyclical quality.

But no sooner does this pattern establish itself than do the singers abruptly stop, drop their papers, and begin to dance. A quick hi hat rhythm comes from the direction of the drums, but there's no drummer. It must be coming from that monitor speaker. The dancers are virtuosic and independent. They use their entire bodies and the entire stage. There are many quick changes in level and tempo. It's too much to take in all at once. At times it seems like they're playing with independence between parts of their bodies as well—disparate activity between arms, legs, and spine. It's hard to believe that this much activity is being generated by only three bodies.

Eleanor, Cecilia, and Rebecka refer to this improvisational score as “dancing not the dancer,” to which I respond with “drumming not the drummer.”

The musical texture grows with the addition of a snare echoing the hi hat rhythm, then toms. In terms of location, the sounds spread to fill out a wide stereo field that emanates from behind the curtain. There's a sense that the unseen drum set is occupying

the stage along with the dancers as well as the dormant physical drum set.

The image shows a musical score for a canon. It consists of four staves of music. The first staff has a treble clef and a key signature of one flat. The second staff has a treble clef and a key signature of one flat, with an annotation 'second voice enters' pointing to a specific measure. The third staff has a treble clef and a key signature of one flat. The fourth staff has a treble clef and a key signature of one flat. The music features complex rhythmic patterns, including sixteenth and thirty-second notes, and various dynamic markings such as accents (>) and slurs.

Figure 19. “Drumming not the drummer” canon.

The percussion material is in fact a three-part canon. The hi hat rhythm is repeated precisely—though with free variation in articulated and playing technique—first by the toms and kick drum, then by the snare (see Figure 19).

The texture sounds enough like drum set, but it would probably require four players and a drum set with two hi-hats.

The drum and cymbal sounds are spaced out in a four-channel field projected by speakers hung at head height in a shallow arc behind the upstage curtain (speakers 1-4 in the diagram below). The hi hat starts in the stage monitor (speaker 5), with the level matched to the level produced acoustically by the actual hi hat sitting nearby. After half a minute or so, the hi hat crossfades into the curtain channels.

For the first performance the drum set on stage was the very same drum set that I used to record the percussion samples, making the sonic relationship to later portions of the piece where the drum set is actually played by the performers more direct. For touring we must of necessity acquire a new drum kit in each new location, but the piece still travels with its very own set of hi hat cymbals.

After a minute or so it becomes apparent that the dancers are echoing each other's movements. One with arms extended to the sides, parallel to the floor, executes a series of quick running turns—the others quickly following. One then another then the third rises from the floor on one leg, leaning forward with arms extended like a bird in flight; then a quick bend down and up at the waist, rebounding backward; a high-speed log roll across the floor punctuated with brief freeze-frames into a feline forward crawl; then an arched back with a slow neck roll is picked up by the third dancer and echoed at twice the tempo.

It's hard to tell who's leading and who's following.

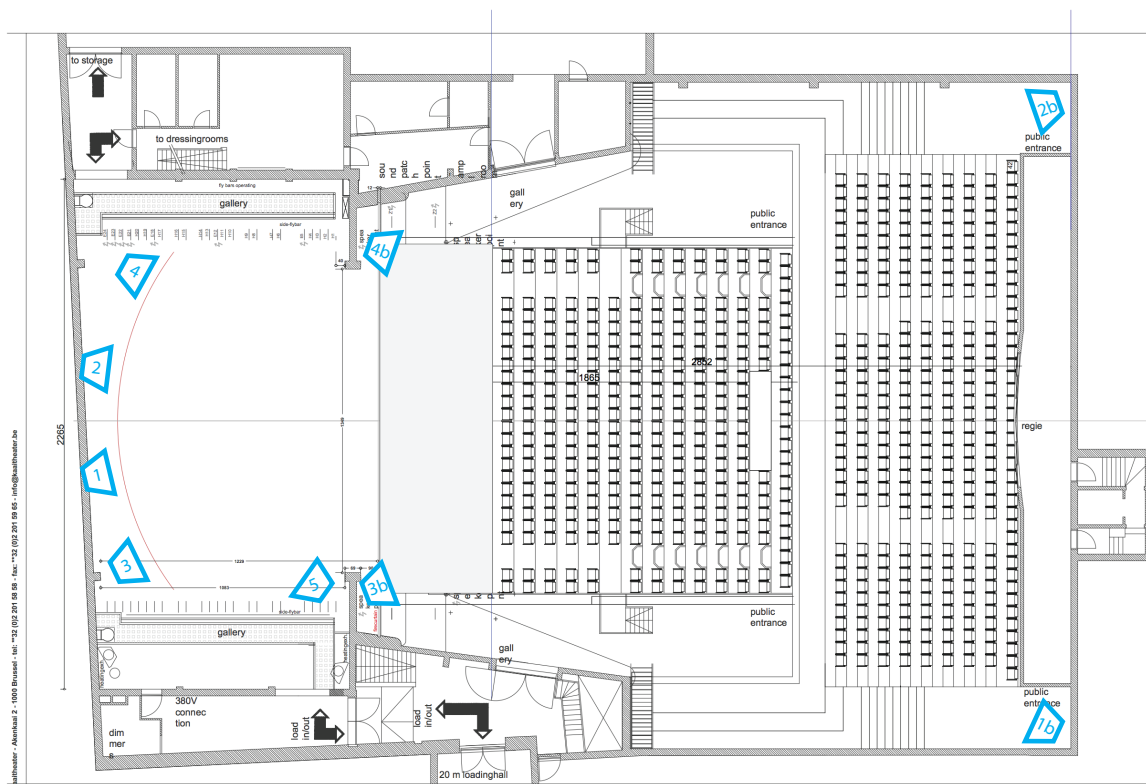


Figure 20. Speaker placement.

The dancers are both following each other and attempting to predict what the others will do next.

You notice that the drums are slowing down, perhaps with tempo decreasing at a barely perceptible rate. The dancers' pace relaxes somewhat as well, and the echoing becomes easier to follow. One has her arms extended to the sides, elbows at right angles, fists to the ceiling. But the second dancer picks up this posture and continues it in a different way, pivoting to the side and jolting into a mock body builder flex in profile. There's more and more space between the drums, allowing you to hear the dancers' feet better.

They focus on each other more, and the imitative counterpoint in movement becomes more layered.

The hi hat starts at 50bpm and increases tempo continuously as the second and third voices enter, reaching 110bpm after 45 seconds. Then the three voices decelerate continuously over the next four minutes until they reach 10bpm—effectively doubling and then quadrupling the durations.

The drums continue to slow until all sense of tempo is lost. You hear individual percussion sounds now: a single rimshot; the decay of a loose hi-hat; the thud of a kick drum; a hi-hat being opened; then a stick being scraped in a circle around the head of a snare drum as one of the dancers runs in a wide circle around the stage. As the scraping sound continues, two of the dancers stoop to reclaim their previously discarded papers and start chanting as before. The third keeps dancing for a few moments and then joins them, completing the same chord they were singing at the start of the piece: a seventh chord with no fifth. As they sing they begin to walk around the stage, continuing to face front. They move in expanding and contracting spirals, together and apart, weaving in between one another. As each moves to the front her voice rises slightly above the others, making it easier to pick out her words in the mix. The speed of their walking varies independently as they move. At first the pattern of pitches is the same as before: chords slowly moving in a cyclical progression. But at some point the pitches begin to slide. They continue to chant on crisscrossing glissandi that now and then arrive on clear triadic harmonies.

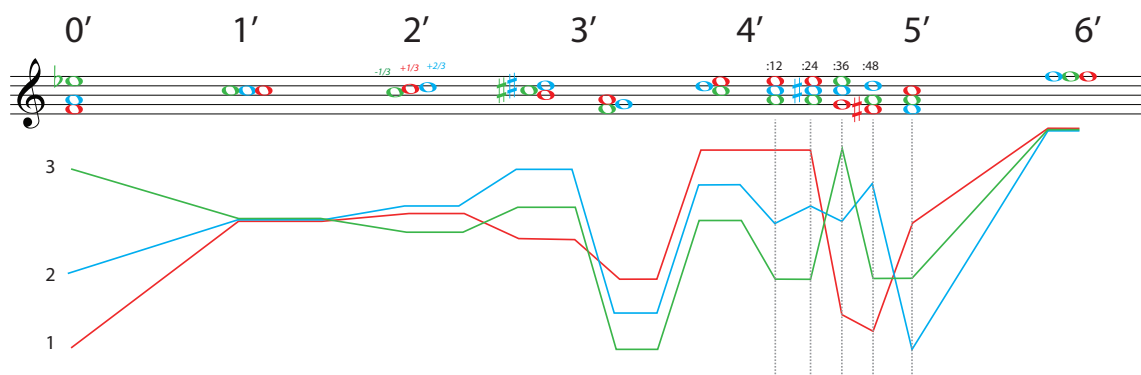


Figure 21. Sliding pitch material for second chanting section.

You notice that one of them has a wire running down the back of her neck from her ear. This must be a microphone to amplify the singing. The wire is well camouflaged with stage makeup. You can't tell if the other two dancers are wearing microphones as well. You also can't hear whether or not the singing is amplified.

The wire is in fact for an earphone connected to a tiny mp3 player. The dancers receive cues and pitch guides for the singing sections from audio tracks which are synchronized before the audience enters. Few people notice the earphones, and those who do assume they are mics. The singing is reinforced slightly through a pair of PZMs at the front of the stage.

They crescendo as their voices join on a higher pitch. Their paths converge in the upstage right corner. Then they stop singing abruptly and throw their papers into the air. The light shifts.

Staying within a confined area, they begin to execute a sequence of movements. They are independent from one another but manage to share the space while avoiding collision. Their movements must be tightly choreographed. Their feet against the floor—

stomping, brushing, squeaking against the vinyl surface—have a rhythmic quality. Then—snap, boom, boom, snap, boom—a rhythmic sound is incorporated into the sequence. As they perform these movements their confined area travels along the diagonal towards downstage left.

Then you notice that they're repeating the sequence of movements exactly. When they repeat the movements for the third time, you notice that the tempo is shifting as well, from extremely slow to extremely fast. When they reach the downstage extent of their diagonal path they reverse course and head back up.

For this section the dancers have a metronome in their ears with slowly shifting tempo. This is probably the only way that such precise synchronization could be possible “in silence,” that is, without reference to the rhythmic framework of a musical accompaniment.

There's a sound of church bells which sounded at first as if it was coming from outside, but your attention was drawn to it when it faded out and then back in again. Now that you think of it, it's the wrong time of day for church bells. It's Saturday night but this is a familiar sound from Sunday morning. Then you notice other incongruous ambient sounds: birds chirping and occasional voices. You can pick out a few words in Dutch. It's a conversation between a man and a woman:

Man: I know but...
Woman: I think this is the best way to get there quick.

Man: *It's so much less spectacular.*

Woman: *Yeah, that's true.*¹⁴⁹

It sounds as if it could be people having a conversation backstage or in an adjoining room with an open door, unaware that they were disrupting a performance in progress. But why would they be speaking in West Flemish dialect?

The field recording was made in Kortrijk where we were in residence working on the piece. It's been heavily edited and layered. The church bells fade in and out in a repeating pattern, once for each traversal of the diagonal path. The Sunday morning sounds emanating subtly from behind the curtain give the effect of a window on the upstage wall—which is in fact solid thick concrete. This connects to another subliminal aspect of the scenography: a small fan hits the curtain from the side causing it to ripple ever so slightly.

I considered replacing the field recording with a new one from the location of the performance, thinking that this could become part of the ritual of the piece on tour: a new field recording for each new city. But the mismatch between the ambient sound and the location became interesting, especially in how these particular sounds so clearly evoke a small town Sunday morning suspension of time. Travel is another technology of shifting tempo.

The dancers head back downstage for a third pass along the diagonal. As they approach the downstage left corner again their tempo continues to slow, approaching a

149. Translation generously provided by a colleague who works with Eleanor's management company. Ruth Dupré, email message to the author, June 18, 2013.

I look at you and we go to
and you did e-xac-tly the same thing
and we smile

diff-erent ci-ties ha-ving cof-fee in the sun
and we ne-ver meet we dance
af-ter one af-ter-noon

like ne-ver be-fore

Figure 22: “I look at you” opening phrase. Text by Rebecka Stillman.

*is not what it is
at present.*

Their voices begin to subtly echo through the PA system. This might be what the wireless mics were for—to process the voices. But the echoes start to fall out of sync with the singing. And then there are other voices—male as well as female—joining in an unseen chorus with the three onstage.

*I will never
never remember
remember how I felt
how I felt or thought
thought before I learned
I learned to speak.*

The amplified voices are pre-recorded. They are the dancers who are currently onstage along with myself and the scenographers plus a few of the office staff of the theater, forming a kind of virtual community choir.

As the chorus builds the drumming suddenly grows louder. The performers stop singing as echoes of the chorus reverberate throughout the room. They continue to drum as the echoes fade into a stuck note on an organ and then eventually to silence over the next few minutes.

This is the first time in the piece that the main front-of-house and rear speakers are used. The chorus starts in the stage speakers, blending seamlessly with the live voices, then fades first into the mains (3b and 4b in the diagram) and then the rear speakers (1b and 2b). With this gesture of represented rather than actual audience participation, the sound field expands to encompass the audience.

They set down their sticks and separate, taking up positions around the edge of the stage to the front and back. They begin another improvised dance. Soft percussion sound starts from the speakers: a low tom and a cymbal played with a mallet on its bell opens up a space for some fast footwork from the dancers. Then after a silence the sound of a cymbal being removed from a hi hat stand. Steady clicking and an irregular rhythm on the toms, and the dancers suddenly slow their pace. A roll on the low tom as one of the dancers turns quickly several times in place. Silence, and all three dancers suddenly double their tempo. Then a violin melody—walking down a minor scale—sounds as if it's coming from an old radio.

This is the opening bars of a recording of *Rejoice!* by Sofia Gubaidulina, played from a mobile phone into a floor tom.

A loose hi hat picks up the tempo on quarter notes and drowns it out. Aggressive toms join for a few seconds. They suddenly stop and the dancers are on the floor. In the silence one stiffens and falls forward, landing on the floor with intentional awkwardness in the silence. From the phantom drummer we hear a drumstick thrown limply at the kit, ricocheting off a rim and the edge of a cymbal. The dancers squeak against the floor as the drummer places his hand on the head of a tom, squeaking across it as well. (Stage surface as drum head?) A burst of rattling snares and aggressive hi hat as the dancers throw themselves into various slow, deep, lunges, reaching towards the ceiling. Rattles and clicks as the movement becomes suddenly more articulated.

In this section the dancers receive sequences of adjectives in their headphones which were recorded by Eleanor. A new set of words redirects their improvisation every

fifteen seconds. I recorded the percussion in three layers of fifteen-second segments, piecing together the final composition in post. The relationships described above between the music and the dance shift considerably from performance to performance.

There's a soft firecracker pop which at first sounds quite at home in the sound world of the percussion. But then a cloud of blue smoke shoots in from the right, expanding to fill about three quarters of the stage over the next minute. The dancers lie flat with intense internal focus. The phantom drummer throws his sticks at the kit again, this time both of them and more forcefully. There's a floor tom roll and slight rattling of cymbals as the smoke begins to dissipate and spread out over the audience. This is ominous as the smoke billows out towards me. You assume it's safe to breath? You can smell the gunpowder from the smoke bomb—a vivid sense memory for anyone who's ever lived in a place of war.¹⁵⁰ A few plaintive strikes on a mid tom as the dancers sit motionless.

A second smoke bomb goes off, this one red. As the new smoke enters the stage a green side light cuts through it. The dancers come back to life. Someone in the audience coughs. Rattling on drum rims. A third smoke bomb—another blue one—enters from the same location, filling the stage along with the red, curling together and mixing as it expands. Another person coughs. The smoke isn't bothering you, but it's clearly irritating one or two other people in the audience. More colored lights fade in, crisscrossing the stage in beams that subtly evoke a rock show. The dancers move in quicker, more articulated sequences reminiscent of the beginning of this section. Then the three arrive in

150. Bardia Mohammad, our lighting designer, grew up in Iran. He made this observation.

positions within a few steps of the center line, one upstage, one in the middle, and one midway downstage. Their backs facing us, they slowly bend down.

They fold towards the floor in extreme slow motion. Arms spread out and curl back in. They are evolving symmetrical structures. Time seems to be slowing down. It's psychedelic. As the smoke clears, soft electronic tones gradually become audible. One rolls onto her back, knees bent, hands and feet opening upward. Another rolls back into a shoulder stand, legs twisting upward in a slightly torqued or imperfect symmetry.

The electronic tones grow in volume and range. Low tones emerge to support higher tones which twinkle with phase interference. The tones are not emerging from the stage per se—like the drum sounds—but seem to come from all directions.

The tones are derived from spectral analysis of the triangles, from recordings of the very same triangles being played by the dancers. These are dense inharmonic collections of frequencies. Unlike the audio in previous sections, these sounds are distributed equally between the front and rear speakers for a diffused, ambient effect which echoes the diffusion of the expanding clouds of smoke.

The dancers roll out of their inverted sculptures and come together in the center as they return to pedestrian speed. They walk together to take back their triangles. As they return to center stage, the light shifts and pure white light streams down from the grid—shafts visible in the fading haze of smoke. They throw a star of symmetrical shadows on the floor recalling the sculptures of the previous section. The dancers slowly begin to beat their triangles. At first the sound is indistinguishable from the electronic tones. The lower tones fade away as the intensity of the triangles increases. You think you're starting to hear

difference tones between the triangles, but it's impossible to separate the acoustic sound from the electronic.

The shared frequency content between the live and recorded material alone would create this confusion, but as the dancers begin to strike the triangles the tones are granulated with percussive envelopes. This sound blends with the sound of the live strikers on stage to create further spatial diffusion of transients. The electroacoustic elements fade away as the live triangles increase in intensity, but the quality of the triangle sounds makes for a smooth transition. The rich high frequency content of the triangles frustrates auditory localization, while difference tones create subtle “third ear” effects that carry an unfamiliarity usually associated with electronic sounds. The blend is further reinforced through slight reinforcement through the previously mentioned pair of PZM’s, but our experience has shown that these aren’t really necessary to achieve the desired result of confusion between the acoustic and electroacoustic (amplified) elements.

The dancers walk as they play, circling each other in an expanding spiral. As they reach the edge of the stage they move towards the exits, continuing to play. It becomes more clear that all you’re hearing now is the acoustic sound of the triangles. You continue to hear them as they pass through doors—one on her way through the stage door to the dressing rooms, the second through a side door house left, and the third through the house right lobby door. The sound gradually fades into the distance as they walk away.

Conclusion

Composition in an *expanded field of performance*, independent from and interdependent with dance, and taking dance seriously as a collaborative partner, offers us as composers a number of useful resources, opportunities, and provocations. And we can know the satisfaction of music's resources being more fully utilized in turn.

We are invited to respond to different configurations of space, and to allow these configurations to inform the relationship of music to its audience. Spatial configurations (triangles) also suggest musical structures (3-channel sound, 3-part counterpoint) as do configurations of people (the guitar as a social body for six strings, independent and interdependent—three tall, three short/three wound, three unwound, or three notes of a triad as three individuals united in a common purpose, but whose roles can quickly shift between root, third, and fifth).

We acousmatize and de-acousmatize. We play with the drama of seen and unseen sound. We explore how the same structure articulated sonically as well as visually with moving bodies may have very different results.

We are invited to *not* assume that dance is voiceless, but utilize the full capacity of the performer to make sound. Musical instruments may be useful, and simple instruments may offer complex possibilities (as opposed to complex instruments offering simple possibilities, as in interactive dance). Recording extends the palate of simultaneous music and dance executed by the same performers. Dancers (as Cage knew with his early percussion ensembles) are the ideal “untrained” performers. They make

perfect partners in exploring new ways of using familiar instruments, free of the baggage of any particular instrumental training, but bold with the confidence of trained bodies yoked to musical imaginations and extramusical intelligences. (Not to mention the fact that many of them have studied instruments as well. Dancers usually know more about music than you know about dance, at least at first.) Compared to musicians, they're a little less concerned about sounding "bad," which opens up more possibilities for confidently-performed unusual sounds, as well as harnessing the effects of actual mistakes. Their memories are not dulled by too much reliance on notation. And they can write with their bodies in real time, becoming their own dynamic, graphic scores.

Untrained (or differently trained) performers facilitate the investigation and staging of imagined social music practices (cf. Meredith Monk's "folk music from another planet").¹⁵¹ When we watch music and dance on stage, we see a model of how we might relate to music. Dance models modes of listening and lived interpretation. We are invited to intervene in and play with the rituals of performance, both presentational and everyday. (We delight in the expectation built by an instrument placed on an empty stage before a concert. We compose in the mode of improvised songs of an afternoon picnic with friends.) And beyond the social and the dramatic, we play with "expression" abstractly—the point of view not personal, or of a character in a particular narrative, but of an abstract concept personified. (What song would the triangle sing?)

151. William Duckworth, "Meredith Monk," in *Talking Music* (New York: Da Capo Press, 1995), 359.

Music and dance have different tools for dealing with time that can be complimentary. Dance has a sense of breath which shifts radically according to the body's activity and exertion. Music has metric organization as well as technologies of the clock. And tuning provides even finer-grained approaches to synchronization. Technologies of composition such as harmonic progression create fields of time which are not flat. Choreography modulates our sense of time through the dynamics of motion in space, providing suggestive non-flat timescapes against which to compose. We are freed somewhat from our responsibility for constantly managing time. Instead, we can create sculptures. We can create just the right kinds of sculptures for a specific dance teleology to play against—music for dance as site-specific sound sculpture.

Music can modulate the theatrical weight of text so that it can inhabit the performance space amicably with dance, not hijacking the focus. And dance can also free music from the burden of always having to create its own interpretive context. Dance can suggestively anchor music's meanings in a fashion more free-floating and polyvalent than, say, a program note or a song text. Dance can have some of the powers of abstraction that we associate with music, while also more fully harnessing the power of the body as a broadly accessible ground reference.

Likewise music can frame dance, and this in itself is an interesting situation. Music which is always in the foreground after all misses out on exploring the different ways of being in the background, not to mention all the ways that music can recede from focus—gracefully or clumsily—and then re-enter—either sneakily or by a jolt. It's only

really possible to play in this space of possibilities if something else is going on. And by collaborating in an *expanded field*, it becomes possible to know what else will be going on, and also to participate through collaborative process in crafting extra-musical activities which share audience attention.

Dance reaches us sympathetically through our sense of our own bodies in relation to those on stage (kinesthetic sympathy) and sound touches us viscerally. Singing together is a form of touch. And watching a dancer sing is different than watching a singer sing. We are encouraged to identify with the body onstage, to enter with our embodied imaginations into the process of vocalizing in a particular configuration, posture, attitude, affect, or situation. This is not just Barthes' "grain" but the body itself behind the voice, and the body before or in front of the voice as well. Then actual audience participation comes into play too.

And through that same kinesthetic sympathy, we can experience dance to undanceable music, that is, music that we could not otherwise imagine dancing to. We can experience a physical engagement with music which might not engage our bodies so intuitively on its own. We can develop a richer understanding of a circulation of gestures between the choreographed and the instrumental. Amplification at human scale allows us to experience the sound of the dance (feet and skin against the floor, friction and collision between bodies) as a layer of sound that interpenetrates with the music.

There are many new opportunities to be freed from our own aesthetics. If we trust our collaborators, we can open up to the potential of following an opinion which we

know to be valid, even if we do not agree. We can plunge boldly into “experiments in taste.”¹⁵²

We are offered the opportunity, support, and provocation to shift between different roles which may fall under that broad heading of “composer” including sound designer, producer, recordist, arranger, performer, consultant, vocal coach, theorist, and musicologist, and to shift between and combine these roles. We are called even, to be utilized as dancers.

If composers can better understand how to engage with dance not by holding it at arm’s length or subsuming it under familiar music paradigms, but by working collaboratively with choreographers, dancers, and designers in an *expanded field of performance*, they will be better prepared to meet the demands of composing in a variety of shifting contemporary contexts. Dance can teach us something about embodiment and also about sound in space, but that is only the beginning of what we have to learn from a fuller engagement with dance collaboration as composers. We can learn how to activate shifting modes of listening as a compositional parameter; how to think about the various frames in which our music is heard—and to imagine new ways of constructing those frames; how to compose in a way that embraces rather than ignores cultural context; and how to see the richness of music’s role in constructing and expressing identity as a resource rather than a constraint or distraction.

152. Carl Wilson, *Let’s Talk About Love: A Journey to the End of Taste* (New York: Bloomsbury, 2007), 18-19.

The *expanded field* implies that every musical performance can be approached as a dance performance. We can and should continue questioning the standard frames in which our music is heard, not to discard them, but to better understand what they imply about how we do our work. If we compose for acoustic instruments on stage and audience members who know to sit quietly in plush seats that are bolted to the floor in an arrangement from the 19th century, perspectives from dance can offer us new ways into thinking about how the music we write might be informed by an audience's experience of that context. Likewise if we write for a ring of eight speakers in a darkened black box theater, a pair of headphones in an art gallery, or a rock band in a noisy bar. Working with dance can help us develop our ability to harness the tools of composition and computer music craft towards deeper engagement with music as it is actually experienced by all those who participate.

Future Work

This study of music-dance collaboration is far from a complete exploration of the topic. My investigation thus far suggests numerous areas for further research which I hope to have the opportunity to pursue.

My perspective on music and dance is situated in US and European high art contexts, and my observations could become more coherent and more broadly accessible and applicable with the addition of a thorough account of my own artistic and collaborative *process* as well as consideration of the shared aesthetic assumptions of my

particular art world. There are many important aesthetic precedents for this work which I have not discussed, including the New York City “downtown” dance scene of the 90s that became the community in which Eleanor Bauer and I made our first collaborative pieces in the early 2000’s.¹⁵³ There is much work to be done in charting lineages of music-dance back through the careers of important composer-performer-collaborators like Zeena Parkins, Hahn Rowe, and others.¹⁵⁴ Through our teachers and mentors there are also direct connections back to dance avant-gardes of the 80s, 70s, and 60s in both the US and Europe.¹⁵⁵ Understanding these connections will be an important aspect of filling in the leap made in this dissertation from Merce Cunningham and John Cage in Chapter 1 to contemporary academic computer music in Chapter 2. A more thorough consideration of modernism in general and the very idea of an “avant-garde” will also be an important aspect of completing this picture.

The discussion of the collaboration with Eleanor would also benefit from more detail in the area of collaborative roles, for instance what is implied in terms of control or

153. For an overview of one important slice of this scene, see Charles Dennis, *Homecoming: Celebrating 20 Years of Dance at P.S. 122*, 2004, accessed September 28, 2014, <http://search.alexanderstreet.com/view/work/716840>.

154. Zeena Parkins and Danielle Goldman, “A Conversation with Zeena Parkins 7 May 2007,” *Women & Performance: a journal of feminist theory* 17, no. 2 (July 2007): 247–256; Hahn Rowe and Chris Peck, “Hahn Rowe: Interview with Chris Peck,” *Movement Research Performance Journal*, no. 36 (October 10, 2009): 12–13.

155. One important starting point for understanding these lineages is Banes, “Dancing (with/to/before/on/in/over/after/against/away From/without) the Music.”

power by the status of “director” or “choreographer” in relation to “composer” or for that matter the roles of performers and designers. This is a complex topic that will require better integration of my collaborators’ perspectives along with my own, and I look forward to pursuing that direction as I bring the project into its next stages.

In Chapter 2 I have made a few pointed critiques of recent work in computer music and dance. I intend to offer the description of my own collaborative work in chapters 3-6 in the spirit of providing access to support others who might make similarly pointed critiques from their own perspectives. More information about the process and shared aesthetic assumptions of my own creative work would also more fully support that kind of critique. I hope that in the future with more distance I will myself be able to adopt a more fully self-critical attitude as well.

The very idea of “music-dance collaboration” also depends upon the assumptions of the western art context, but even within this context the idea is limiting. My investigation of music and dance should expand to include intermedia artists who ignore and blur distinctions between music, dance, and other genres of performance, including Meredith Monk and many others. Implicit in my insistence on putting collaboration at the center of this study is the notion that something important is at stake in maintaining the integrity of disciplinary boundaries in certain ways while blurring, crossing, ignoring, or subverting them in others. This is certainly an area for further investigation and clarification. Amongst other things, such a broadening of perspective begs the question of

why I choose to engage with dance as a composer-collaborator rather than directing or even choreographing theatrical works “of my own.”

My insistence on situating this study in the context of the scant music composition discourse on dance collaboration is also problematic and contradictory. I place high value on interdisciplinarity, so it would make sense to look more thoroughly outside of the discourse of composers. There are significant discussions of music and dance from other areas of music studies such as musicology, notably by scholars like Stephanie Jordan.¹⁵⁶ This study could no doubt be enriched significantly by engagement with a broader range of approaches to music-dance analysis, including those which deal with popular and social dance, ballet, or more traditional forms of modern dance.

There is also a lingering question about how the scholarly investigation of Part I influences the creative work of Part II. The real answer to this question will come as I continue with collaborative projects in the future, and I can only speculate about what the many impacts will be. As I prepare the final version of this manuscript, I am also about to premiere a new work with Milka Djordjevich which explores very different approaches to simultaneous singing and dancing than the work described in this dissertation.¹⁵⁷ For

156. For an approach to Jordan’s concept of choreomusical analysis with electroacoustic composition and dance, see Peter Swendson, “The Threshold of Music and Dance: A Compositional and Theoretical Exploration of Contemporary Choreo-Musical Practice” (PhD diss., University of Virginia, 2009).

157. Jack Anderson, “Milka Djordjevich Puts Dancers on a Pedestal in ‘MASS,’” *The New York Times*, April 25, 2015, accessed April 26, 2015, <http://www.nytimes.com/2015/04/26/arts/dance/milka-djordjevich-puts-dancers-on-a->

instance, notated rhythms are aligned to “steps” in the choreography in a way that at times even evokes familiar popular music-dance of the 40s. This new piece also takes a different approach to the idea of “amplification at human scale,” with electronic sounds competing with and even drowning out the voices of the performers. I am also in the early stages of a new collaboration with Eleanor Bauer in which songwriting is the starting point for a work of music theater.¹⁵⁸ For this project we are working with an ensemble that includes classically trained instrumental musicians with expertise in contemporary chamber music as well as singer-dancers from the world of contemporary performance. Already the rehearsal process with this mix of performer-collaborators is bringing to the fore questions of the values we inherit from our respective disciplines when it comes to the structure of rehearsal time, training and virtuosity, process versus product, and the authority of the composer/songwriter or choreographer in relation to the engagement and creative input of performers.

If you are a composer I hope this study has stimulated your interest in seeking out opportunities to collaborate with dance, and if you already bring some interest or experience with dance to reading these words, I hope I have sparked a few ideas about

pedestal-in-mass.html; Milka Djordjevich, “Visibility Difficult,” interview by Heather Kravas, March 13, 2005, accessed April 22, 2015, <http://showboxla.org/2015/03/13/heather-kravas-and-milka-djordjevich-on-mass/>.

158. Eleanor Bauer, “Meyoucycle,” *Good Move*, accessed April 26, 2015, <http://goodmove.be/MEYOUICYCLE>.

how to proceed more productively as well. Further, I hope that I have made a case for taking an interest in dance on its own terms, and also for the value of seeking out collaborators whose interests mesh well with your own. There's such a wide range of practices in contemporary dance, and no one should expect that an arbitrary pairing of collaborators will necessarily work. Choreographers are no more interchangeable than composers.

Appendix A

Video Documentation of A Dance for the Newest Age (the triangle piece)

YouTube URL: <https://www.youtube.com/watch?v=E17nxOVJOG4>

Download URL (UVa Only): <https://virginia.box.com/trilogy>

Recorded in performance 11 February, 2011 at kaaitheater, Brussels, BE:

Duration: 1:27:24

Video/audio recording, editing, and mixing by Chris Peck

Performance Credits

Choreography

Eleanor Bauer

Created with and Performed by

Eleanor Bauer

Cecilia Lisa Eliche

Dolores Hulan

Liz Kinoshita

Thibault Lac

Naira Menioroz

Music

Chris Peck

Lighting

Bardia Mohoammad

Costumes

Ada Rajszyś

Dramaturgy

Jeroen Peeters

Special thanks to

Anna Whaley
Paul Laffoley
Mårten Spångberg
Beth Gill

Production

Caravan Production for GoodMove vzw

Co-production

Kaaithheater (Brussels)
Vooruit (Ghent)
STUK (Leuven)

In collaboration with

Kunstencentrum Buda (Kortrijk)
ImPulsTanz Festival (Vienna)

With the support of

The Flemish Authorities
The Flemish Community Commission of the Brussels Capital Region (VGC)

Appendix B

Video Documentation of Tentative Assembly (the tent piece)

YouTube URL: <https://www.youtube.com/watch?v=6k9thCwdLII>

Download URL (UVa Only): <https://virginia.box.com/trilogy>

Recorded in performance 7 May 2012 at kaaitheater, Brussels, BE:

Duration: 1:21:56

Video/audio recording, editing and mixing by Chris Peck

Performance Credits

Direction

Eleanor Bauer

Choreography and Performance

Eleanor Bauer

Cecilia Lisa Eliceche

Magali Caillet-Gajan

Michael Helland

Liz Kinoshita

Michiel Reynaert

Manon Santkin

Gabriel Schenker

Adam Weig

Dramaturgical & Choreographic Assistance

Pierre Rubio

Music

Chris Peck, with the performers

Scenographic Collaboration

88888

Lighting

Colin Legras

String Figures Specialist

Philip Noble

Production

Caravan Production for GoodMove

Coproduction

Kunstenfestivaldesarts (Brussel, BE), Kaaitheater (Brussel, BE), Rotterdamse Schouwburg (NL), Centre Chorégraphique National de Montpellier Languedoc-Roussillon (CCNM) (Montpellier, FR) in the frame of Jardin d'Europe, TAKT Dommelhof (Neerpelt, BE), PACT Zollverein (Essen, DE), workspacebrussels (Brussel, BE)

With the support of

the Flemish Authorities, NXTSTP and Jardin d'Europe / the Culture 2000 Programme of the European Union (2007-2013)

Special Thanks

Rudi Laermans, Fabrice Ramalingom, Nassia Fourtouni

Appendix C

Video Documentation of Midday & Eternity (the time piece)

YouTube URL: <https://www.youtube.com/watch?v=AeLn6BPruLA>

Download URL (UVa Only): <https://virginia.box.com/trilogy>

Recorded in performance 10 December 2014 at kaaitheater, Brussels, BE.

Duration: 1:01:20

Video/audio recording, editing and mixing by Chris Peck

Performance Credits

Concept and Direction

Eleanor Bauer

Choreography and Performance

Eleanor Bauer

Rebecka Stillman

Cecilia Lisa Eliceche

Naiara Mendioroz

Music

Chris Peck

Scenography

88888

Lighting

Bardia Mohammad

Costumes

Ada Rajszys

Production

Caravan Production for GoodMove vzw

Coproduction

Kaaithheater (Brussels), BUDA (Kortrijk) in collaboration with Festival Latitudes Contemporaines (Lille), Vooruit (Gent), residencies SIN Culture Center (Budapest), PACT Zollverein (Essen)

With The Support of

The Flemish Authorities and the
Flemish Community Commission of the Brussels Capital Region

Special Thanks

Nathan John, Mylène Lauzon, Thibault Lac, The Wild Unknown

Appendix D

Performance List

Performances to date from the triangle trilogy.

Reverse chronological order by work.

Midday & Eternity (the time piece)

Kaaithheater, Brussels, BE. Dec 9-10, 2014.

LISTE Art Fair, Kaserne, Basel, CH. Jun 17, 2014.

Vooruit, Gent, BE. Apr 23, 2014.

Spider Festival, Les Subsistances, Lyon, FR. Apr 18-19, 2014.

American Realness Festival, Abrons Arts Center, New York, US. Jan 16-18, 2014.

Kaaithheater, Brussels, BE (premiere). Sep 19-21, 2013.

Festival Latitudes Contemporaines, Kunstcentrum BUDA, Kortrijk, BE (preview)
Jun 19-20, 2013.

Tentative Assembly (the tent piece)

PACT Zollverein, Essen, DE; 2012.

Göteborgs Dans & Teater Festival, Göteborg, SE. 2012.

Kustfestivalaldesarts, Kaaithheater, Brussels, BE (premiere). 2012.

A Dance for the Newest Age (the triangle piece)

Frascati, *Something Raw Festival*, Amsterdam, NL. Feb 14-15, 2012.

Kaaithheater, Brussels, BE. Dec 16-18, 2011.

Vooruit, Gent, BE. Sep 29 - Oct 1, 2011.

Kaaithheater, Brussels, BE (premiere). Feb 10-12, 2011.

Appendix E

Triangle Oscillators

• = 60

1:00

$n = 11$ (180 Hz) -10

$n = 10$ (164 Hz) -14

$n = 9$ (147 Hz) $+4$

$n = 8$ (131 Hz)

$n = 7$ (114 Hz) -31

$n = 6$ (98.1 Hz) $+2$

$n = 5$ (81.8 Hz) -14

$n = 4$ (65.4 Hz)

$n = 3$ (49.1 Hz) $+2$

$n = 2$ (32.7 Hz)

Detailed description: The image displays ten musical staves, each representing a different frequency and phase value for a triangle oscillator. The staves are arranged vertically, with the highest frequency at the top and the lowest at the bottom. Each staff begins with a bass clef and a 4/4 time signature. The frequency and phase value are indicated to the left of each staff. The phase values are: -10, -14, +4, (blank), -31, +2, -14, (blank), +2, and (blank). The notes are represented by small circles connected by a wavy line, forming a triangle wave. A tempo marking '• = 60' is located at the top left, and a time marker '1:00' is at the top right. A small musical notation fragment is visible at the top right of the page.

This musical score is written for guitar and consists of 11 staves, numbered 11 down to 2 from top to bottom. The notation is as follows:

- Staff 11:** Features a complex rhythmic pattern with sixteenth notes and a dynamic marking of *ff*. A time marker **2:00** is positioned above the staff.
- Staff 10:** Contains a series of quarter notes with a dynamic marking of *-1/4*.
- Staff 9:** Contains a series of quarter notes with a dynamic marking of *+4*.
- Staff 8:** Contains a series of quarter notes with a dynamic marking of *-*.
- Staff 7:** Contains a series of quarter notes with a dynamic marking of *-7* and a slur over the notes.
- Staff 6:** Contains a series of quarter notes with a dynamic marking of *+2*.
- Staff 5:** Contains a single note with a dynamic marking of *-*.
- Staff 4:** Contains a series of quarter notes with a dynamic marking of *8*.
- Staff 3:** Contains a series of quarter notes with a dynamic marking of *8*.
- Staff 2:** Contains a series of quarter notes with a dynamic marking of *8*.

This musical score is arranged vertically with 11 staves numbered 11 down to 2 from top to bottom. The notation is as follows:

- Staff 11:** Treble clef, contains a melodic line with a double bar line and a fermata. A *-10* marking is above the staff.
- Staff 10:** Bass clef, contains a melodic line with a double bar line and a fermata. A *-14* marking is above the staff.
- Staff 9:** Bass clef, contains a melodic line with a double bar line and a fermata. A *+4* marking is above the staff.
- Staff 8:** Bass clef, contains a melodic line with a double bar line and a fermata.
- Staff 7:** Bass clef, contains a melodic line with a double bar line and a fermata. A *7* marking is above the staff.
- Staff 6:** Bass clef, contains a melodic line with a double bar line and a fermata.
- Staff 5:** Bass clef, contains a melodic line with a double bar line and a fermata. A *-14* marking is above the staff.
- Staff 4:** Bass clef, contains a melodic line with a double bar line and a fermata.
- Staff 3:** Bass clef, contains a melodic line with a double bar line and a fermata.
- Staff 2:** Bass clef, contains a melodic line with a double bar line and a fermata.

A time marker **3:00** is positioned between staff 10 and staff 9. At the bottom of the page, there is a double bar line and a fermata.

4:00

11

10

9

8

7

6

5

4

3

2

-14

-10

+4

+2

+2

7

8

This musical score is written for guitar and consists of 11 staves, numbered 11 down to 2 from top to bottom. The notation is as follows:

- Staff 11:** Contains a complex rhythmic figure with a double bar line and a fermata. Annotations include a time signature of 5:00, a dynamic marking of *ff*, and a fret number of -14.
- Staff 10:** Features a series of notes connected by a wavy line, with a fret number of -14.
- Staff 9:** Features a series of notes connected by a wavy line, with a fret number of +4.
- Staff 8:** Features a series of notes connected by a wavy line, with a double bar line and a fermata.
- Staff 7:** Features a series of notes connected by a wavy line, with a time signature of 7/8, a dynamic marking of *ff*, and a fret number of 3/1.
- Staff 6:** Features a series of notes connected by a wavy line.
- Staff 5:** Features a series of notes connected by a wavy line, with a fret number of -14.
- Staff 4:** Features a series of notes connected by a wavy line, with a fret number of 8.
- Staff 3:** Features a series of notes connected by a wavy line, with a fret number of 8.
- Staff 2:** Features a series of notes connected by a wavy line, with a fret number of 8.

Vertical dashed lines connect the staves, indicating the alignment of notes across the different lines. The fret numbers are placed above or below the notes they apply to.

6:00

-1/4

+2

11

10

9

8

7

6

5

4

3

2

Detailed description: This is a musical score for guitar, consisting of 11 staves. The staves are numbered 11 at the top and 2 at the bottom. Each staff begins with a bass clef. The music is written in a single line on each staff, featuring a series of notes connected by a wavy line. The notes are positioned on the lines of the staff, with some notes on the space between lines. The score is divided into two sections by a vertical dashed line. The first section contains staves 11, 10, 9, 8, 7, and 6. The second section contains staves 5, 4, 3, and 2. Annotations include a time signature of 6:00 at the top left, a '-1/4' annotation above staff 10, and a '+2' annotation above staff 6. The notes in the first section are generally higher in pitch than those in the second section.

7:00

6

5

4

3

2



8:00

2

9:00

Appendix F

Science On My Mind

Science On My Mind

from *A Dance for the Newest Age (the triangle piece)*

Music: Chris Peck

Text: Eleanor Bauer

$\text{♩} = 110$

Amplified Voice

sci, sci-ence on my mind re - li - gion in my heart oh

Digital Delay, t = 7056ms

Delayed Voice 1

sci, sci-ence on my mind re -

Digital Delay, t = 14112ms

Delayed Voice 2

V

art with my hand thoughts thoughts thoughts on my mind fee -

D. 1

li - gion in my heart oh art with my hand

D. 2

sci, sci-ence on my mind re - li - gion in my heart oh

V

lings fee - lings in my heart o - pin - ions on my art

D. 1

thoughts thoughts thoughts on my mind fee - lings fee - lings in my heart o - pin -

D. 2

art with my hand thoughts thoughts thoughts on my mind fee -

25

V
rea - son on my mind de - sire in my heart oh

D. 1
- ions on my art rea - son on my mind de -

D. 2
lings fee - lings in my heart o - pin - ions on my art

33

V
pur - pose with my hands matt - ter, ter on my mind mea -

D. 1
sire in my heart oh pur - pose with my hands

D. 2
rea - son on my mind de - sire in my heart oh

41

V
ning - ful in my heart made made made with my hands

D. 1
matt - ter, ter on my mind mea - ning - ful in my heart

D. 2
pur - pose with my hands matt - ter, ter on my mind mea -

49

V
mea - ning mea - ning mind truth truth truth heart ma -

D. 1
made made made with my hands mea - ning mea - ning mind

D. 2
ning - ful in my heart made made made with my hands

57

V
te - ri - al hands time time time time

D. 1
truth truth truth heart ma - te - ri - al hands

D. 2
mea - ning mea - ning mind truth truth truth heart ma -

65

V
time spa, spa ces vi - bra - tion

D. 1
time time time time time spa, spa ces

D. 2
te - ri - al hands time time time time

73

V
vir - tu - al ac - tu - al

D. 1
vi - bra - tion vir - tu - al

D. 2
time spa, spa ces vi - bra - tion

81

V
po - ten - tial man man on my mind

D. 1
ac - tu - al po - ten - tial

D. 2
vir - tu - al ac - tu - al

89

V
 wo - man wo - man in my heart com, com - pu, pu - ter, ter com - put - ter with my hands

D. 1
 man man on my mind wo - man wo - man in my heart

D. 2
 po - ten - tial man man on my mind

97

V
 know - ledge pow - er in my heart

D. 1
 com, com - pu, pu - ter, ter com - put - ter with my hands know - ledge

D. 2
 wo - man wo - man in my heart com, com - pu, pu - ter, ter com - put - ter with my hands

105

V
 prac - tice prac - tice

D. 1
 pow - er in my heart prac - tice

D. 2
 know ledge pow - er in my heart

113

V
 know - ledge in my mind pow - er

D. 1
 prac - tice know - ledge in my mind

D. 2
 prac - tice prac - tice

121

V
 prac - tice with my hands and pow - er prac - tice know - ledge

D. 1
 pow - er prac - tice with my hands and

D. 2
 know - ledge in my mind pow - er

129

V
 know - ledge prac - tice pow - er pow - er in my heart know - ledge on my mind

D. 1
 pow - er prac - tice know - ledge know - ledge prac - tice pow - er

D. 2
 prac - tice with my hands and pow - er prac - tice know - ledge

137

V
 prac - tice with my hands prac - tice with my hands pow - er in my heart know - ledge in my mind and

D. 1
 pow - er in my heart know - ledge on my mind prac - tice with my hands prac - tice with my hands

D. 2
 know - ledge prac - tice pow - er pow - er in my heart know - ledge on my mind

145

V
 fact on my mind love in my heart sword with my hands fact on my mind

D. 1
 pow - er in my heart know - ledge in my mind and fact on my mind love in my heart

D. 2
 prac - tice with my hands prac - tice with my hands pow - er in my heart know - ledge in my mind and

153

V
love in my heart sword with my hands fact love sword fact

D. 1
sword with my hands fact on my mind love in my heart sword with my hands

D. 2
fact on my mind love in my heart sword with my hands fact on my mind

161

V
love sword fact fact love love sword sword fact fact love love sword sword

D. 1
fact love sword fact love sword fact fact love love

D. 2
love in my heart sword with my hands fact love sword fact

169

V
fact love sword fact love sword with my hands on my mind in my heart fact

D. 1
sword sword fact fact love love sword sword fact love sword fact love sword with

D. 2
love sword fact fact love love sword sword fact fact love love sword sword

177

V
sword love fact sword love fact

D. 1
my hands on my mind in my heart fact sword love fact sword love

D. 2
fact love sword fact love sword with my hands on my mind in my heart fact

185

V
sword love love love

D. 1
fact sword

D. 2
sword love fact sword love fact

193

V
love love love love

D. 1
love love love love

D. 2
sword love love love

201

V
love law

D. 1
love love

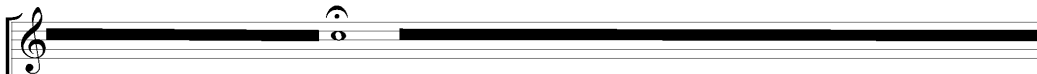
D. 2
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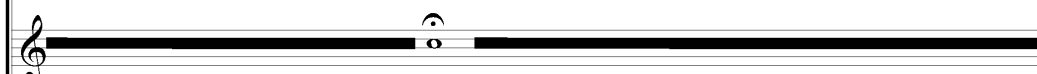


Ohm's


V




mhO



mhO

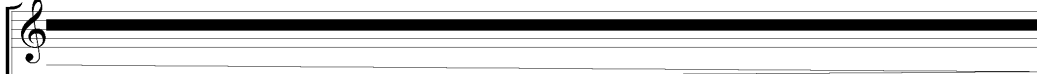


law




mhO

V




D. 1



mhO

D. 2



Appendix G

Court Dance Guitar

start in standard tuning
(EADGBE)

Left Hand (Tuning) Right Hand

LH RH

LH RH

LH RH

LH RH

LH RH

LH RH

LH RH

let ring

Appendix H

Head, Heart, Guts

Head, Heart, Guts

Music: Chris Peck
Text: Eleanor Bauer

for gut voice with overdubbed heart and head voices

♩ = 60

Guts
Heart
Head

mh - O m order is de-
mh - O m desire is de-
Ohm Ohm m law is de-

6

ter mined by the lo - gic of the guts from whence spring — sensations that are
ter-mined by the lo - gic of the heart from whence spring feelings that are
ter-mined by the lo - gic of the head from whence spring thoughts that are

10

re-ge-stered in the Rcomplex al - so known as the mammalian brain
re-ge-stered in the lymbicsystem al - so known as the reptilian brain
re - gi - stered in the neocortex al - so known as the human brain the

Head, Heart, Guts

15

posed of the a - my - gda - la hy - po - tha - la - mus and hip - po - cam - pus —

iscom of the ce - re - bral cor - tex and its con - tents —

brain of the stem and ce - re - bel - lum

18

re - spon - sible for in - stin - ctu - al be - ha - viors and the fas - stest most ru - di - men - ta - ry

are for e - mo - tions in - stincts and the four

which for high - er thin - king

20

le - vel le - vel of thought if it can be thought at all in the sense that

F's fee - ding figh - ting fu - cking and

skills rea - son judge - ment sa - pi - ence

Head, Heart, Guts

22

it in - volves no re - fle - ction but on - ly re - ac - tion and is
 in this sy - stem eve - ry - thing is
 and of course lan - guage

23

sti - mu - lus based and main - ly com - prised of the bo - dy's au -
 un - der - stood in terms of a - ttra - ction or a -
 or the a - na - to - my of

24

to - no - mous fun - ctions which is why we might al - so say that knowing is a
 ver - sion which is why we might al - so say that understanding is a
 speech it - self which is why we might al - so say that learning is a

Head, Heart, Guts

26

mat - ter of us - ing one's guts si - mul - taneously we might al - so say that

ma - tter of us - ing one's heart si - mul - taneously we might al - so say that

ma - tter of us - ing one's head si - mul - taneously we might al - so say that

29

learning is a mat - ter of us - ing one's head thus we be -

knowing is a ma tter of us - ing one's guts thus we be -

understanding is a ma tter of us - ing one's heart thus we be -

32

lieve we can se - pa-rate intellectual know-ledge from those oth - er kinds mhO ___

lieve we can se - pa-rate physical know-ledge from those oth - er kinds mhO

lieve we can se - pa-rate e - motional know-ledge from those oth - er kinds mhO

Head, Heart, Guts

36

The musical score consists of three staves, each with a treble clef and a key signature of one flat (B-flat). The first staff begins in 3/4 time and changes to 4/4 time at the fourth measure. The second staff begins in 3/4 time and changes to 4/4 time at the fourth measure. The third staff begins in 3/4 time and changes to 4/4 time at the fourth measure. The lyrics 'Ohm mhO' are written below the notes on each staff.

Ohm mhO mhO Ohm mhO Ohm mhO

Ohm mhO Ohm Ohm Ohm Ohm

Ohm mhO mhO mhO mhO mhO

Appendix I

Early sketch of Liz Kinoshita's *Dear Ms. Representative*.

Bm G7 F#7 Bm F#7 Bm

dear ms rep-re sen-ta tive. I'm wri-ting this to you—and i hope that you will read it so you'll know my

5 E7 A E7

heart is all a cla-mor and i stut-ter and i sta-mor be-cause I don't know what the fu-ture holds I guess I'm

9 A E7 A F F#

just a-no-ther ci-ti zen but i thought i'd write to let you know I want to help but they

14 B F# E

call me_ i-dea-lis-tic they say be_re-a-lis-tic_I'm do ingfine but whoknows what hap-pens next year you

18 NC

must un-der-stand my fear you make me hap-py some times you make me sad but

1:11

21

most of the world feels a lurk-ing oh so bad_ who can ex-plan it a year-ning for a dif-ference a

25

sys-temthat makes more sense ca-pi-ta-li-sm grucls where's our tools feellike fools who made these rules now

29

i'm not say-ing that eve-ry one's e-equal but won-der-ing with glo-bi-li-zation

32

what is our se-qual re-ques-tion your fu-ture too!

POSSIBLE CHORUS, could be repeated after the spoken text or at the end?

38

why why why que - stion tra - di - tion why de - ny the sta - tus

backup singers

and a - gain and a - gain
tell me why! tell me why!

insert something here like...
question the future or you're die? a
ask why or you'll die?
be like a bratty kid always asking why
be a brat! it's imperative!

quo a - gain and a - gain and a - gain and a - gain re -

que - stion - and re -

que - stion re - ques-tion your fu - ture too!

Ah gee Ms. Representative, I wanna play at the game of life, and I wanna win, too. But I'm realizing that the rules my parents played by, might not be for me. Maybe, in this day and age, we can't afford to play it like they did. When today, bringing everyone in the world above the global poverty line (a buck and a quarter a day) would need just 0.2% of global income, maybe I should include some other concerns besides making enough dough for myself. Aw, you might argue, that's none of your business, 'Cept when governments send aid to impoverished regions they often also give in to big corporations who are clearly looking for more gain, much much more. Why, it's a known fact that excessive resource use by the world's richest 10% of consumers crowds out much-needed resource use by billions of other people. Shucks, when there're solutions in front of our noses let's figure out what's stopping us?!

66

it push - es push - es push - es push - es push-es me to want things_ while

69

all the while we'd get some-where if we could just try things re - ques-tion your fu - ture too!

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