



Kent Academic Repository

Vass-Rhee, Freya (2011) *Audio-Visual Stress: Cognitive Approaches to the Perceptual Performativity of William Forsythe and Ensemble*. Doctor of Philosophy (PhD) thesis, University of California, Riverside.

Downloaded from

<https://kar.kent.ac.uk/60508/> The University of Kent's Academic Repository KAR

The version of record is available from

<http://escholarship.org/uc/item/24q5c71p>

This document version

Author's Accepted Manuscript

DOI for this version

Licence for this version

UNSPECIFIED

Additional information

Versions of research works

Versions of Record

If this version is the version of record, it is the same as the published version available on the publisher's web site. Cite as the published version.

Author Accepted Manuscripts

If this document is identified as the Author Accepted Manuscript it is the version after peer review but before type setting, copy editing or publisher branding. Cite as Surname, Initial. (Year) 'Title of article'. To be published in *Title of Journal*, Volume and issue numbers [peer-reviewed accepted version]. Available at: DOI or URL (Accessed: date).

Enquiries

If you have questions about this document contact ResearchSupport@kent.ac.uk. Please include the URL of the record in KAR. If you believe that your, or a third party's rights have been compromised through this document please see our [Take Down policy](https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies) (available from <https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies>).

UNIVERSITY OF CALIFORNIA
RIVERSIDE

Audio-Visual Stress: Cognitive Approaches to the Perceptual Performativity
of William Forsythe and Ensemble

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Dance History and Theory

by

Freya Vass-Rhee

December 2011

Dissertation Committee:

Dr. Sally Ness, Co-Chairperson

Dr. Anthea Kraut, Co-Chairperson

Dr. Lawrence Rosenblum

Neil Greenberg

Copyright by
Freya Vass-Rhee
2011

The Dissertation of Freya Vass-Rhee is approved:

Committee Co-Chairperson

Committee Co-Chairperson

University of California, Riverside

Acknowledgments

I would like to thank the graduate division and dance department of the University of California, Riverside for having supported this research with a Dean's Fellowship for Graduate Study, two Humanities Graduate Student Research Grants, a Dissertation Research Grant, and a Dance Faculty Research Grant. The graduate division is also to be thanked for providing conference travel grants. I am also grateful for permission from *Dance Chronicle* and Routledge to include published material.

Dance department administrators Cindy Roulette, Jamile Johnson, Mike Atienza, and Katrina Oskie have offered much support. A very special thanks is also due Janet Moores, Maria Davadaris, Esther Arroyo, and the staff of UC Riverside's interlibrary loans department for their friendliness, engagement, and speed.

I am deeply grateful for the support of my dissertation committee: Sally Ness, Lawrence Rosenblum, Anthea Kraut, and Neil Greenberg. Sally has been a true *Doktormutter*; I am so grateful for her open-mindedness and positive encouragement. Thanks also to Wendy Rogers and Fred Strickler for their assistance.

I would also like to acknowledge and thank early mentors at the University of California, Los Angeles: David Gere for theoretical dialogue, Charles Goodwin for enthusiasm and support in the early stages of my interdisciplinary engagement with dance and situated discourse, and John Hummel for his contagious excitement about cognitive science.

Special thanks to Judy Mitoma for having arranged the 2001 Forsythe Interdisciplinary Workshop and for early encouragement and kindness.

Additional thanks are due to Deidre Sklar, Nancy Lee Ruyter, Vladimir Konečni, and Rachel Fensham for their encouragement.

Fellow graduate students and friends have been an invaluable source of support and community. To Tom Jankowski and my anonymous global cohort at PhiniseD.org: thank you for being there. Many thanks also go to Annapoorna Ellerbe-Dück, Mpambo Wina, Patrick Alcedo, Isabel Valverde, Celia Weiss Bambara, Roxane Fenton, Ruth Barnes, Shaun Womack, Michael Steinbusch, and especially Jeff Friedman. This project was also frequently sustained by the memory of Ann Paeth's cheer, dedication, and wisdom.

Roslyn Sulcas, Gerald Siegmund, and Steven Spier have inspired, informed, and been generous with their support. Many thanks.

Deep gratitude, respect, and love goes to the dancers of the Ballett Frankfurt and The Forsythe Company for your rich knowledge, skill, daring, humor, and ability to communicate these in many ways. Special thanks to Thierry Guiderdoni, Stephen Galloway, Kate Strong, Michael Schumacher, Anthony Rizzi, Laura Graham, Thomas McManus, Prue Lang, Fabrice Mazliah, Jone San Martin, Amancio Gonzalez, Ander

Zabala, Dana Caspersen, David Kern, Esther Balfe, and the current roster of company members. It is wonderful to work with you.

To the ensembles' composers and sound designers Thom Willems, David Morrow, Dietrich Krüger, and Niels Lanz: thank you for your collegial assistance and for sharing your craft with me. Special thanks to Dietrich and to Nicholas Champion for assistance with video archives; without it, the scope of this project would not have been possible.

Added and grateful thanks to David Morrow, as well as to Dana Caspersen, David Kern, William Forsythe, and Steven Spier for their assistance with this study's appendix.

The administrative and technical staff of The Forsythe Company deserves recognition and gratitude: Paul Viebeg, Dorsey Bushnell, Dr. Vera Battis-Reese, Mechthild Rühl, Martina Zimmer, Max Schubert, Tanja Rühl, Ulf Naumann, and Julian Richter.

Bill, there is simply no way to thank you enough for your overwhelmingly generous support and encouragement, your laughter, your friendship, and for your work and vision.

Finally, so very many thanks to Hazel, for all the ways you support me.

O daß der Sinnen doch so viele sind!
Verwirrung bringen sie ins Glück herein.
Wenn ich dich sehe, wünsch ich taub zu sein,
Wenn ich dich höre, blind.

–Johann Wolfgang von Goethe, *West-östlicher Divan* (1819)

*Oh, that so many senses guide the mind!
They bring confusion to the ecstasy.
When I do see you, deaf I fain would be,
And when I hear you, blind.*

ABSTRACT OF THE DISSERTATION

Audio-Visual Stress: Cognitive Approaches to the Perceptual Performativity
of William Forsythe and Ensemble

by

Freya Vass-Rhee

Doctor of Philosophy, Graduate Program in Dance History and Theory
University of California, Riverside, December 2011

Dr. Sally Ness, Co-Chairperson
Dr. Anthea Kraut, Co-Chairperson

The dissertation investigates visuo-sonority in the works and choreographic practices of William Forsythe, focusing on specific categories of sound in Forsythe's soundscores and choreographic practices involving both sound and movement production by performers. The study advances a twofold argument for amplified attention to the role of sound in the performativity of dance and for an approach informed by cognitive studies, understood as a broad plurality of theoretical paradigms and research practices.

Specifically, the study explores works and improvisational methods across Forsythe's 35-year *oeuvre*, analyzing choreography, staging, and audience perception and reception of six recurrent sonic event types: sudden shifts of sound volume or *hush*, profound extended silences, overwhelming cacophony, lulling minimalist musical structures,

breath scores consisting of vocal and corporeally generated sounds, and *vocal choreography* in which the performers contrapuntally translate between vocalizations and dance movements.

Drawing from a variety of subdisciplines and theoretical paradigms within cognitive psychology as well as cognitive studies in several humanities disciplines, the dissertation aims to illuminate the sensory basis of performativity of dance in general and contemporary dance in particular. To this end, the study develops and applies the concept of *perceptual performativity* to capture ways in which staging and choreographic practices construct the subject as perceiver, tapping the limits and proclivities of perception in order to activate awareness of the performance of perception itself. The increased role of perception in contemporary dance renders this analytic approach particularly applicable to this genre. The multi- and intermodal approach taken specifically highlights dance as a visuo-sonic phenomenon and choreographic practice as engagement with the senses in concert.

The study offers findings on both Forsythe's work and the interdisciplinary methodology applied. Forsythe's works and choreographic practices are revealed as underpinned by a performativity that is perceptual in nature and which involves both visual and sonic compositional strategies. By bridging a range of disciplines including dance and performance studies, cognitive psychology, auditory culture studies, and gesture studies, the study demonstrates the productivity and dialogic, metacritical potentials of

investigating performativity through a cognitive and audio-visual approach. As such, the dissertation contributes a novel interdisciplinary paradigm to the study of dance.

Table of Contents

Chapter 1 Introduction

1.1 Orientation	1
1.2 Overview of the study	13

Chapter 2 Overview

18

2.1 William Forsythe and ensemble: an introduction	20
2.2 Characteristics of William Forsythe's works	25
2.3 Critical discussions of Forsythe's works and choreographic practices	34
2.3.1 Further observations on perception	48
2.3.2 Further observations on sound	53
2.4 Chapter summary	57

Chapter 3 Theoretical Foundations and Methodology.....

61

3.1 The cognitive turn	63
3.1.1 Overview and key characteristics	63
3.1.1.1 Naturalistic explanation	64
3.1.1.2 Reduced-scope inquiry	72
3.1.1.3 Diversity of theoretical paradigms	76
3.1.1.4 Diversity of research practice	80
3.1.2 Empirical cognitive dance research	81

3.1.3 Theoretical cognitive dance research	89
3.1.4 Summary of cognitive approaches	93
3.2 The audio-visual turn	95
3.2.1 Overview and key principles	95
3.2.2 Audio-visual dance studies	105
3.3 Chapter conclusion.	117
 Chapter 4 Perceptual Performativity	120
4.1 Performativity: from speech acts to performance studies	121
4.2 Perceptual performativity	129
4.3 Staging performativity	135
4.4 Choreographing perception: the senses in concert	148
4.5 Chapter summary	158
 Chapter 5 Sound the spectacle I: hush and silence	162
5.1 Introduction	162
5.2 Background	165
5.3 Hush and silence	172
5.3.1 Spectacular touch: punctuated hush and caesurae	172
5.3.2 Gripping silence	184
5.4 Chapter conclusion	195

Chapter 6 Sound the spectacle II: Overwhelm and Lull	198
6.1 Introduction	198
6.2 Background	200
6.3 Overwhelm and Lull	209
6.3.1 Overwhelm: stunning excess	209
6.3.2 Lull: unsettling minimalism	215
6.4 Chapter conclusion	230
 Chapter 7 Breath scores: synchrony, attention, and deception	 232
7.1 Introduction	232
7.2 Background	235
7.3 Breath scores	240
7.3.1 The development of the breath score: <i>Duo</i>	240
7.3.2 The breath score of <i>Three Atmospheric Studies</i> part 1	245
7.3.3 Attention and deception in <i>Three Atmospheric Studies</i> part 1	251
7.4 Chapter conclusion	255
 Chapter 8 Intermodal counterpoint: Forsythe's vocal choreography	 257
8.1 Introduction	257
8.2 Background	259
8.3 Vocal choreography	262

8.3.1 The development of vocal-kinetic translation: <i>Decreation</i> and <i>You made me a monster</i>	262
8.3.2 (E)merge: intermodal counterpoint	270
8.4 Chapter conclusion	284
Chapter 9 Conclusion	290
9.1 Summary of aims and motivations	291
9.2 Summary of findings	293
9.3 Implications of the study	297
9.4 Limitations of the study	303
9.5 Future research	304
Bibliography	307
Appendix: Chronological list of works with soundscore catalogue	357

List of Illustrations

Figure 2.1	Re-visioning ballet: Christine Bürkle, seen from above, improvises in Forsythe's <i>Die Befragung des Robert Scott</i> †.	27
Figure .1	Tapping limits of visual perception: The Paris Opera Ballet in the "chug" scene of <i>Giselle</i> , 2 nd act and the Royal Ballet of Flanders in "Bongo Bongo Nageela's" opening fugue	141
Figure 4.1	Problematizing vision: <i>Enemy in the Figure</i> , Bavarian State Ballet . . .	145
Figure 5.1	"Silent" spectacle: Elizabeth Waterhouse soars as Ander Zabala and Christopher Roman "squish" in <i>Yes We Can't</i> (2008)	177
Figure 5.2	Carrying her silence with her: The "Other Person" in <i>Artifact</i> . Emma Barrowman, Bavarian State Ballet	188
Figure 6.1	Enemies in the figure: Kate Strong (Person in Historical Costume) and Nicholas Champion (Person with Megaphone) argue their way through one of <i>Artifact</i> 's balletic canons. Bavarian State Ballet	223
Figure 6.2	Ludicrous dust: the final scene of <i>The Loss of Small Detail</i>	226
Figure 7.1	Attention and deception: The Forsythe Company in <i>Three Atmospheric Studies</i> part 1.	253
Figure 8.1	Singing the bones: David Kern, Roberta Mosca, and Christopher Roman in <i>You made me a monster</i>	266
Figure 8.2	<i>Heterotopia</i> 's front "orchestra" room, with David Kern, Francesca Caroti, and Ander Zabala in the foreground.	280

Chapter 1

Introduction

1.1 Orientation

Dance is fundamentally a multisensory art form and practice involving both vision and audition. The proclivity to coordinate movement to sound, as well as the experience of pleasure in doing so, is manifested in humans from the earliest months of life.¹ This instinctive and rewarding impulse to move in response to sound is reflected in past and present cultures around the world by dance being typically performed in relation to music or rhythmic accompaniment. Choreography, at its fundament, is thus the exploration of the visuo-sonic affordances of movement and its presentation in performance. However, this fact is poorly reflected in dance research, which focuses primarily on the visual manifestations of dance and typically relegates sound to a secondary status as “accompaniment.” One aim of this study is to explore this under-researched domain by analyzing dance from a visuo-sonic perspective.

The lack of consideration of the role of sound in dance making and dance reception is particularly lamentable given the diversity of sound and visuo-sonic performative strategies found in recent choreographic paradigms. Exploration in postmodern and contemporary dance of new coordinative models of dance and music and

¹ Marcel Zentner and Tuomas Eurola, “Rhythmic engagement with music in infancy,” *Proceedings of the National Academy of Sciences* 107, no. 3 (2010): 5768-73.

new forms of accompanying sound² is one facet of a broader critical investigation of the perceptual conventions and creative practices of what Hans-Thies Lehmann terms “postdramatic theatre.”³ In this genre, compositional strategies engender a specific form of performativity that prompts theatergoers to reflect on perception – which can be viewed as a sensory and cognitive performance – and on the perceptual norms of theatrical presentation. Further, this critical exploration has increasingly involved not only audience perception but also that of performers. This performativity situates contemporary dance as a privileged platform for visuo-sonic arts research, inviting consideration of perception as a key factor in both dance production and reception. To this end, this study will focus on staging practices and choreographic processes of contemporary choreographer William Forsythe and his ensemble of dancers, musicians, and sound designers.

The tendency in dance studies to favor purely visual analysis reflects an historic privileging of the sense of sight that informs not only the language of theatre (from the Greek *theatron*, or seeing place) – where “spectators” or “viewers” go to “see” performances which commonly include both visual and sonic elements – but which also

² Sally Banes traces a history of the sonic diversity of postmodern dance which moves from the “anything goes” practices of 1960’s, when choreographers and musicians began interrogating common modernist practices of combining dance and music, through an analytical period in which both silence and sound collages became more predominant forms of dance soundscape, and finally to renewed interest in musical collaboration which simultaneously blurred established lines between high-art and popular music and between Western and non-Western music. “Dancing [with/to/before/on/in/after/ against/away from/without] Music: Vicissitudes of Collaboration in American Postmodern Choreography,” in *Writing Dancing in the Age of Postmodernism* (Hannover and London: Wesleyan University Press, 1994), 321.

³ Lehmann, *Postdramatisches Theater* (Frankfurt am Main, Verlag der Autoren, 1999). English version: *Postdramatic Theatre*, transl. Karen-Jürs-Munby (New York & London: Routledge, 2006).

profoundly marks Western language and Cartesian philosophy in general.⁴ However, though sound may not be an accompanying, orienting presence in all dances, the production of form with the body taps perceptual processes in which visual and auditory percepts merge by virtue of their intrinsic commonalities: rhythm, dynamics, and perceived relations within and across sensory domains. In other words, the experience of dance both by its performers and its audience involves the visual and auditory perceptual systems functioning *in concert*, even when music or other sound is absent. Visuo-sonic experience thus lies at the heart of dance perception.

My selection of Forsythe's works and practices as a focus for this dissertation and my specific foregrounding of their aural aspects are motivated by several factors. One general motivation is that the performative effects engendered by choreographic engagement with audience perception, as well as the performative role of sensory perception in postmodern and contemporary choreographic processes in particular, have long interested me as a dancer, dance spectator, choreographer, teacher, and, most recently, as a dramaturg. In this dissertation, I investigate performativity from a perceptual perspective, examining how theatrical affect is fundamentally grounded in sensing and, as such, how theatre practice is in actuality a form of perceptual research.

⁴ The conceptual metaphors *understanding is seeing* and *knowing is seeing* are developed and their cultural influence explained in Lakoff and Johnson, *Metaphors we live by* (Chicago, University of Chicago Press, 1980), 48 and 103-4; and id., *Philosophy in the Flesh: the Embodied Mind and its Challenge to Western Thought* (New York, Basic Books, 1999), 391-414. Further key analyses include Marcel Danesi, "Thinking is seeing: Visual metaphors and the nature of abstract thought," *Semiotica* 80 (1990): 221-37; Alan Dundes, "Seeing Is Believing: A brief look at visual terms used in American speech illustrates just how much culture affects perception," *Natural History* 81, no. 5 (1972): 8-12 and 86-7; and Eve Sweetser, *From etymology to pragmatics. Metaphorical and cultural aspects of semantic structure* (Cambridge: Cambridge University Press, 1990).

My analysis reveals ways in which performative choreographic and staging practices activate awareness of the perceptual conventions of theatrical performance and spectatorship by confronting the limits and proclivities of sensory perception. Though performative visuo-sonic potentials can in fact also be discerned in prior Western dance genres as well as in non-Western forms, perceptual performativity is pervasive in Forsythe's work, extending to both the performers and their audiences and profoundly involving the senses of both vision and audition. As such, I view Forsythe's staging and choreographic processes as highly productive resources for examining ways in which perception is performatively deployed. My aims in advancing the concept of *perceptual performativity* are twofold: to derive explanations of the role of sensory perception in performative affect and dance making, and to provoke dialogue between this approach and other extant approaches to understanding dance.

My selection of visuo-sonority as a focus of this dissertation is motivated by two interrelated points. First, it is inspired by Forsythe's striking and diverse soundscores and the ways in which these contribute to the performativity of his works. Specifically, Forsythe's soundscores support and complement visual action in ways that both enhance and problematize the attentional dynamics of the performance event. As such, Forsythe's perceptual performativity, rather than primarily an engagement with performer or audience vision, is instead deeply reliant on the perceptual interfacing of vision and audition. Second, my visuo-sonic focus is also motivated by the complex, physically and cognitively challenging choreographic processes that underpin Forsythe's choreography

and the roles played in these processes by not only visual but also aural perception. The processes by which artists study perception bear striking resemblance to, but are differently constrained than, the methods employed by research scientists.

Finally, my analysis is also motivated by the ways in which contemporary dance performance in general, and Forsythe's work in particular, tends to be analyzed in critical discussions. While many studies enhance understanding of Forsythe's work by providing valuable insight into his works and working processes, certain key aspects tend to be underemphasized or are not considered in the literature. Of crucial significance among these underrepresented aspects are the means by which Forsythe taps the performative potentials of audience and performer perception. Limited attention has also been given to the structuring of Forsythe's improvisational modalities, which, as I demonstrate throughout this study, engender a perceptually performative experience for their performers that complements and enhances that of audiences. Finally, as is the case with dance studies in general, the role of sound in Forsythe's choreographic modalities and the reception of his works has been largely neglected. These are the key aspects that this analysis aims to emphasize in its exploration of visuo-sonority in Forsythe's works and choreographic practices.

The limitations cited above apply not only to dance studies but also to humanities studies in general. However, disciplinary foci regularly shift, broadening or diverging in phases that often come to be referred to as scholarly "turns." To achieve the objectives above, this study derives its underlying theoretical basis by combining two recent

developments in humanistic study: the *auditory turn* and the *cognitive turn*. The auditory turn stands in contrast to dominant models of cultural studies which focus on visual phenomena or which take vision as their central metaphoric paradigm, emphasizing the cultural relevance of sound and advancing the sense of audition as an equally valid theoretical ontology. However, while some research accomplishes this by turning away from visual artifacts to focus solely on sonorous ones, a growing number of studies highlight the multimodality of experience and the convergent nature of our auditory and visual engagement with the world. In reference to these projects, it is more appropriate to speak of an *audio-visual turn*. As spectatorial and performing experiences of dancing intrinsically involve both vision and audition, and as postmodern and contemporary dance makers have extensively explored the merging of visual and auditory perception as means of engendering choreographic structure and performativity, the audio-visual turn offers a highly effective analytic approach to the study of these forms. In turning *toward* the auditory in dance by focusing on dance as an audio-visual phenomenon and emphasizing the multimodal nature of perception and its role in dance making, dance spectatorship, and dance performance, I argue for a broader perspective – or perhaps an amplification – in humanistic questioning.

In contrast to the auditory/audio-visual turn, in which sonic phenomena garner increased attention, the cognitive turn involves engagement with scientifically grounded studies of cognitive processes, including attention, perception, and numerous other areas. Interdisciplinary cognitive studies, which have in recent years become increasingly

established in many arts and humanities disciplines, seek to explain the production and reception of cultural artefacts by bringing empirical research on cognitive processes to bear on humanistic phenomena. As I emphasize in Chapter 3, though cognitive studies at large are often conflated with specific subdisciplines of cognitive science, numerous cognitive theoretical paradigms and research methodologies have been applied or developed within humanistic programs of study. Given the diversity of cognitive psychology as a field, as well as the broad plurality of research practices within both empirical programs and cognitive studies in the humanities, the *cognitive approach* can thus be best described as an array of *approaches*.

In this study, rather than applying a single cognitive research perspective, I take an innovative and experimental cognitive approach by applying an eclectic range of cognitive research paradigms, cross-disciplinary contexts, and levels of analysis in order to delineate the centrality of perception in the performativity of Forsythe's works and choreographic practices. My investigation is informed by studies from several areas of focus in cognitive psychology, including attention, perception, language and gesture processing, cognitive development, and consciousness, as well as differing research methodologies including behavioral studies, neuroscientific studies, and theoretical analyses. I approach my analysis from a range of cognitive research paradigms, including computationalist, ecological, social, situated, and embodied perspectives. In addition, I reference cognitive studies from humanistic disciplines including linguistics, embodied

philosophy, musicology, art history, environmental psychology, comparative literature, film studies, and performance studies.

The cognitive approaches taken in this study illuminate the phenomenon of performativity by indicating perceptual mechanisms and tendencies underpinning Forsythe's staging practices and the structuring of his choreographic modalities. As such, this study joins a small but growing body of literature that aims to explain dance's affect in terms of perceptual experience. The goal of this broad approach is fourfold: firstly to ground the study of dance perception and performativity in cognitive research; secondly, to show the breadth of cognitive approaches available; thirdly, to demonstrate the productivity of a cognitive approach understood as a plurality of applications; and finally, to foster dialogue between the fields of cognitive psychology and dance studies. These points are explicated in detail in Chapter 3, where I review key cognitive and auditory studies in dance and related arts.

In advancing this linkage of cognitive and audio-visual approaches as an innovative paradigm of dance research, my study aims to achieve a number of purposes. First, it seeks to illuminate key facets of William Forsythe's work by examining how the performative potentials of auditory and visual perception and their in-concert functioning inform Forsythe's choreographic and staging practices. By stressing the audio-visual in Forsythe's works and choreographic methods, the study also seeks to draw attention to the need to recognize dance practice and performance in general, and contemporary dance in particular, as phenomena that implicate and choreograph *the performance of*

perception across differing but merged modalities. Additionally, the study aims to demonstrate the efficacy and value of a multisensory approach for the study of dance making and dance reception. Finally, this study aims to augment extant discourses in dance and performance theory. However, as I emphasize in Chapter 3, this project does not aim to establish the superiority of any one theoretical model over another but instead seeks to open a metacritical space for differing theoretical models to be assessed, compared, and refined.⁵ In combining the two “turns” described above, and in seeking to productively bridge cognitive and performance studies, this study constitutes a novel interdisciplinary approach within dance studies, as well as an extension of the burgeoning field of cognitive performance studies.

Thus, my research begins by asking two questions:

- (i) What underpins the performativity of Forsythe’s works and choreographic practices?
- (ii) From what theoretical perspective can this performativity best be theorized and studied?

The findings of this dissertation are:

- (i) Forsythe’s works and choreographic practices are underpinned by a performativity that is perceptual in nature and which jointly involves visual and sonic compositional strategies.

⁵ Greig Henderson and Christopher Brown define metacriticism as “A criticism of criticism, the goal of which is to scrutinize systematically the terminology, logic, and structure that undergird critical and theoretical discourse in general or any particular mode of such discourse.” “Glossary of Literary Theory,” University of Toronto, <http://www.library.utoronto.ca/utel/glossary/Metacriticism.html> (accessed September 24, 2011).

- (ii) This perceptual performativity can be productively analyzed through a cognitive and audio-visual approach.

These findings are of central importance because they illuminate and emphasize the fundamental role of sensory perception – understood as a merged phenomenon – in dance making and dance reception. They also provide an explanatory basis for exploring the latent or manifest performative affect of multimodal event constructs, of which dance is only one form, on the whole.

There are several factors that delimit the scope and emphasis of this study. First, not all of Forsythe's works will be examined. The examples selected for this research, which are sections or passages drawn from across Forsythe's 35-year *oeuvre* of stage works and performance installations, are intended to serve as representative instances for illuminating the specific modes of perceptual performativity explored in individual chapters. This sampling is in no way intended to stand as a full catalogue of Forsythe's visuo-sonic performative engagements.

As this study focuses primarily on Forsythe's improvisational modalities, limited consideration is also given to works and sections of works in which the order of steps and their relations to music are strictly established. As such, this study is not a choreomusical analysis of the type summarized in Chapter 3. Due to the span of Forsythe's *oeuvre*, consideration of all of Forsythe's works that contain improvisation-based works is also beyond the scope of this study. In addition, as the range of improvisational methods in Forsythe's choreographic processes is extremely broad, diverse, and fluid, with many

modalities specific to certain works, and as many modalities are explored either in specific versions of works or only during rehearsal processes, a comprehensive consideration of Forsythe's improvisational modalities is not feasible. Furthermore, as I discuss in the following chapter, any attempt to comprehensively catalogue or analyze Forsythe's improvisational modalities would be problematized by the blurring of boundaries between choreography and improvisation that results when improvisations are based on choreographic passages.

In this study, I also make no attempt to establish or expand a definition of *music*. As noted earlier in this chapter, though some of Forsythe's works are performed to classical, contemporary, or popular music compositions, many works involve densely layered sonic scores featuring music, sound samples, and ambient noise tracks, as well as text, other vocalizations, or sounds generated by performers. Other works, including those I discuss in Chapter 7 of this study, are accompanied solely by the performers' breath sounds, physically generated noises, and limited inclusions from musicians and/or sound designers. As the implications of the term *music* fail to reflect the broad palette of sound which can be found in Forsythe's works, I instead employ the term *soundscore*. Accordingly, the chronology of Forsythe's stage works and performance installations included as an appendix to this dissertation replaces the common category of *music* with a catalogue of *soundscore* element categories.

Finally, though I exemplify the dialogic, metacritical potential of this study's approach, disciplinary critique is not the primary focus of this dissertation. Instead, my

principal aim is to demonstrate the efficacy and productivity of the approach taken and to open avenues for future dialogue across different theoretical paradigms in both dance studies and cognitive studies.

As I indicate in Chapter 2, Forsythe overwhelmingly produces dance works in choreographic collaboration with company members. References in this study to *Forsythe and his ensemble* rather than to Forsythe alone serve to foreground the collaborative nature of Forsythe's working practices, which involve not only the choreographer and dancers but also composers, sound designers, and numerous others. Further, in view of the fact that Forsythe's choreographic research has taken place under the auspices of both the Ballett Frankfurt and The Forsythe Company, I make references in this study to Forsythe's *ensembles* in plural to imply the continuity of the choreographic research carried out under the auspices of these two companies. Where applicable, I have specified one ensemble or the other.

In addition, I have also chosen to use the terms *dancer* and *performer* interchangeably to reflect the eclectic nature of performance in Forsythe's works. Given that this study highlights dance performance as a visuo-sonic phenomenon and calls for increased attention to the sonic aspects of dance performance, it would also be a fitting critical gesture to employ the term *viewer-auditors* rather than *spectators*, *viewers*, *audience members*, or *audiences*. However, for the sake of ease of reading, I choose to instead use the latter terms interchangeably. Finally, as Forsythe's choreography is

inadequately captured by ballet, modern, or contemporary dance terminologies, my movement descriptions in this study largely refrain from using such vocabularies.

1.2 Overview of the study

There are nine chapters in this dissertation. To further clarify the motivations and objectives of this study, as well as its conceptual approach, Chapter 2 provides an overview of key characteristics of Forsythe's improvisational modalities and stagings with the Ballett Frankfurt and Forsythe Company, followed by a review of critical discussions of Forsythe's work in which I draw attention to aspects that tend not to be considered or are underemphasized. The aim of this overview is to justify the selection of Forsythe's works and working methods as the focus of the dissertation.

Chapter 3 relates the theoretical foundations of this study by detailing the two "turns" in the humanities upon which the current study is grounded. I first provide an overview of the *cognitive turn* by describing key characteristics of cognitive approaches in humanistic studies, summarizing cognitive studies in dance and other arts and humanities disciplines, and drawing a distinction between empirical studies and analytical approaches. This overview demonstrates the diversity of cognitive approaches available for the study of dance. Next, I discuss the *auditory turn*, noting that the term *audio-visual* turn is more applicable in many research instances. Following a summary of audio-visual studies in dance, I argue that the applicability of extant models to the study of contemporary dance is limited by reliance on the choreomusical paradigm of analysis

derived to analyze genres of dance in which music serves as accompaniment. Lastly, I discuss the linkage of these two scholarly turns, arguing that a combined cognitive and multimodal approach is well-suited to the address and analysis of contemporary dance's distinct, performative, and fluid visuo-sonority, while also affording the opportunity for critical discourse with extant paradigms of dance studies.

In Chapter 4, I advance a concept of *perceptual performativity* that focuses on sensory perception as a constitutive phenomenon. In my analysis, the spectator, normally constituted by theatrical events as an effortless, all-empowered perceiver, is confronted in postdramatic theatre with perceptual conditions which, by tapping the limits and proclivities of the perceptual systems in isolation or in concert, highlight the fallibilities that inhere in the performance of perception, providing opportunities for their apprehension, and thereby, for reflection on perceptual experience. As this dissertation reveals, perceptual performativity is a key factor in Forsythe's stagings and choreographic practices. After reviewing the cross-disciplinary transfer and translation of the concept of performativity and framing perceptual performativity as a distinct form, I demonstrate the model's applicability through a comparative analysis of scenes from the ballet *Giselle* and several Forsythe works, illustrating in the process that perceptual performativity is not solely manifested in Forsythe's work or the genres of postdramatic dance or theatre. I next offer a refinement of Lehmann's analysis of performativity in postdramatic dance by highlighting the crucial role of perception in Forsythe's improvisational modalities and linking this to audience experience. The primarily

visually focused analyses in this chapter foreshadow and contrast the audio-visual analyses carried out in the next four chapters.

Chapter 5 begins a critical exploration of the concept of spectacularity and takes up the first of the several sonic categories considered in this dissertation. In my review and critique of visually informed conceptions of spectacle, which is informed by the work of Michel Serres and others, I *re-cognize* spectacularity in aural terms as a *moving* experience grounded in the tactile viscosity of aural perception. A review of contrasting views on the effects of silence on dance perception is followed by analyses of the audio-visual structuring of scenes of *hush*, or periods of substantially reduced sound, and of profound and prolonged silence in several Forsythe works. These analyses support my argument that the heightened attention and anticipation engendered by these conditions and buttressed by distinct choreographic strategies constitutes a form of spectacular experience. The findings of this chapter frame my concluding call for cognitive analysis of silence as a category of aural experience.

Chapter 6 continues the exploration of spectacularity through application of research on non-ordinary states of consciousness (NOSCs) in a comparative analysis of two further categories of sound in Forsythe's works. As I show, though distinct sonic and movement dynamics are offered by scenes of "noisy" visuo-sonic overload and scenes involving lulling minimalistic musical structures undercut by interruptive elements, both of these strategies tap and performatively thwart spectatorial desire for spectacular experience through the generation of audio-visual stress. My analysis in this chapter

brings Jacques Attali's views on the ideological dichotomy of noise and music into dialogue with cognitive studies, exposing a lack of research on "milder" non-normative states of consciousness, including, as I argue, the experience of theatrical events.

The following two chapters focus specifically on Forsythe's recent explorations of what I term *visuo-sonic choreography*, dance performance that integrates and foregrounds sounds produced by its moving performers. As I note, while Forsythe's linkage of dance action and sound production subserves his key strategy of heightening and dividing attention, it also simultaneously highlights the multimodality of perception and the ways in which sensory information from different channels merges in perceptual experience. In Chapter 7, which is focused on Forsythe's "breath scores" of vocal gestures, footfall, and the sounds of physical contact, I show how the audio-visual simultaneity of the breath score provides means for performative engagement with the attention of both performers and audiences by enhancing anticipation and deceptively confounding expectations.

Chapter 8 continues the investigation of the performative affordances of intermodality by considering Forsythe's "vocal choreography," in which movement or visual information is reflected in vocal performance or vice versa. After detailing the history of the ensembles' development and deployment of this choreographic paradigm, I discuss its ramifications through an interrogation of Lehmann's views on simultaneity in postdramatic theatre. My subsequent discussion of intermodal counterpoint contributes a cognitive perspective to the debate on the existence of counterpoint in dance by noting

the differing processing capabilities of the visual and aural systems and the ways in which these are exploited to generate performative experience. In the chapter's conclusion, I argue that the intermodality of vocal choreography problematizes the predominant focus on the visual and the textual in dance research.

Chapter 9 presents a summary of the key findings of the study. The chapter also discusses the implications of the theory of perceptual performativity and of the approach taken in this dissertation for studies of Forsythe's works and working methods, cognitive studies, and dance studies in general. The chapter ends with discussions of the study's limitations and potential avenues for future research.

Chapter 2

Overview

This chapter offers an overview of Forsythe's works and choreographic methods as well as a review of key studies of Forsythe's work. After introducing the choreographer and his ensembles the Ballett Frankfurt (1984 – 2004) and The Forsythe Company (2004 – present) in Section 2.1, I describe key characteristics of Forsythe's choreographic and staging practices (Section 2.2). This is followed by a summary and discussion of key emphases in critical perspectives on Forsythe's work (Section 2.3), with separate exploration of studies referencing the roles of perception in general (2.3.1) and of sound in specific (2.3.2) in Forsythe's choreographic practice. The chapter's summary (Section 2.4) highlights aspects and perspectives that are critical for this study but which are underemphasized in the literature.

Overviews of Forsythe's aesthetic style, scenography, and choreographic practices have been produced by several authors. The writings of Roslyn Sulcas provide a lucid introduction to the Ballett Frankfurt period,¹ as does Gerald Siegmund's edited volume *William Forsythe: Denken in Bewegung* (Thinking in Motion). Siegmund's collection, which brings theoretical treatments from a variety of perspectives together with writings

¹ See Sulcas, "William Forsythe: The poetry of disappearance and the great tradition," *Dance Theatre Journal* 9, no.1 (Summer 1991): 4-7 & 32-33; Sulcas, "Kinetic Isometries" (interview with William Forsythe), *Dance International* (Summer 1995): 4-9; Sulcas, "Channels for the Desire to Dance," *Dance Magazine* (Sept 1995): 52-59; "Theorems and Counterpoints," *Dance Now* 5, no. 2 (1996): 9-14; and Sulcas, "Both a New World and the Old Made Explicit," booklet accompanying William Forsythe and ZKM, *Improvisation Technologies: A Tool for the Analytical Dance Eye* CD-ROM (Ostfildern: Hatje Cantz Verlag, 1999, reprinted 2011): 29-46.

from Ballett Frankfurt dancers Thomas McManus, Antony Rizzi, Dana Caspersen, Prue Lang, and Nik Haffner, offers particularly valuable insight into the work of this company.² Senta Driver's edited volume provides a similarly diverse range of writings covering the period up to the late 1990s.³ Other notable overviews are provided by a collection of essays published in Italian in 2005⁴ and Ann Nugent's analysis of Forsythe's "lost" ballets created in Stuttgart and elsewhere between 1976 and 1981.⁵ A chapter on Forsythe in a later volume by Siegmund, which I reference below in more detail, is also a highly informative resource on Forsythe's works during the Ballett Frankfurt period.⁶ Wibke Hartewig's published dissertation provides a comprehensive analysis based on the "movement inventory" (Inventarisierung von Bewegung) analytic paradigm developed by Claudia Jeschke.⁷ Biliana Vassileva Fouilhoux's dissertation, in turn, highlights key improvisational processes during the Ballett Frankfurt period, also covering prior works and those developed for the Paris Opera Ballet. Fouilhoux's work is particularly valuable for its inclusion of French-language resources and interviews with Forsythe and ensemble members.⁸ Finally, Steven Spier has recently produced an

² Siegmund, ed., *William Forsythe: Denken in Bewegung* (Berlin, Henschel Verlag, 2004). See in particular Siegmund's essay "Räume eröffnen, in denen das Denken sich ereignen kann" in this volume, 9-72.

³ Senta Driver, ed., *William Forsythe* (Choreography and Dance 5, no. 3) (Chur: Harwood Academic Publishers, 2000).

⁴ Marinella Guatterini, ed., *Forsythe: ieri, oggi, domani* (Reggio Emilia: Fondazione i Teatri di Reggio Emilia, 2005).

⁵ Nugent, "William Forsythe and the Lost Stuttgart Ballets," *Dance Chronicle* 29 (2006): 17-48. Nugent's usage of the term "lost" is intended to reflect the fact that these works are no longer performed. Forsythe's *Urlicht pas de deux* (1976) has however been recently performed by several companies.

⁶ Siegmund, *Abwesenheit: Eine performative Ästhetik des Tanzes. William Forsythe, Jérôme Bel, Xavier Le Roy, Meg Stuart* (Bielefeld: Transcript Verlag, 2006).

⁷ Hartewig, *Kinästhetische Konfrontationen: Lesearten der Bewegungstexte William Forsythes* (Munich: epodium Verlag, 2007).

⁸ Fouilhoux, *L'Improvisation chez William Forsythe: une approche Singulière* (PhD diss., Université Paris III - Sorbonne Nouvelle, 2007).

anthology covering both the Ballett Frankfurt period and the first five years of The Forsythe Company's existence.⁹ Forsythe himself has also given an extensive number of interviews for newspapers, magazines, and documentaries, and has also held numerous post-performance talks with audiences. With the exception of the post-performance talks, these have appeared in virtually all forms of media.

2.1 William Forsythe and ensemble: an introduction

Born in 1949 in Manhasset, Long Island, William Forsythe was an avid dancer of popular forms at an early age. During the period of his first formal dance training at Jacksonville University, where he studied humanities and theater, early teachers offered the influence of George Balanchine, indicated his potential as a choreographer, and encouraged him to experiment with movement material in ballet class.¹⁰ Returning to New York City, he trained at the Joffrey School and with numerous private instructors before joining the Joffrey Ballet in 1971. Three years later, he was invited by John Cranko to join the Stuttgart Ballet, where he made his first ballet, a pas de deux titled *Urlicht*, for a 1976 showcase of young choreographers. Immediately afterward, Marcia Haydee, who had assumed directorship of the company, appointed him *Hauschoreograph* (resident choreographer), a position he held until 1981 while also establishing himself as a freelance choreographer with major companies in Europe and the U.S. Among the works he created during the following three years as a freelance choreographer was

⁹ Spier, ed., *William Forsythe and the Practice of Choreography: It Starts From Any Point* (London and New York: Routledge, 2011).

¹⁰ William Forsythe, post-performance talk with the author, Dresden, July 1, 2009.

Gänge (Ein Stück über Ballett) for the ballet ensemble of Frankfurt am Main's municipal theater. Despite strongly divided responses to this work, Forsythe was offered the directorship of the company, which he renamed Ballett Frankfurt, in 1984. The company, with Forsythe serving as *Intendant* (General Director) from 1989 until 2004, quickly rose to world-class prominence, with Forsythe choreographing many works now considered classics of contemporary ballet. Despite Forsythe's iconic status and the company's success, however, a decision to dismantle the ensemble was handed down by the city of Frankfurt in 2002. Forsythe successfully negotiated the creation in 2005 of The Forsythe Company, a financially autonomous and smaller ensemble with two resident venues, the Bockenheimer Depot in Frankfurt and the Festspielhaus Hellerau in Dresden. The Forsythe Company continues to tour worldwide and to garner high praise for their continuing innovation.

Forsythe is recognized as having had a deep and far-reaching influence on both ballet and contemporary dance. His works, which exhibit a broad range of structure and style, are currently featured in the repertoires of virtually all major ballet and contemporary dance companies worldwide. In addition to an *oeuvre* comprising more than one hundred ballets to date, Forsythe has also produced several multimedia projects intended to educate performers and audiences about the nature of choreographic thinking and to promote choreographic innovation.¹¹ Since the early 1990's, Forsythe has also produced a steadily increasing number of installation works or "choreographic objects,"

¹¹ See William Forsythe, *Improvisation Technologies: A Tool for the Analytical Dance Eye*, CD-ROM produced in collaboration with ZKM Karlsruhe, Ostfildern, Hatje Cantz Verlag, 1999; *Synchronous Objects for One Flat Thing, reproduced*, interactive website produced in collaboration with The Ohio State University, <http://synchronousobjects.osu.edu/>; and the *Motion Bank* project, <<http://motionbank.org/>>.

some involving ensemble members and some that cast their audiences as performers, which are exhibited in museums, art venues, and public spaces worldwide.¹²

Forsythe's works apply improvisation as a generative and augmentative strategy, problematizing both ideas of *choreography* as pre-established sequences of steps and of *choreographer* as the individual who establishes these orders. Much of the dancing in Forsythe's works is *structured improvisation* in which the dancers work within established choreographic parameters or modalities but are not constrained by predetermined orders or spatial patterns of steps. When Forsythe does choreograph "set" orders of steps, an improvisational level of execution is also typically involved. During an interview for this study, veteran Ballett Frankfurt dancer Thomas McManus illustrated the difficulty of categorizing Forsythe's works as choreography or improvisation by demonstrating two versions of the solo he originated in *Enemy in the Figure* (1989): the "un-elaborated" version choreographed in rehearsal by Forsythe, and the performance version, which reflects "the interpretive possibilities within" the choreographed passage and which McManus and Forsythe further explored over the years. As McManus clarified, "The goal is to be as complicated as you can within the structure of this choreography, and to fill it out, to give it depth in your own reverberative possibilities, your own interpretation." This improvisational liberty also figures when dancers dance together. McManus further described a duet in this work in which "little moments of choreography within the improv structure" such as small pre-established lifts do not

¹² See William Forsythe, "Choreographic Objects," in Spier, *William Forsythe*, 90-92 (earlier version: Wexner Center for the Arts, <http://wexarts.org/ex/forsythe/> (accessed January 28, 2009)).

necessarily occur at the same point in each performance of the duet.¹³ Thus, Forsythe's choreographic passages contain an improvisational level that varies physical and temporal execution and that changes from performance to performance in response to the dynamics of the event as perceived by the performers.

Forsythe's employment of choreographic improvisation, along with his frequent use of soundscores that offer few easily parsable structural markers, have necessitated the development of innovative strategies for navigating time in performance. While the works Forsythe classifies as his "ballet ballets" involve the performance of primarily set choreography to structurally clear classical compositions or easily parsable newer scores, many earlier works relied on "clock time," the use of digital time displays as an aid to navigate musical scores without easily distinguishable structural features. In this system, dancers use the time displays to track upcoming soundscore shifts, initiate solos, or meet for "scheduled"¹⁴ events such as duets. In other works, the ensemble itself guides and maintains the temporal structure of the choreography through verbal cues, audible gestures such as slaps or stamps, or by listening to the sounds of other performers' footwork. I discuss a category of this type of soundscore that Forsythe refers to as the "breath score," in Chapter 7. In still other works, Forsythe verbally prompts some or all of the performers via small in-ear speakers or by speaking or whispering into a microphone whose sound is projected onstage.¹⁵ Forsythe has increasingly performed this

¹³ Filmed interview, August 24, 2006. See also McManus' detailed description of a section from *Enemy in the Figure* in Thomas McManus, "Enemy from Within," in Siegmund William Forsythe, 81-88.

¹⁴ Term used by former Ballett Frankfurt member Jodie Gates. Interview, March 12, 2007.

¹⁵ See Nik Haffner, "Der Tänzer als Medium," *ballet international/tanz aktuell* (August-September 1997): 11-12; Haffner, "Forsythe and the media," www.frankfurt-ballett.de/nikmedia-english.html (accessed May 31, 2003); also published as "Forsythe und die Medien," *tanzdrama* 511, no. 2 (2000): 30-35; Haffner,

“live direction”¹⁶ recently, cueing performer entrances, exits, and changes of improvisational modalities through a combination of radio communication to backstage, manually directed cues to musicians and sound technicians in the sound booth with him, and visual cues to the dancers onstage using a small hand-held light.

As noted in Chapter 1, Forsythe produces dance works primarily in choreographic collaboration with the ensemble members. Forsythe, who has compared his function to that of an editor rather than an author,¹⁷ often explicitly shares authorial credit with the dancers involved and currently credits choreography to “William Forsythe and The Forsythe Company.” Additionally, Forsythe reserves the right to permanently classify his ballets as “works in progress” and often alters or radically reconceives them in following seasons or even subsequent individual performances.¹⁸ As many works contain structured improvisation or real-time “prompting” of structure by the choreographer, Forsythe further maintains that the emergent nature of his choreographies makes notation using standard systems such as Labanotation impossible.¹⁹ Together, these aspects render

“Zeit erkennen,” in Siegmund, *William Forsythe*, 133-144; and Dana Caspersen, “Methodologies: Bill Forsythe and the Ballett Frankfurt,” Walker Art Center, <http://blogs.walkerart.org/performingarts/2007/03/09/methodologies-bill-forsythe-and-the-ballett-frankfurt-by-dana-caspersen/> (accessed May 13, 2008).

¹⁶ Forsythe’s term.

¹⁷ Paul Derksen, “Forsythe’s Image Breaking, p. 2/2” *Mediamatic* 9, no. 4, http://www.mediamatic.nl/magazine/9_4/derksen_forsythe/derksen_2gb.html (accessed April 8, 2001).

¹⁸ A number of Forsythe’s works, which Forsythe often calls his “ballet ballets,” are currently staged on companies other than Forsythe’s own. These works tend to no longer vary from season to season or performance to performance.

¹⁹ Steven Spier “Engendering and composing movement: William Forsythe and the Ballett Frankfurt,” *The Journal of Architecture*, 3, no. 2 (1998): 143-144. The Laban Centre, however, launched a project spearheaded by Valerie Preston-Dunlop in 2005 that sought to adequately notate Forsythe’s *The Loss of Small Detail* by developing what it termed a new “metachoreological perspective,” which would document in detail not only the performances rendered but also the ideas, procedures, dramaturgy, and collaborative work underlying them. <http://www.metachoreology.com/read/Index> (accessed November 6, 2005; no longer archived).

Forsythe's works uniquely resistant to attribution, description, documentation, and analysis.

2.2 Characteristics of William Forsythe's works

Researchers cite a number of general characteristics in relation to Forsythe's works. The aspect most frequently discussed is the way in which the distinctive visual style of Forsythe's choreography derives from his envisioning of balletic form as a mode of *geometric inscription*. In this view, the body's parts – hands, feet, joints, limbs, head – “draw” coordinated systems of lines, arcs, points, and forms in space as the dancer moves, leaving three-dimensional virtual traces. The moving body inscribes space simultaneously at more than one location in multiple ways. Extrapolating from dance theorist and pedagogue Rudolf Laban's (1879-1958) model of the kinesphere (a three-dimensional geometric form that surrounds the body and delineates its spatial range as it moves), Forsythe re-imagined the dancing body as a constellation of non-hierarchized centers rather than a single, all-encompassing kinesphere, with all points, axes, and dynamics given potentially equal importance. During the early 1990's, Forsythe and the Ballett Frankfurt dancers also developed close to 150 distinct movement operations known as the “alphabet” but also referred to as “algorithms,” or “modalities,” which they employed singly or in combination to translate movement in works from that period.²⁰

²⁰ Paul Kaiser, “Dance Geometry: William Forsythe in dialogue with Paul Kaiser,” *Performance Research* 4, no. 2 (1999): 67. Forsythe, who has used all three terms at various times in his career, has favored the latter term in recent years.

The inclusion of such operations further blurs the boundary between choreography and improvisation.

In what follows, I briefly detail key ramifications of Forsythe's *re-viewing* of Labanian principles in order to illustrate the radical progression and productivity of this conception of movement:

The points, arcs, and planes of the body, as well as the spaces between its parts, are conceived of as representing figures in abstracted space that leave virtual traces as the body moves. For example, the two arms held in the rounded *bras bas* (low 1st) position can be thought of as a series of points (at the fingertips, elbows, wrists, and shoulders), several planes (the bones or surfaces of the lower and upper arm, hands, or fingers), two arcs (the arms), a series of lines (between the same and opposite fingertips, elbows, and shoulders), and an oval of space delineated by the arms. Raising one of the arms from this position to the raised fifth position can be envisioned as producing two similar curved virtual lines in the space in front of the dancer, one associated with the hand and one with the elbow, as well as curved planar arcs produced by the forearms and upper arms. Each of these curves can also be conceived as demarcating a wedge of space or as extending beyond the space of the body. Additionally, as the arms move, the lines or planes between points and planes on opposite limbs can be imagined as lengthening and warping in space.

All of the figures above can be thought of as relative to any other part of the body or any other location in space. Any point, part, or area, including internal

body structures, can also potentially serve as a locus – or as one of multiple synchronous or “many-timed”²¹ loci – for inscriptive thinking.



Figure 1.1: Re-visioning ballet: Christine Bürkle, seen from above, improvises in Forsythe’s *Die Befragung des Robert Scott* †. Photo: Dominik Mentzos.

²¹ Forsythe in Kaiser, “Dance Geometry,” 66.

Relational inscriptive constructs can be extrapolated and used as structural prompts, for example extending an imagined triangle or arc form from the spleen through the fingertips in *bras bas* and down to the floor.

The coordinations of either codified steps or choreographic phrases can be reconfigured in innumerable ways. When this is done, fully new inscriptive and relational patterns result. In this manner of thinking, the balletic vocabulary of steps – or any other dance movement structure – gives way to an immense proliferation of combinatory possibilities.

Similarly, the postural, dynamic, or spatial constraints of dance forms can be selectively prioritized or eliminated entirely. For example, if the movement trajectory of a limb is continued past the “correct” point established by balletic convention and anatomical limitation, the body accommodates the task by relaxing constraints regarding the maintenance of verticality, “squared” placement, or codified coordinations. As a result, there emerges what Forsythe refers to as *residual movement*: motion that occurs spontaneously at other locations in the body when a specific movement task is prioritized.

In addition to the imagined inscriptions made by the body moving in space, an inexhaustible array of other real or imagined forms are available to serve as prompts for movement, including but not limited to any form of object, other bodies, letters, and sonic events.

Virtual inscription can be translated in a potentially unlimited number of ways. Movement can be altered in scale and orientation, fragmented and reconstituted in nonlinear sections, changed in terms of its “texture” (for example from a smooth line to a series of points), or can even be reproduced in a “negative” or opposed mode with regard to its qualities.²²

Authors have tended to focus on the Forsythe’s exploration of this reconception of movement during the first decade of the Ballett Frankfurt’s existence. However, Forsythe’s engagement with the generative and performative potentials is now in its third decade, with The Forsythe Company continuing to extend these choreographic principles.²³ Over the years, the trajectory of this investigation has effaced the connection to ballet’s visual aesthetics to the point of near indiscernibility. As Spier notes:

²² Many of the concepts that guide this perspective are explained by Forsythe on the CD-ROM *Improvisation Technologies*. Commercially released in 1999, *Improvisation Technologies* offers a subset of the modalities included in the prototype version, which was developed for use by the Ballett Frankfurt in 1995. A copy of the hard drive version of this prototype is housed at the Deutsches Tanzarchiv in Cologne.

²³ For the recent work *Theatrical Arsenal II* (2009), Forsythe returned to the idea of translation, generating raw movement phrases by asking the dancers to take set phrases from several previous choreographies, analyze them in terms of their movement qualities, and create new “opposite” phrases. The ensemble developed a non-exhaustive list of opposing terms, part of which is reproduced below, that serves as an aid both during the translation of the phrases and during performances, when an enlarged copy stands onstage in view of the audience and serves as a visual prompt:

Simultaneous	-----	Asynchronous
Facing	-----	Not facing
Forward	-----	Backward
Skilled	-----	Unskilled
Grasping-	-----	Back of hand/Flailing
Confident	-----	Insecure
Flow-	-----	Broken
Well-phrased-	-----	Not well-phrased
Simple	-----	Complex
Direct	-----	Indirect
Autonomous	-----	Dependent
Observant	-----	Ignoring/Oblivious
Cooperative	-----	Difficult/Obstinate

In earlier works...the tension between academic forms and those forms pushed to their extremes is explicit. In more recent pieces...the slippery, dislocated, densely coordinated movement style may initially appear to have little to do with ballet's formal positions and clear lines, but his dancers' classically trained bodies hold that clarity and articulation within the movement, keeping ballet as a shimmering, elusive physical presence reference point (sic) to which he constantly returns.²⁴

With reference to the 1993 work *Quintett*, Sulcas similarly observes that

[D]ancers move on unsteady, buckling limbs, their movements dissolving into and collapsing upon one another in a poignant series of encounters and solos...here, balletic form is visible but the steps themselves are not, as if their dynamics have been erased, leaving mere vestiges of their shapes.²⁵

Sulcas notes a further distancing from ballet aesthetics in the 2001 duo *Wolf Phrase*, quoting Forsythe as saying "There isn't a real ballet step...but it does require a ballet technique."²⁶ Forsythe's comment affirms the persistence of conceptual linkage to inhering ideas drawn from classical ballet, as described above, even as the ensemble continues to expand the array of new ways to formulate movement. Additionally, the company's movement style has over time become inflected by other contemporary forms such as release technique and contact improvisation. This has been catalyzed by the hiring of dancers with expertise in different dance practices.²⁷

Forsythe has thus continued to investigate ballet's inhering principles and derive new generative potentials. In addition, Forsythe has periodically returned to his earlier engagements with classical form, as evidenced by works like *Opus 31* (1998), *Pas./Parts* (1999, created for the Paris Opera Ballet), and, more recently, the solo *Two Part*

²⁴ Spier, *William Forsythe*, 5.

²⁵ Roslyn Sulcas, "Using Forms Ingrained in Ballet to Help the Body Move Beyond It," *The New York Times*, December 9, 2001.

²⁶ Ibid.

²⁷ See Antony Rizzi, "Die Bühne als der Ort, an dem ich mit mir im Reinen bin," in Siegmund, *William Forsythe*, 94.

Invention (2009, created for Noah Gelber) and the duet *Rearray* (2011, created for Sylvie Guillem and Nicolas Le Riche). The general shift in Forsythe's visual aesthetics over time is thus more appropriately viewed as a long-term accumulation of the translatory possibilities, rather than a rejection, of balletic form. As such, the importance of situating authors' observations historically is to be emphasized.

In tandem with this expansion of choreographic practice, the ensemble has also continuously extended their engagement-in-practice with sensory perception. Frequently, improvisational modalities are driven not only by formal possibilities of the generative modalities described above, but also, as indicated in the list above, by the movement-response potentials of visual forms, sounds, or other sensory stimuli. For example, in the work *ALIE/N A(C)TION* (1992), the dancers extract information from clips from the movies *Alien* (Ridley Scott, director) and *Aliens* (James Cameron), which are projected onto monitors onstage, while the 2006 work *Heterotopia* is highly reliant on principles of translating improvised verbal or ambient sound into movement or vice versa. Crucially for my analysis, modalities often involve simultaneous attention to multiple perceptual channels. In this study, I probe the interfaces of formal and perceptual task modalities, highlighting in particular the ways in which visual and aural perception and the combining of choreographic tasks figure in perceptually performative experience, both for audiences and performers.

Several authors discuss the dramaturgies of Forsythe's works as a factor of the choreographer's engagement with balletic principles, noting Forsythe works which overtly critique socio-cultural structures and citing their choreographic principles as a

parallel interrogation of pre-existing historical, theatrical, and corporeal paradigms.

Gänge (1982-83),²⁸ *France/Dance* (1983), *Artifact* (1984), and *Impressing the Czar* (1988) are four works that are frequently cited in this regard.²⁹ As I discuss in detail in the following section, Forsythe's physical and dramaturgical approach is considered by many to be a "deconstruction" of classical ballet. While some scholars, as well as many journalists, cast Forsythe as an iconoclast, a choreographer "railing against tradition,"³⁰ others take a more nuanced view:

What is remarkable is that [Forsythe's] "redefinition of the possible limits of ballet" in no way devalues the classical technique or reduces it to a physical illustration of a theoretical undertaking – the historical citation that ballet often becomes in contemporary dance works. On the contrary, the dance's self-conscious inquiry into its own workings produces an astonishing proliferation of movement – as if looking through a microscope at the composition revealed a hitherto unimagined beauty and complexity of structure (. . .) (W)hat it is "about" is itself and its own processes of transformation – which is to say, as difficult to define as is dance itself (. . .) Forsythe uses the traditional theatrical context of dance to endow it with new meanings, freeing ballet to be other than the sum of its past.³¹

Another frequently noted attribute of Forsythe's works is their distinctive stagings, particularly the ways that these problematize audience vision. In some earlier Ballett Frankfurt works, lighting generates deep and shifting shadows or pools of darkness onstage, while in others, vision is obstructed by walls, props, blinding light, or other devices. The Frankfurt opera house provided extremely wide and deep stages

²⁸ *Gänge*, subtitled *Ein Stück über Ballett* (a piece about ballet) began as a shorter work (*Gänge* part 1) choreographed for the Netherlands Dance Theater in 1982 and was subsequently expanded into a full-length work for the Frankfurt ensemble in 1983.

²⁹ See Siegmund, "Räume eröffnen," 13-33; Siegmund, *Abwesenheit*, 237-245; Sulcas, "Channels," 54; and Nugent, *The Architexts of Eidos: Telos: A critical study through intertextuality of the dance text conceived by William Forsythe*, PhD diss., University of Surrey, 2000, 62-68.

³⁰ Nugent, "William Forsythe and the Model Viewer."

³¹ Sulcas, "William Forsythe," 32-33.

whose space Forsythe often exploited to the maximum by eliminating wings, backdrops, or both.³² By extending the space of dancing beyond and behind the proscenium arch, the theater's own architecture was thus rendered an obstruction for portions of the audience. I discuss the performativity of these staging practices, along with others, in Chapter 3.

Though visual aspects of Forsythe's stagings are frequently discussed in overview literature, Forsythe's sound designs are rarely mentioned.³³ Forsythe's works have featured an extraordinarily wide range of soundscore components including classical and contemporary compositions, pop songs, onstage musicians, ambient noise tracks, or recorded sound samples. These elements are often fragmented, presented in multiple simultaneous layers, or altered through computer processing. Additionally, numerous Forsythe works, in particular earlier ones created for the Ballett Frankfurt, feature episodes of sound at either extremely low or high volume thresholds. Thom Willems, who has scored over 50 Forsythe works alone or in collaboration with others since 1983, has been Forsythe's most frequent musical collaborator. Many sound designers have also been involved in the production of soundscores.

In addition, Forsythe's works are also noted for their frequent use of dancers' voices. Writings on this aspect of Forsythe's soundscores tend to center on the generative linguistic tactics and textual content of early works such as *Artifact* (1984) and *Die*

³² The Oper Frankfurt features a 15-meter wide proscenium arch and a total stage area of 40 x 40 meters. The Schauspiel Frankfurt, where the company performed during the rebuilding of the Oper from 1988-1991, offers a maximum proscenium width of 24 meters and a 24 x 23-meter stage which can be expanded to a total depth and breadth of 40 x 60 meters. Forsythe remains highly selective regarding the choice of other venues for presentation of works created on these stages, insisting on adequate proscenium width and stage dimensions.

³³ Two exceptions are Anne Midgett, "Sound Ideas: The Music of Ballett Frankfurt," in Driver, *William Forsythe*, 79-85; and Marinella Guatterini, "Forsythe postmoderno, il rizoma coreografico," in Guatterini, *Forsythe*, 59-77.

Befragung von Robert Scott † (1986), citing these as a reflection of Forsythe's recognition of phrasal improvisation as a generative strategy.³⁴ However, as I emphasize in Chapters 7 and 8, in these works and numerous others, Forsythe engages the voice in terms of the qualities that it shares with music: rhythm, melody, pitch, and timbre. In tandem, Forsythe has explored the internal motions of vocalization as a logical extension and potential reflection of the external motions of dancing, bringing these into dialogue with each other in highly productive and performative ways.

As indicated, key characteristics of Forsythe's work cited by authors include the balletic basis of the choreographer's innovative approach to generating movement, the visual and textual dramaturgies of specific works, and the distinctive and performative visual aesthetics of this movement and of Forsythe's staging practice. In this body of literature, sound receives comparatively little attention, as does the role of visual and sonic perception in Forsythe's choreographic practices. In what follows, I survey selected critical analyses of his work, noting how these also fundamentally indicate a visually-based performativity but elide consideration of sound and other key concerns.

2.3 Critical discussions of Forsythe's works and choreographic practices

The broad emphasis underpinning most critical perspectives on Forsythe's works and choreographic methods is the concept of *deconstruction*. The literature exhibits a

³⁴ See for example Gaby von Rauner, ed., *William Forsythe - Tanz und Sprache* (Frankfurt am Main: Brandes und Apsel, 1993). It should be noted, however, that Forsythe and Martin Steinhoff, the Ballett Frankfurt's managing director, publically distanced themselves from this volume when it was published, citing content inaccuracies, unauthorized inclusion of private discussion material and images, and other factors. See "Das Subjekt will kein Objekt sein: Frankfurts Ballett distanziert sich von einem Buch über William Forsythe," *Frankfurter Rundschau*, Kultur, March 25, 1993; and Edith Boxberger, "Forsythe distanziert sich von Publikation," *Rhein-Main Zeitung*, Feuilleton, March 26, 1993.

spectrum of engagements that reflects the variety of senses in which the term *deconstruction* has been applied within critical theory. As initially derived by Jacques Derrida and theorists of the Yale School (Paul de Man, Geoffrey Hartman, J. Hillis Miller, and others), deconstruction denotes a strategy of close reading of texts – often with specific attention to non-principal structures such as footnotes and metaphors – which brings inhering presuppositions, ambiguities, and contradictions of the texts to light. This form of analysis underpins exploration of the structure of language itself and questioning of the assumed unity and coherence of texts. In Marxist, feminist, and postcolonial criticism, the strategy of deconstructive reading facilitates challenging of Western cultural ideologies and institutional structures. In architecture, the movement known as *deconstructivism*, which was motivated by specific aspects of Derrida’s reading strategies, opposes both the clear, simple ordering of space found in modernism and the embrace of eclecticism and separation of ornament and function that characterizes postmodern architecture. Deconstructivist architectures are spaces of contradiction and confrontation that expose spatial expectations through material and structural reference to other styles, fragmentation of geometric forms, and inclusion of void spaces.³⁵ These two differing but linked applications often inform individual studies of Forsythe’s work.

Authors who concentrate on viewing Forsythe’s choreographic re-visioning of ballet as a form of architectural intervention specifically evoke the deconstructivist paradigm. These authors view Laban’s kinespheric model not only as an architecture of space through which movement can be explored, codified, and documented, but also as a

³⁵ Compare Kate Mattingly, “Deconstructivists Frank Gehry and William Forsythe: De-Signs of the Times,” *Dance Research Journal* 31, no. 1 (1999): 20-28.

model on which alternative engagements can be grounded. Spier, for example, describes the period in 1989 when Forsythe noted an affinity between the choreographic processes that Forsythe had begun developing and the drawings and concepts of deconstructivist architect Daniel Libeskind.³⁶ As Spier explains, both Forsythe and Libeskind reject “an either/or approach of abandoning formal structures in order to retrieve an intuitive understanding” of geometric form.³⁷ Spier also cites the centrality of drawing in the processes of both Forsythe and Libeskind, noting the importance of the inscriptive mode of movement in Forsythe works from this period.³⁸

Like Spier, Valerie Briginshaw also draws parallels between Forsythe and Libeskind, explicitly comparing the void spaces in Libeskind’s Jewish Museum in Berlin to the fragmented spaces and voids created by Forsythe’s lighting and scenic elements in works like *Enemy in the Figure* (1989).³⁹ For Briginshaw, Forsythe deconstructs space and bodies through the creation of liminal spaces onstage and through the dancers’ enactment of failure to retain verticality. Referencing Susan Bordo, who links detached subjectivity to single-perspective vision or “geometrical seeing,” as well as critics of Lacanian psychoanalytic theories who emphasize the role of the visual in constructing the gendered subject (Kristeva and Irigaray), she argues that these strategies, like

³⁶ Spier, “Dancing and drawing, choreography and architecture,” *The Journal of Architecture* 10, no. 4 (2005): 352.

³⁷ Ibid., 355.

³⁸ Ibid., 359.

³⁹ Briginshaw, “Architectural spaces in the choreography of William Forsythe and De Keersmaeker’s *Rosas Danst Rosas*,” in *Dance, space and subjectivity* (Hampshire: Palgrave, 2001), 201-202.

architectures that blur the division of inside and outside space, trouble the dominance of the visual and, in doing so, also “challenge the notion of a separated self.”⁴⁰

Several writings that consider the influence of Labanian and architectural theories aid in refining the pervasive popular view that Forsythe’s extended and extensive critical engagement with the concepts, structures, and aesthetic of classical ballet constitute a deconstruction of the classical *métier* in the sense advanced within literary criticism.

Sulcas notes this tendency in 1991, commenting:

Forsythe's work can be seen as part of a current intellectual preoccupation with the hierarchies of categories of thought and value in western culture that has become generally known under the all too embracing label of deconstruction. Jacques Derrida, Michel Foucault, Jean Baudrillard, Jean-Francois Lyotard, Paul Virilio, the architect Daniel Libeskind - cited amongst others by Forsythe as major influences upon his work – are characterized by their commitment to a continual interrogation of the historical and philosophical parameters and stratagems of enquiry within their different disciplines, by their attempts to subject their own methodology to such questioning, and by the elaboration of the discourses that emerge from this process. Forsythe’s refusal of unified or transcendental meaning in his ballets, his sleight-of-hand ability to simultaneously expose and create theatrical illusion, and the way in which his choreography is built from the ordinarily obscured moments of movement, are the equivalents of these intellectual strategies within the domain of dance. As he puts it, “the theatre is used to describe the theatre,” in the context of an enterprise that looks for new questions rather than new answers.⁴¹

Steven Spier concurs, recommending a cautious application of the term *deconstruction* to Forsythe’s choreographic developments. Though Forsythe’s early productions manifest the choreographer’s interest in classical ballet’s relative conservatism and disengagement from cultural concerns, Spier argues that

⁴⁰ Ibid., 195-196.

⁴¹ Sulcas, “William Forsythe,” 32.

Forsythe's "deconstruction" of ballet can be overstated, especially in the theoretically heady days of the late 1980s and early 1990s. For the movement is not primarily about disequilibrium, violence versus beauty or discord over harmony. The most interesting thing is what holds the movement together, what happens between movements, and that is based in classical ballet.⁴²

Forsythe himself critiques the label *deconstruction* as applied to his exploration of balletic form, citing the usage as indicative of analytic "laziness."⁴³ In a 2003 interview, in which he notes that the term is typically used without reference to the variety of its applications, he further remarks that the usage often harbors a derogatory view of alternate presentations of balletic structure:

I think there is an error on the part of many people who use the word 'deconstruction'...they phonetically confuse it with 'destruction'. They hear the negative in it and...they use it that way, and I would rather they say something more direct about [how] they feel [about] what I'm doing with ballet. But I don't understand why people see themselves, who don't practice dance, as the guardians of a tradition. What tradition? Which part? There's many lines to this tradition, there's many ways of practicing it (. . .) I'm just one of many people practicing ballet, so I think to call it 'deconstruction' is a little bit cavalier (. . .) Ballet is a geometric, inscriptive art form. We're inscribing geometry. And let's just start there - it's a really basic approach to it, it's very simple, it's not overtly political but it does have philosophical backgrounds.⁴⁴

In essence, the "basic approach" to deconstruction indicated by Forsythe is the radically *re-visionary* power that the theoretical practice offers at its core – its ability to expose

⁴² Spier, "Dancing and drawing," 361.

⁴³ "Der Begriff 'Dekonstruktion' zeugt doch von Faulheit. Wir selber bemühen uns hingegen jeden Tag darum, eine Sprache zu entwickeln für das, was wir künstlerisch umsetzen. "Umschreiben" ist ein angemessener Begriff. Denn das Ballett ist für mich ein Schreiben - auf der Grundlage der Geometrie. Bedauerlicherweise bewegt sich unser Nachdenken über Ballett – also: finden wir Spiritualität in der Reduktion auf Geometrie? – noch immer in sehr alten Bahnen." Forsythe quoted in translation in "Der Tanzende Philosoph," interview with Sandra Luzina, *Tagesspiegel*, Oct. 27, 2000.

⁴⁴ Forsythe, interviewed by John Tusa, BBC, Radio 3, February 2, 2003, http://www.bbc.co.uk/radio3/johntusainterview/forsythe_transcript.shtml (accessed March 12, 2003). The interview text has been edited by the author.

lacunae of attention or of knowledge. As elaborated by Barbara Maria Stafford in an article which Forsythe included on the Ballett Frankfurt's website for several years,

[H]ow can the deconstructive impulse retain its critical energy in the face of its own success? What can a reader who has felt the surprise of intellectual discovery in a work by Jacques Derrida or Paul de Man do to remain in touch not so much with the content of the discovery but with the intellectual upheaval of the surprise? (. . .) If the deconstructive impulse is to retain its vital, subversive power, we must...become ignorant of it again and again. It is only by forgetting what we know how to do, by setting aside the thoughts that have most changed us, that those thoughts and that knowledge can go on making accessible to us the surprise of an otherness we can only encounter in the moment of suddenly discovering we are ignorant of it.⁴⁵

The views of Sulcas, Spier and Forsythe are reflected in the alternate terms employed by Heidi Gilpin and Gabriele Brandstetter. Gilpin, who collaborated with Forsythe as dramaturg during the period of his intense interest in architectural theories, notes Forsythe's commitment "to working within already existing paradigms of dance, even if he attempts to transgress, augment, and *explode* them in the process" [italics mine].⁴⁶ She cites Forsythe's engagement with Labanian theory as one in which he explodes or *dismantles* the kinespheric model, producing in the dancers a loss of equilibrium that, together with the resulting sense of vertigo, engenders a state of physical failure within which unpredictable movement necessarily occurs. The translational modalities described in the previous section serve to sustain this vertiginous

⁴⁵ Barbara Maria Stafford, "Nothing Fails Like Success," *Deconstructive Criticism: Directions (Society for Critical Exchange Reports #8)* (1980): 7, 15.

⁴⁶ Gilpin, *Failure, repetition, amputation, and disappearance: Issues of composition in contemporary European movement performance*, PhD diss., Harvard University, 1993, 167. See also Gilpin, "Aberrations of gravity" *ANY: Architecture New York* 5 (1994): 50-55 (reproduced in Spier, *William Forsythe*, 112-127).

state. As a result, “Failure and falling...are retrieved and valorized as intrinsically necessary and equally valid structural components of classical dance.”⁴⁷

With regard to Forsythe’s transformative re-vision of the classical ballet codex, Brandstetter invokes the ideas of *defiguration* – “the dissolution of figure” – and *refiguration* in Forsythe’s works.⁴⁸ “Figure” has two primary meanings in Brandstetter’s analysis: the physical form or outline of the dancer and the 17th and 18th-century term *figura*, or specified combinations of dance steps. As Brandstetter argues, Forsythe’s de- and re-figurative operations do not aim to break or destroy the code by which elements are composed into balletic figures of presumed unbroken and therefore “beautiful” lines. Instead, they “*direct our gaze* toward the basic disconnectedness, toward the gaps in the unity of the figure” [italics mine].⁴⁹ By defiguring movement to the point that it loses aesthetic identification with classical ballet, what Forsythe presents is thus the absence of the figure’s coherence. Drawing a comparison to “Transformers” toys, which change their form and function through the rearrangement of their parts, Brandstetter holds that “choreographer and dancer become transformers of open figures, transformers of themselves,”⁵⁰ reconstituting movement forms in a process that requires relinquishment of the concept of identity, which, as she points out, is linked to a representative semiotics in which balletic figures stand as recognizable signs within the classical codex. As a result, the off-balance, de-centered dancer of Forsythe’s works falls

⁴⁷ Gilpin, *Failure*, 188. See also Gilpin, “Aberrations,” 122, and Gilpin, “William Forsythe; Where Balance Is Lost and the Unfinished Begins,” *Parkett* 45 (1995), 10.

⁴⁸ Brandstetter, “Defigurative Choreography: From Marcel Duchamp to William Forsythe,” *The Drama Review* 42, no. 4 (Winter, 1998): 37-55.

⁴⁹ *Ibid.*, 45.

⁵⁰ *Ibid.*, 38.

“out of the discursive space”⁵¹ delineated by the hierarchized status of ballet and of the ballerina. The spectator, similarly de-centered by the denial of expected structures and privileged perspectives, experiences a further dissolution at the level of the full work. Through their performative demand, Forsythe’s choreographies thus render spectators themselves “figures in the choreographic text.”⁵²

Elsewhere, Brandstetter views audience perception of Forsythe’s obscured bodies as a *reconstructing*, in memory, of bodies that the darkness and shadows have fragmented and distorted. Discussing scenes of *Limb’s Theorem* (1990) in which dancers are barely perceptible to audiences as they move through darkened areas of the stage, she notes that

The human figure cannot be grasped as a whole. Instead, it constantly eludes its stable form – in movement and through movement. The body thus appears divided into parts, or dis-membered, to then become reassembled, or re-membered in the viewer’s reconstructive perception (. . .) What William Forsythe’s choreography takes up on and makes tangible in different forms and frameworks...are highly abstract questions concerning the space and time of movement and the never more than fragmentary traces which serve as its memory.⁵³

Gilpin, also discussing *Limb’s Theorem*, similarly notes how near-darkness, blinding brightness, or obstruction by scenery in Forsythe’s stagings render dancers difficult or impossible to see. In her analysis, this is linked to the dancers’ physical failure to retain balance: the problematizing of vision carries failure over to the audience.⁵⁴

The idea of an absence of holistic, visible form evoked by Brandstetter and Gilpin is also central to other critical analyses. Siegmund, who has written extensively on

⁵¹ Ibid.

⁵² Ibid., 52.

⁵³ Brandstetter, “Choreography As a Cenotaph: The Memory of Movement,” in Gabriele Brandstetter and Hortensia Volckers, eds., *ReMembering the Body* (Ostfildern: Cantz Verlag, 2000), 104, 106.

⁵⁴ Gilpin, *Failure*, 195-197.

Forsythe's works,⁵⁵ challenges notions of presence as an ontological tenet of dance by advancing absence as a "performative aesthetic" and recasting dance's visible manifestation as a death – a presence which disappears in the same instant as it appears.⁵⁶ In a chapter devoted to Forsythe's works, Siegmund provides a sensitive linkage between the choreographic exposure of ballet's normally invisible possibilities and the spectatorial experience engendered by Forsythe's stagings and dramaturgies. Describing a broad span of Forsythe's *oeuvre* in great detail and elaborating his analysis with reference to critical theories of Jacques Lacan, Slavoj Žižek, Judith Butler, and Jacques Derrida, Siegmund joins Brandstetter in recognizing absence as a performance that takes a variety of forms in Forsythe's work, ranging "through the absence of individual connective elements in the choreography of movement, to the performative memory of absent movements, and to dissolving of the classical ballet codex, which only appears as a negative horizon."⁵⁷

Peter Boenisch, by contrast, looks to Forsythe's working processes, finding that these evoke an absence that precedes and grounds choreographic presence.⁵⁸ His analysis follows that of André Lepecki, who holds that "Movement is both sign and symptom that all presence is haunted by disappearance and absence."⁵⁹ Highlighting Forsythe's

⁵⁵ See for example Siegmund, "Echos und Schatten: William Forsythes Ballette," *tanzdrama*, vol. 62, no. 1 (2002):13-17; id., "Gedächtnisraum: Die Ballette William Forsythes," in *Tanz Theorie Text*, Gabriele Klein and Christa Zipprich, eds., *Jahrbuch Tanzforschung* 12 (Hamburg, LIT Verlag, 2002), 397-411; id., "Der Forsythe-Komplex," *tanz.de. Zeitgenössischer Tanz in Deutschland – Strukturen im Wandel – Eine neue Wissenschaft*, Johannes Odenthal, ed. (Berlin, Verlag Theater der Zeit, 2005), 54-61; and id., "Recht als Dis-Tanz. Choreographie und Gesetz in William Forsythes 'Human Writes'," *Forum Modernes Theater*, vol. 22, no. 1 (Tübingen, Gunter Narr Verlag, 2007), 75-93.

⁵⁶ Siegmund, *Abwesenheit*, 233-316. Translations by the author.

⁵⁷ Ibid., 315.

⁵⁸ Lepecki, "Introduction," in *Of the Presence of the Body: Essays on Dance and Performance Theory*, André Lepecki, ed. (New York & London, Routledge, 2004), 3.

⁵⁹ Lepecki, "Inscribing Dance," *ibid.*, 128.

Decreation, which was created in 2003 but substantially revised in 2005, Boenisch argues that the absence of referential possibility – the inability to categorize, name, or fix meaning to Forsythe’s works – positions the moving body in the volatile space between presence and body, rendering the subject of the work the processes by which this occurs:

William Forsythe’s complex technical and dramaturgic propositions...put moving bodies right into that ‘open field of absence,’ into the unstable interval *between* body and presence, eventually cutting the connection between the body and the individual, and pointing to a third ground beyond objectification and subjectivity, and beyond presence and representation – a ground ‘before the name,’ as described by Alain Badiou: not *outside* of the processes and the logic of the name, but *in the very process itself*, presenting a moving existence which is neither absent nor yet inscribed by signs, texts, images, and names of the symbolic order of representation. Forsythe’s choreography is thus in a very literal sense...*about* these processes of presence-ing bodies.⁶⁰ [italics original]

As suggested by these and numerous other analyses,⁶¹ studies that examine Forsythe’s engagement with Labanian and architectural theories during the earlier Ballett Frankfurt period are underpinned by reference to key concepts associated with the term *deconstruction*. Among aspects indicated are the fragmentation of classical or geometric form, the problematization of boundaries between spaces and identities, the generation of failure of vision, and disequilibrium. These writings highlight how Forsythe’s works from this period harness the affordances of the balletic codex, theatrical space, and dance’s inhering ephemerality to produce an un-easy vision, engendering what Forsythe

⁶⁰ Peter Boenisch, “Decreation Inc.: William Forsythe’s equations of ‘bodies before the name’,” *Contemporary Theatre Review* 17, no. 2 (April 2007): 16.

⁶¹ Further references include Patricia Baudoin and Heidi Gilpin, “Proliferation and Perfect Disorder: William Forsythe and the Architecture of Disappearance,” *Il Disegno che Non Fa il Ritratto: Danza, Architettura, Notazioni*, vol. II, Marinella Guatterini, ed. (Reggio Emilia, Teatri di Reggio Emilia, 1989; also published in *Parallax* evening program, Ballett Frankfurt, 1989); Norbert Servos, “Laban meets ballet: Formprinzipien bei William Forsythe,” *tanzdrama* 40 (1998): 4-9; Spier, “Engendering,” 135-146; Sabine Huschka, “Der Tanz als Inschrift: Die Bewegungsästhetik von William Forsythe,” *tanzdrama* 61 (2001): 26-30; and Sabine Huschka, “Hinter den Spiegel sich wendend. Die vergängliche Ballettkunst von William Forsythe,” in *Diskurse des Theatralen (Theatralität*, vol. 7), Erika Fischer-Lichte, Matthias Warstat, and Christian Horn, eds. (Basel: Francke Verlag, 2005), 65-88.

has called “the poetry of disappearance.”⁶² Not only do the analyses cited above offer careful conceptualizations of the effects of these and similar works and choreographic processes, they also clearly indicate a performativity that is underpinned by the sensory limits and sensory-cognitive proclivities of the visual perceptual system. In both Gilpin’s and Brandstetter’s analyses, the thwarting of vision by Forsythe’s staging and choreographic practices opens a space in which a heightened perceptual engagement with the subject of vision is demanded. This perceptual performativity is at the heart of the current study. However, rather than focusing solely on the visual sense, I make an integrative turn *toward* the auditory in order to highlight the merged nature of perception and the ways in which not only vision but also audition figure in the production and reception of performative dance.

Though the critical literature cited above reveals a consistent underlying tendency to view Forsythe’s choreographic explorations as deconstructing classical ballet as a cultural ideology, the fundamental and continuing focus of Forsythe’s choreographic research has in fact been the investigation of *space* – how it is categorized, how it can be organized, and what possibilities for physical engagement it can potentially yield. Boenisch succinctly captures the ramifications of this research trajectory, which, as he points out, has led Forsythe across the inside-outside boundary of the body and into its musculo-sonorous interior:

Forsythe’s understanding of space is...no longer the original balletic space of Euclidean geometry and perspective painting. To him, it is an inclusive concept that even integrates the interior of bodies, breath, and most essentially proprioception; all of these factors become interfaces for artistic response and

⁶² Forsythe, quoted in Sulcas, *William Forsythe*, 32.

creation. Consequently, Forsythe has never been interested in ‘deconstructing’ ballet, but he has, much rather, thoroughly updated rewired, and redesigned the ballet code – into a dance form for the twenty-first century that eventually dissolves the traditional coupling of body and subjectivity. Within a dynamic web of phsyio-spatial energies, it makes no longer sense to think of the body as a discrete entity projected into that space, or as an expressive agent in front of a background of space. Rather, the body *is* space, and space is the inclusive body that is being choreographed.⁶³

Additional analytic perspectives on Forsythe’s work include writings that critique Forsythe’s deployments of new media technologies such as film, computer graphics, and computerized sound technologies. Kerstin Evert examines multimedia technologies in Forsythe’s works, casting Forsythe’s choreography as a “hypertext,”⁶⁴ while Sabine Huschka analyzes intermediality and “media-bodies” in several Forsythe works.⁶⁵ More recently, Chris Salter, who collaborated with Forsythe as a sound designer in the mid-1990s, has also written about the effects of mediatization on our perception of dancing bodies.⁶⁶ Other authors have approached to Forsythe’s works from the perspective of intertextuality, for example Jennifer Jackson’s examination of the movement vocabulary of Forsythe’s relatively academic work *Steptext* (1985)⁶⁷ and Ann Nugent’s conceptualization of Forsythe’s *Eidos: Telos* as a “Forsythescape” of intertextual

⁶³ Boenisch, “Dectreation,” 23.

⁶⁴ Evert, “Choreographie als Hypertext: William Forsythe,” in *DanceLab: Zeitgenössischer Tanz und Neue Technologien* (Würzburg: Königshausen & Neumann, 2003), 117-155; and Evert, “Filmschnitt und Hypertextur: Medientechnologische Analogien im choreografischen Prozess bei Merce Cunningham und William Forsythe,” in Siegmund, *William Forsythe*, 145-157.

⁶⁵ Huschka, “Media-bodies. Choreographierte Körper als Wissensmedium bei William Forsythe,” in *Theater und Medien / Theatre and the Media*, Henri Schoenmakers, Stefan Bläske, Kay Kirchmann, and Jens Ruchatz, eds. (Bielefeld: transcript Verlag, 2008), 309-318; Published in English as “Media-Bodies: Choreography as Intermedial Thinking Through in the Work of William Forsythe,” *Dance Research Journal*, 42, no. 1 (2010): 61-72.

⁶⁶ Salter, *Entangled: Technology and the Transformation of Performance* (Cambridge MA: MIT Press, 2010).

⁶⁷ Jackson, “Dancing Latin: William Forsythe’s Challenge to Balletic Text,” in *Dancing Text: Intertextuality and Interpretation*, Janet Adshead- Lansdale, ed. (London: Dance Books, 1999), 104-129.

networks.⁶⁸ Additionally, Wibke Hartewig offers individual and comparative analyses of “movement texts” of Forsythe works using Jeschke’s method of “movement inventory” (Inventarisierung von Bewegung).⁶⁹ Writings examining the construction of gender in Forsythe’s works and partnering strategies include Janine Schulze’s analysis of gender-specific body images in Forsythe’s 1995 duet *Of Any If And*,⁷⁰ Bettina von Jagow’s comparison of gender roles in works from Forsythe and Han van Manen,⁷¹ and Ryan Platt’s views on sexual allusion in the 2008 version of *Yes we can’t*.⁷² Finally, Ariel Osterweis Scott discusses racial as well as sexual implications of Forsythe’s engagements with ballet and improvisation in her dissertation on African-American dancer and former Ballett Frankfurt member Desmond Richardson.⁷³ Several additional authors who focus on the role of perception in Forsythe’s works are discussed below in section 2.3.2.

As can be seen from the literature summarized in this section, Forsythe’s choreographic engagement with the inhering structures of classical ballet, together with his envisioning of movement as spatially inscriptive and inherently polycentric, has fueled a broad span of intellectual scrutiny of the limits of thought about dance, dance

⁶⁸ Nugent, *Architexts*, and Nugent, “William Forsythe, *Eidos:Telos*, and Intertextual Criticism,” *Dance Research Journal* 39, no. 1 (2007): 25-48.

⁶⁹ Hartewig, *Kinästhetische Konfrontationen: Lesearten der Bewegungstexte William Forsythes* (Munich: epodium Verlag, 2007).

⁷⁰ Schulze, *Dancing Bodies Dancing Gender: Tanz im 20. Jahrhundert aus der Perspektive der Gender-Theorie* (Berlin: Edition Ebersbach, 1999).

⁷¹ von Jagow, “Ironische Dekomposition und dekonstruktive Defiguration der Geschlechterrollen im klassischen Tanz - Hans van Manen und William Forsythe,” in *Körperproduktionen. Zur Artifizialität der Geschlechter*, Alexandra Karentzos, Birgit Käufer, and Katharina Sykora, eds. (Marburg: Jonas Verlag, 2002), 68-78.

⁷² Platt, “Forsythe’s Box: On the Afterlife of Choreography,” *PAJ Performing Arts Journal* 31, no. 1 (2009): 1-15. A full new version of *Yes we can’t* referred to as the “Barcelona” version was produced in 2010.

⁷³ Scott, *Body Impossible: Dynamics of Race, Sexuality, and Virtuosity in the Dance of Desmond Richardson*, PhD diss., University of California, Berkeley, forthcoming.

genres, and the parameters of performance. All of these approaches clearly enrich understanding of Forsythe's work. Nevertheless, there are some aspects that have received relatively little consideration. First among these is Forsythe's more recent body of work. As can be seen above, most critical discussions center on choreographic concepts that were explored intensively by the ensemble during the first ten years of the Ballett Frankfurt's existence (1984-1994). The mid-1990s, however, saw a critical period of shift in Forsythe's choreographic practices, and by extension, the aesthetics of his works. In addition, Forsythe's staging practices have changed considerably since 1999, when the company began performing at the Bockenheimer Depot, a converted tram depot that provides a large and versatile performance space and which, since 2005, has been The Forsythe Company's sole venue in Frankfurt. New works after 2004, which have been conceived for this and similar venues rather than for proscenium stages, reflect a different and diverse range of visual and sonic aesthetics than those produced for the large stages of the Städtische Bühne. It is thus critically important to situate the relative strength and applicability of literature written with reference to earlier works within the now 35-year history of Forsythe's work as a choreographer.

More crucially, as my study and additional literature which follows illustrate, as Forsythe and the dancers of the Ballett Frankfurt and Forsythe Company have moved beyond their earlier, more explicit engagements with classical ballet form, two areas of focus have gained increasing attention. Firstly, the choreographic affordances of sensory perception, which have profoundly influenced Forsythe's stagings since early in his choreographic career, have become a key factor of Forsythe's structuring of

improvisational modalities and the aesthetics of the ensemble's dancing. Secondly, Forsythe's exploration of the performative and choreographic affordances of sound has continued to expand and diversify. I discuss these aspects in turn in the following two sections.

2.3.1 *Further observations on perception*

As Eugenia Ropa notes, Forsythe's earlier "extroversive" explorations of configural possibilities increasingly shifted toward "internal movement-generative processes, to the overall cognitive experience which yields the thinking body...which directly translate the synesthetic experience into a kinesthetic mode..."⁷⁴ Rather than a turn away from ballet, however, this shift is instead a continued mining of the conceptual potentials that inhere in classical ballet as a system of aesthetics and structured movement. As I discuss in Chapter 4, the fundamental balletic principles with which the ensemble has engaged facilitate exploration of the perceptual proclivities and limits of the dancing body-mind –in short, for investigation of the choreographic potentials of the *performance of perception* itself.

My advancement of the concept of perceptual performativity is specifically corroborated by Sabine Huschka's delineation of Forsythe's choreographic processes as "perceptual technologies." Recognizing the role of perception in Forsythe's choreographic practice, she comments,

⁷⁴ Ropa, "Di Laban oggi. Riflessioni sulle teorie labaniane in Forsythe," in Guatterini, *Forsythe*, 114-5. As noted in Chapter 1, Forsythe has, however, continued to make works that fall in line with the earlier "classical" works he sometimes refers to as his "ballet ballets." Discussion with Forsythe, 20 March 2003, Städtische Bühne, Frankfurt am Main; see also Nugent, *Architexts*, 63.

Traditionally hierarchized and formulated down to the smallest detail, ballet operates with a technical-geometric movement corpus which not only medially effaces all irregularities and inconsistencies of its execution but also hypothetically establishes and presupposes the perfect embodiment of its ideal figures. Forsythe subverts this aesthetic idealism with a perceptual aesthetic of physical performativity and shifts ballet's premise – the correct execution of figures – into the unpredictable territory of corporeal perceptual processes.⁷⁵

Huschka emphasizes the role of kinesthetic recall (often referred to as “muscle memory”) and attention in Forsythe's combining of balletic form and improvisational modalities, noting that subjection of the dancers' ingrained physical knowledge to transformative modalities evokes the inhering “impurity” hidden by ballet's fiction of perfect execution.⁷⁶

A performativity based in perception is also indicated in an article by Kirsten Marr that focuses on the conception of real and virtual spaces in Forsythe's choreography. Reflecting on the performer-audience relationship, she indicates the role played in spectatorial experience by Forsythe's combining of the balletic rule system with improvisational modalities as

a matter of the exploration, the sounding of...marginal zones, e.g. of the kinesthetic sense up to the boundary of vertigo, of disequilibrium, the destabilization of balance...Of habitual relations becoming insecure, of situations of delirium in which for a short time no quality of difference, no discretion functions, but instead overload in which there are no pauses or separations, and of the loss of positionality (. . .) Only through this sounding of marginal zones is it possible to maneuver the spectator also into a similar condition of insecurity, of not knowing, in which accustomed patterns of judgment can no longer be implemented and others must be developed.⁷⁷

⁷⁵ Huschka, “Verlöschen als ästhetischer Fluchtpunkt oder ‘Du musst dich selbst wahrnehmend machen,’” in Siegmund, *William Forsythe*, 96. Translation by the author.

⁷⁶ Ibid., 100, 106.

⁷⁷ Marr, “Forsythes Konzepte des imaginären Raums,” in *Tanz im Kopf: Dance and cognition*, Johannes Birringer and Josephine Fenger, eds. (Münster, LIT Verlag, 2005), 109. Translation by the author.

Lastly, in Christiane Berger's comparative examination of Forsythe's and Saburo Teshigawara's choreographic practices, the author similarly cites the performative effect of Forsythe's choreography as an "irritation of expectancy and habit."⁷⁸ For Berger, the experience of choreography is intrinsically bound to and defined by the individual embodied knowledge of the viewer. In Forsythe's choreographic practice, the emergent nature of improvisational movement, the de-hierarchization of choreographic structure, together with extreme contrasts of speed, problematize audience recognition of everyday movement elements or those with codified meanings.

As can be seen, the analyses of Huschka, Marr, and Berger describe Forsythe's performativity as a function of various cognitive mechanisms, including kinesthetic recall, attention, expectation, and embodied experience. These cognitive processes, along with many others that are regularly invoked in analytic dance studies, are subjects of programs of empirical research within the broad field of cognitive psychology, which in recent years has been augmented by applications in several disciplines within the arts and humanities. As I elaborate in Chapter 3, my project in this dissertation is to ground such observations, along with those I develop in this study, in this extended body of cognitive studies, adding a "naturalized" perspective to the discourse on perception in dance reception and dance-making processes.

Like the observations of the authors above, the writings of dancers from the Ballett Frankfurt and Forsythe Company provide opportunities for cognitive approaches to the company's perceptual research. Dana Caspersen offers insight into the ensemble's

⁷⁸ Berger, *Körper denken in Bewegung: Zur Wahrnehmung tänzerischen Sinns bei William Forsythe und Saburo Teshigawara* (Bielefeld, transcript Verlag, 2006), 49.

visuo-proprioceptive extension of the balletic concept of *épaulement*, a coordinated series of counter-rotations of the head, shoulders, and limbs which gives ballet poses their distinctive curvilinearity and visual harmony.⁷⁹ Elizabeth Waterhouse reflects on her experiences as a Forsythe Company member in an essay that interfaces with the embodied philosophies of Merleau-Ponty and Alva Noë (who, since 2009, has frequently attended Forsythe Company rehearsals and performances and is the company's current "philosopher in residence"), as well as Gibson's ecological theories on perception.⁸⁰ Thomas McManus' detailed description of a short passage from *Enemy in the Figure* reflects the sensory complexity and physical thinking of Forsythe's choreographies,⁸¹ while Prue Lang provides a vivid description of the textual-driven modalities which structure the work *WoOLF Phrase* (2001) and the transcendent effect of the physical and cognitive demands of works like *Self Meant to Govern* (1994) and *The Loss of Small Detail* (1991). As she remarks:

The tension between restriction and freedom often creates a power struggle in Bill's work. Many of his pieces demand what for me is an extreme physicality, a sharp creativity or a variety emotional states [sic] and I find myself equally exhausted mentally as physically in the effort to find ways to take myself through the performance. This tension, between the body and the mind brings something powerful to Bill's work. *Self meant to govern* is an example of such a piece where I found the constant switching from a formalised ballet language to the alphabet

⁷⁹ Caspersen, "The Body is Thinking," Walker Art Center, <http://blogs.walkerart.org/performingarts/2007/03/09/the-body-is-thinking-the-body-is-thinking-by-dana-caspersen/>, accessed May 13, 2008, (earlier version: "Der Körper denkt: Form, Sehen, Disziplin und Tanzen," in Siegmund, *William Forsythe*, 107-116; and id., "Decreation: Fragmentation and continuity," in Spier, *William Forsythe*, 93-100. See also id., "It Starts From Any Point: Bill and the Frankfurt Ballet," in Driver, *William Forsythe*, 25-39; and id. (err.), "L'inverse du mouvement," in Patrick Bossatti, *Interprètes, inventeurs, Cahiers du renard*, vol. 11/12 (1992): 73-75.

⁸⁰ Waterhouse, "Dancing Amidst The Forsythe Company. Space, Enactment, and Living Repertory," in *Theater ohne Fluchtpunkt. Das Erbe Appias: Szenographie und Choreographie im zeitgenössischen Theater*, Gabriele Brandstetter and Birgit Wiens, eds. (Berlin: Alexander Verlag, 2010), 153-181.

⁸¹ McManus, "Enemy," in Siegmund, *William Forsythe*, 81-88.

based improvisation, demanded an intense physical and mental concentration. In many respects I think this piece contains the essence of Bill's work as it is articulated through states of thinking, musicality, sensitivity, strict ballet vocabulary and absolute creative thinking (. . .) For my performance to 'work' I must be in *a state of heightened perception* of what I am doing, what I just did, and what I am about to do...[I]t is perpetuated by a state of *thinking outside of the body's usual parameters*.⁸² [italics mine]

Throughout this study, I highlight the role played by performative visuo-sonic strategies in Forsythe's choreographic practices and stagings. As I show, the manifold perceptual demands of these tasks, in tandem with the demands of structured improvisational movement, heighten dancer attention while dividing it across differing sensory channels and requiring counterpointed response to unpredictable patternings of information. I further detail this intensified *performance of perception* in Chapter 4.

Perhaps the most obvious limitation of the extant literature on Forsythe's works and choreographic practices, however, is its neglect of sonic aspects. Visual factors of Forsythe's choreography and scenography are overwhelmingly isolated as the focus of research, with sound being given occasional brief mention to corroborate analysis of visual factors. In addition, the role of sound in Forsythe's choreographic practices has been entirely neglected, due at least in part to the limited attention that choreographic practices have received. As a result of this gap, the interaction of visual and aural elements in Forsythe's works, which, as I discuss below, has become a defining aspect of postdramatic theatre practice, also remains unconsidered.

The limitations I have described motivate my extension and development of observations cited in the above studies of Forsythe's work. A further objective of this

⁸² Lang, "Denken, Bewegung, und Sprache," in Spier, *William Forsythe*, 130-131. Translation is Lang's original English version.

study is to demonstrate the analytic efficacy of approaching Forsythe's works and choreographic practices from an audio-visual perspective informed by cognitive research. To further explain the impetus of my research, I present a review of how sound is considered in discussions of Forsythe's work.

2.3.2 *Further observations on sound*

As can be taken from the previous sections, the primary focus of critical analyses of Forsythe's performances and choreographic methods is on the performativity of specific visual aspects. As noted, very few studies discuss the role of sound in Forsythe's work. Among these, Chris Salter's dissertation stands out due to the author's vivid descriptions of his experiences of the 1993 work *As a Garden in this Setting*, along with his participation as a collaborating member of the sound team for *Eidos: Telos* (1995)⁸³ and *Sleepers Guts* (1996). Salter's "manifesto and casebook" of his experiences captures the complexity and density of information flow in the processes of making and performing Forsythe's works, as well as his dramaturgical engagement and the involvement of dance ensemble members in the production of the soundscape. Additionally, Salter's stream-of-thought style of writing in his *Eidos: Telos* "casebook" sections vividly captures the dynamics of devising, the visuo-sonoric interweave, and the performative experience that plays out in Forsythe's staging processes:

...Bill talks quickly about building a complex acoustic scenery to match the abrupt shifts of "light and darkness," in the mood as well as visually. From this moment on, all chaos breaks loose. In real time, we literally start composing with a combination of samples, CD's Maxim [Franke]'s violin playing and Dana

⁸³ *Eidos: Telos*, an evening-length work, includes the 1994 work *Self Meant to Govern* as an opening piece.

[Caspersen]'s body microphone. A mistakenly played heart beat suddenly becomes integrated into the scene's aural topography, along with streams of animal noises, crashes, fragments of text from Goddard's *Alphaville*, pygmy sounds, a Chinese violin player. At one point, we actually sample the sound of the HMI [light] turning on, a horrible static buzz that lasts the length of an instant but is so distinctive that it sounds like the earth itself opening up (. . .) The hours we spend building this world seem completely out of control. There is so much happening on stage between Dana, Bill, the lights, Maxim and the music, that we are all dumfounded even as we are caught in the flow. I am running back and forth between the orchestra pit, Bill and Dana, listening to things and trying to keep track of the event flow in order that we might have some way to notate and perhaps, reproduce the chaos. The environment that we are creating is in itself the event. It is a fluid, dynamic architecture of the rawest of emotions and states; a breathing body and universe where the only law is possession, madness, intoxication.⁸⁴

In a later essay, Salter discusses the collaboration on *Eidos: Telos* between Thom Willems and Joel Ryan, who composes and designs computer-based instruments, highlighting the way that the musical technologies developed for this work figure into a dramaturgy in which the dancing body is depicted as “a beautiful technology – one capable of mechanically perfected precision and simultaneously, an atavistic flux of energies.”⁸⁵ The Willems-Ryan collaboration is also the subject of an essay produced in 2000 by Anne Midgette that highlights counterpoint – which I analyze from an intermodal perspective in Chapter 7 – as an emergent factor in the equation of improvising musicians and dancers.⁸⁶

Describing the collaboration between Forsythe, Willems, and Ryan, Salter highlights “the embodied interaction, or co-production taking place among the human players, acoustic instruments and computational systems” and the way in which in works

⁸⁴ Salter, *Unstable Events: Theater at the Verge of Complexity*, PhD diss., Stanford University, 1997, 148.

⁸⁵ Salter, “Timbral architectures, aurality's force: sound and music,” in Spier, *William Forsythe*, 54-72.

⁸⁶ Midgette, “Sound ideas,” 84-85.

such as *Eidos:Telos* and *The Loss of Small Detail* (1991),⁸⁷ sound transcends the representational domain by being translated into “intensities and forces.” Here, Salter indicates a perceptual performativity that is based on the sensing of time – a domain, it is worth noting, that was first studied within psychology in the mid-19th century⁸⁸ – indicating that the collaborative work between Forsythe and Willems reveals the cross-influence of temporal and spatial perception.⁸⁹

In addition to Forsythe’s music and computer-aided soundscores, some authors have focused on Forsythe’s use of text spoken by the dancers. However, though Forsythe has included speech as well as a wide variety of other vocal sounds in many of his works, discussions of Forsythe’s use of his performers’ voices have focused primarily on the 1984 work *Artifact* and the generative-linguistic parameter on which the work’s language structures rely. Von Rauner’s volume contains several studies which analyze text structures in Forsythe’s earliest works for the Ballett Frankfurt, including *Artifact* (1984) the musical *Isabelle’s Dance* (1986), and other works produced around this time,⁹⁰ while Maaike Bleeker assesses *Artifact*’s generative language structures as a critical comment on theories of linguistic arbitrariness and deixis, specifically the discourses of de

⁸⁷ Forsythe created two distinct versions of *The Loss of Small Detail*, the first in 1987 and the second in 1991. The latter version remained in the Ballett Frankfurt repertory until 2004.

⁸⁸ See for example Karl Ernst von Baer, “Welche Auffassung der lebenden Natur ist die richtige?,” in *Reden in St. Petersburg*, H. Schmitzdor, ed. (St. Petersburg: Verlag der kaiserlichen Hofbuchhandlung, 1864), 237-284; Ernst Mach, “Untersuchungen über den Zeitsinn des Ohres,” *Sitzungsberichte der mathematisch-naturwissenschaftlichen Classe der Kaiserlichen Akademie der Wissenschaften* 51 (1865): 133-155; and Karl Donders, “On the speed of mental processes” (1869), *Acta Psychologica* 30 (1969): 412-431.

⁸⁹ Salter, “Timbral architectures, aurality’s force: Sound and music,” in Spier, *William Forsythe*, 54-72.

⁹⁰ von Rauner, *William Forsythe*.

Saussure and Benveniste.⁹¹ Siegmund also discusses Forsythe's use of text in *Artifact*, instead highlighting how the voices of the two speaking performers, one of which is altered and distanced through the use of a "megaphone" (actually a portable microphone), reflect aspects of the work's staging.⁹²

In actuality, Forsythe has staged sound – and as I emphasize in Chapters 7 and 8, also *choreographed* sound – in a wide variety of ways which are both highly performative and which frequently reflect the visual performativity of his works and improvisatory practices. Forsythe's sonic engagements reflect a shift in postdramatic theatre that Lehmann recognizes as an increased "musicalization." Among characteristics of this shift, he notes, is a "musical overdetermination" of speech through inclusion of spoken text in non-local languages or accents. Directors' interests in the melodies, timbres, rhythms, and corporeal performance of speech reflect the development of "an independent auditory semiotics," one in which the voice serves as more than simply a vehicle for dramatic narrative. Other characteristics Lehmann notes include exploitation of the ability to manipulate sounds electronically, fragmented soundscapes, and overlays of different "sonic worlds."⁹³ Though referring primarily to dramatic theater rather than dance, Lehmann emphasizes that

From a methodological point of view it is crucial to consider such phenomena not merely as (perhaps thoroughly original) extensions of dramatic theatre. The analytic perspective must 'switch over,' so to speak, and recognize...the new and no longer dramatic language of the theatre.⁹⁴

⁹¹ Maaïke Bleeker, "Do You See What I Mean? Artifact and the Genesis of Vision on Stage," *VISIO: The Journal of the International Association for Visual Semiotics* 5, no. 2 (2000): 41-56.

⁹² Siegmund, *Abwesenheit*, 241-245.

⁹³ Lehmann, *Postdramatisches Theater*, 155-158. Translations from Lehmann, *Postdramatic Theatre*.

⁹⁴ *Ibid.*, 158.

Lehmann thus indicates the need to recognize postdramatic theater as manifesting a performativity that involves both its visual and auditory components. As the work of many postdramatic choreographers, including Forsythe, blurs the aural boundaries between dance and theater through the inclusion of sonic elements such as those Lehmann describes, I hold that his call extends as well to contemporary dance research.

Though Lehmann cites contemporary theater as having developed a distinct aural semiotics, and though studies of the senses in isolation are valuable in their own right, I foreground the importance of *re-cognizing* sensory perception as a merged, interactive phenomenon in which information from individual sense channels augments, complements, or influences others. As I argue in this study, the increased emphasis on sound in contemporary dance makes essential an examination of the interactions of vision and audition as a factor underpinning both dance making and the linked performative experiences of audiences and performers. To date, no in-depth studies have critically examined audience reception or production methods in contemporary dance from a visuo-sonic perspective. By stressing the audio-visuality of Forsythe's works and choreographic methods, this study aims to fill this gap. In addition, this study also seeks to demonstrate the productivity of exploring audio-visuality from a cognitive perspective understood as a broad array of approaches and levels of analysis. In pursuing these goals, the study advances an approach that can be productively applied to dance studies in general and which offers an opportunity to critically reassess the visual bias in dance studies in specific and humanities studies in general.

2.4 Chapter summary

This chapter presented an introduction to the works and choreographic practices of William Forsythe as well as an overview of perspectives and emphases that inform scholarly studies of his ensembles' performances and working methods. My discussion also examined the ways that perception and sound are considered in critical studies of Forsythe's work. The studies I have cited here not only provide an invaluable array of insights into the works and choreographic methods of Forsythe and his ensembles but are also one of the many sources of inspiration for this study.

My review of studies of Forsythe's work, especially the ways in which perception and sound are explored, drew attention to aspects that tend to be underemphasized. Two of these that are of particular importance for this dissertation are:

- (i) the role played by sensory perception in the performativity of both the sensory experience of Forsythe's works and the ensembles' choreographic processes
- (ii) the importance of sound in Forsythe's works and working methods

These facets are significant in two ways. On the one hand, they highlight the fact that the *performance of perception* plays a decisive role in choreographic thinking, informing both dance making and staging practices. On the other, they emphasize that dance making and dance reception intrinsically involve the senses in concert, rather than in isolation, in ways that afford the generation of perceptually based performativity. The choreography and staging of perceptual performativity, its involvement of both performers and audiences, the critical role of sound in its production, and the insight that

cognitive studies can offer to dance studies are thus the key motivations and objectives for this study's investigation of the perceptual performativity of the works and working methods of William Forsythe and his ensemble.

Two further limitations motivate the methodologies of this study and are discussed in depth in Chapter 3. The first of these concerns the style of analysis commonly chosen. As is typically the case of analytic studies of dance and of art in general, most of the studies cited above move past the "surface" manifestations of performances to interpretive analysis, with little or no consideration of the perceptual mechanisms underpinning the impact of performances. In other words, *how performance works* is addressed at a level of cognition that, as Gestalt psychologist Rudolf Arnheim observes, has historically been considered "higher" than the faculty of sensory perception – a level that he notes is assumed not to involve thought.⁹⁵ As I argue in Chapter 4, this favoring of the cognitive over the sensory warrants critical attention, particularly in light of the enhanced role of perception in contemporary performance.

Secondly, the literature also reveals a limited focus on Forsythe's choreographic processes. Performance analysis is of course a valid approach, given that performance is the obvious result and end-product of choreographic process. However, choreographic process can itself be viewed as a product that both supports research-in-practice and reveals the metacognitive processes (thinking about thinking) that underlie dance making. Pirkko Husemann, who argues that dance's critical potential can already be discerned in choreographic processes, draws a distinction between a narrowly construed version of

⁹⁵ Arnheim, *Visual Thinking* (Berkeley: University of California Press 1969/2004).

process as technical or compositional practices and a broader conception focused on “choreographic processes and methods, forms of collaboration and presentational formats.”⁹⁶ While Husemann’s analysis concentrates on the latter, my analysis, in addition to examining performance works, focuses on the details and development of compositional modalities, as these reveal the ensembles’ thinking and theory-making about perception.

Having introduced Forsythe’s works and choreographic practices and having discussed limitations of extant research on his work, I turn to the theoretical foundations of this study. Chapter 3 lays out the two humanistic “turns” that guide this study, while Chapter 4 details the concept of perceptual performativity developed for and through this study’s analysis.

⁹⁶ Husemann, *Choreografie als kritische Praxis* (Bielefeld: transcript Verlag, 2009), 21.

Chapter 3

Theoretical Foundations and Methodology

Shifts, breaks, or reorientations of critical interest, methodology, or both occur regularly within the humanities disciplines. Such new modes of inquiry arise in response to specific research questions and interests, calling for specific methodologies and enabling particular perspectives¹. These refocusings of scholarly interest are also often motivated by the transposition of ideas or practices from one discipline to another. When such an interdisciplinary translation renders a perspective that the disciplinary community views as novel or distinct from prior research approaches, the shift often comes to be referred to as a scholarly “turn.” Doris Bachmann-Medick’s taxonomical analysis of research developments and shifts within cultural studies indicates no less than 30 turns that have followed in the wake of the “linguistic turn,” which garnered recognition as such following the inclusion of the term in the title of a 1967 anthology by Richard Rorty.² As Bachmann-Medick explains, the exploration of cultural phenomena from new perspectives in which previously underemphasized or neglected aspects gain increased attention refines disciplinary inquiry through processes of differentiation, refiguration, and reorientation.³ Others rightly point out, however, that the delineation of a “turn” in scholarship is equally a rhetorical strategy that serves to turn attention toward the new

¹ Sondra Horton Fraleigh and Penelope Hanstein, *Researching Dance: Evolving Modes of Inquiry*, (Pittsburgh: Pittsburgh University Press, 1999), 42.

² Rorty, ed., *The Linguistic Turn: Recent Essays in Philosophical Method* (Chicago and London: The University of Chicago Press, 1967).

³ Bachmann-Medick, *Cultural Turns: Neuorientierungen in den Kulturwissenschaften* (New Orientations in Cultural Studies) (Reinbek/Hamburg: Rohwolt Taschenbuch Verlag, 2006), 23.

approach. Michael C. Frank argues that the declaration of turns within theoretical practice have a performative effect in that disciplines which have typically been marginalized are brought to the center of scholarly attention and gain in importance through their interdisciplinary purchase. Examples he cites include the enhanced profiles acquired by the fields of anthropology and geography as a result, respectively, of the “cultural” and “spatial” turns.⁴ The same could be said of the “neurological” turn in some sectors of dance studies.

This chapter lays out the theoretical foundations on which the present study draws in its analysis of visuo-sonority in William Forsythe’s choreographic modalities and performance works by detailing and discussing the two scholarly “turns” that ground the study. The first section of this chapter (3.1), which provides an introduction to the cognitive turn, details the key characteristics of cognitive approaches to the humanities and demonstrates the diversity of cognitive research in several disciplines in the arts and humanities. In the following two sections, I summarize and discuss both recent empirical studies of dance (3.1.2) and cognitive studies that apply empirical research to develop theoretical perspectives (3.1.3). As this review of the literature shows, though interdisciplinary cognitive research is often conceived of as limited to empirical neuroscientific studies, the range of approaches being currently taken, as well as the cognitive paradigms on which this research relies, is actually much more diverse. In the

⁴ Frank, “Imaginary Geography as a Travelling Concept: Foucault, Said, and the spatial turn,” *European Journal of English Studies* 13, no. 1 (April 2009): 66. The term ‘cultural turn’ was first used by Mary Snell-Hornby, “Linguistic transcoding or cultural transfer. A critique of translation theory in Germany,” S. Bassnett and A. Lefevere (eds.) *Translation, history and culture* (London: Pinter 1990), 79-86, and elaborated in the anthology in which her essay appears. For a history of the spatial turn, see Edward Soja, “Taking space seriously,” in Barney Warf and Santa Arias, *The Spatial Turn: Interdisciplinary perspectives* (London and New York, Routledge, 2009), 11-35.

following section (3.2), I offer an overview of the auditory turn, noting that though this turn occurred as a reaction to the visual bias in humanistic study, in many cases it is aptly termed an *audio-visual* turn. After summarizing extant audio-visual studies in dance, I argue that choreomusical methods used to analyze prior dance genres have limited applicability for analysis of contemporary dance (3.2.2). In the chapter's concluding section (3.3), I link the two turns I have discussed, arguing that cognitive-theoretical, multimodal analyses are able to both address the specific visuo-sonorities of contemporary dance process and performance and to provide a productive bridging discourse between cognitive dance studies and other paradigms of theoretical dance research.

3.1 The cognitive turn

3.1.1 Overview and key characteristics

In the 1950's, interdisciplinary collaborations between researchers in the areas of psychology, linguistics, anthropology, and computer science led to what became known as the "cognitive revolution."⁵ Grounded historically in the fields of psychology and cybernetics, and initially focused on the development and study of artificial intelligence, the new field of cognitive science came to draw on further areas including psychiatry, philosophy, neuroscience, sociology, and biology in order to enhance study of how the mind works. Key areas of research focus include attention, perception and action, spatial

⁵ Excellent overviews of the "cognitive revolution" within the sciences are provided by Howard Gardner, *The Mind's New Science: A History of the Cognitive Revolution*, new ed. edition (New York: Basic Books, 1987); and Margaret Boden, *Mind as Machine: A History of Cognitive Science* (New York: Oxford University Press, 2006).

and temporal cognition, language processing, learning, memory, decision-making, cognitive development, and the experience of consciousness. In brief, the field of cognitive science seeks to derive better understanding of the complexity of human thinking.

As the list of research areas above shows, cognitive scientists are concerned with functions that are also intrinsically applicable to studies within the humanities and social sciences. Since the 1980's, as interest has developed in applying the findings from cognitive science beyond the scientific disciplines, numerous fields within the humanistic disciplines have taken a "cognitive turn," engaging with empirical cognitive research in order to better understand the phenomena central to their own disciplines. As a result, there are now cognitive research programs within anthropology, archaeology, linguistics, philosophy, sociology, economics, history, geography, religion, visual arts, music, film, dance, literary studies, and other areas. Though the burgeoning of activity in this new and broadly interdisciplinary research approach has not occurred without resistance, as I describe below, cognitive humanistic studies have nevertheless become increasingly established and more widely accepted. In what follows, I detail the primary characteristics of these approaches.

3.1.1.1 Naturalistic explanation

Historically, humanistic studies have been grounded in hermeneutic, or interpretive, traditions of analysis. From its beginnings in Platonic interpretive discourses on utterances and sacred texts, through the impetus of Luther, Vico, and Spinoza into

modern hermeneutics and onward to the later views of Schleiermacher, Dilthey, Heidegger, and Gadamer, hermeneutic inquiry eventually developed postmodern interpretive models of not only narrative events but also of objects and concepts, eventually casting these phenomena as texts which can be “read” and to which interpretive analyses could thus be applied.⁶ In the framework of poststructural studies, deconstructive analyses purport to explicate occulted and often unintended significances by “deciphering the hidden meaning in the apparent meaning, in unfolding the levels of meaning implied in the literal meaning.”⁷ As the interpretive tradition relies for support on theoretical models that enable primarily critical “readings,” the process of hermeneutic interpretation is a largely “top-down” practice in which the language, aims, and often the style of analysis derives from the overarching theories applied.

The hermeneutic tradition seeks to explicate meaning within frameworks of larger cultural ideas, such as society, culture, language, and psychology, through the application of non-empirical theoretical models. An alternative analytic avenue is offered by naturalizing approaches, which, like the “naturalized epistemologies” elaborated by Quine, Kornblith, Kim, and others, seek to render phenomena compatible with explanations offered by the natural sciences.⁸ Rather than extrapolating from overarching

⁶ See Maurizio Ferraris, *History of Hermeneutics* (Amherst NY: Prometheus Books, 1996 (originally published in Italian, 1988)). For an argument in favor of a shift from linguistic to embodied and utterance-centered interpretive hermeneutics, see Don Ihde, *Expanding Hermeneutics: Visualism in Science* (Evanston: Northwestern University Press, 1999).

⁷ Paul Ricoeur, *The Conflict of Interpretations: Essays in Hermeneutics* (Evanston: Northwestern University Press, 1974), xiv.

⁸ W.V. Quine, “Epistemology naturalized,” in *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969); H. Kornblith, ed., *Naturalizing Epistemology* (Cambridge: MIT Press, 1985); and Jaegwon Kim, “What is Naturalized Epistemology?” *Philosophical Perspectives* 2 (1988): 381-405.

theoretical doctrines to posit inhering structures of meaning and exemplify their presence and constitution, naturalizing approaches aim to understand and explain “how things work” in and of themselves through a grounding in highly specified and duplicable research. Such empirically derived explanations underpin the investigation, questioning, and potential revising of conceptions of phenomena.

Numerous naturalizing epistemologies have informed the study of natural and philosophical phenomena, both prior to and after the emergence of cognitive science as a discipline and the subsequent advent of the cognitive turn in the humanities. Dominant paradigms since the turn of the 20th century have included Freudian and Jungian psychoanalytic theories, Saussurean semiology, Piagetian genetic epistemology, generative linguistics, and others.⁹ However, the emergence of poststructuralist theory strongly polarized attitudes toward naturalization within many humanistic disciplines. In spite of the fact that derivations of the approaches listed above are fundamental to many critical analytic programs, the poststructuralist stance has fundamentally opposed the stature of scientific discourse as a privileged knowledge system and the linking of empirical research with the concept of truth. Some science proponents have vehemently responded by arguing that poststructuralist approaches rely on unsound theoretical premises and lack the ability to offer verifiable answers.¹⁰

Though the tenor of this discourse has often been extremely combative, an increasing number of interdisciplinary cognitive scholars have in recent years advocated

⁹ David Bordwell, “A Case for Cognitivism,” *Iris* 9 (Spring 1989): 11-16.

¹⁰ See for example Alan Sokal and Jean Bricmont, *Fashionable Nonsense: Postmodern Intellectuals' Abuse of Science* (New York: Picador, 1998) (published in UK as *Intellectual Impostures* (London: Profile Books, 1998)); and Norette Koertge, ed., *A House Built on Sand: Exposing Postmodernist Myths About Science* (Oxford: Oxford University Press, 2000).

the inclusion of cognitive approaches as a productive addition to, rather than a replacement of, extant humanistic research programs. This view has been most strongly manifested, as well as most hotly debated, within cognitive film theory, which emerged as a naturalizing subdiscipline of film studies in the mid-1990's. Aesthetic philosopher and film theorist Noël Carroll, a pioneer in this field, advocates a radical opening of film studies beyond the dominant psychoanalytic paradigm, not only to cognitive approaches but also to other theoretical alternatives. He notes the benefit of a state of "robust methodological pluralism" within the discipline, arguing that healthy dialogue and competition among theories ideally permits the emergence of better theories. Carroll emphasizes, though, that the goal of competition between theories should not be the eventual victory of a single paradigm but rather informed selection among theories based on their individual applicability to specific research areas and questions.¹¹

Other interdisciplinary cognitive scholars remain outspoken in their belief that cognitive studies offers a better framework for the justification of theories that currently underpin their respective disciplines. David Bordwell, who co-edited the 1996 anthology *Post-Theory: Reconstructing Film Studies* with Carroll, has been among the most vocal proponents of cognitive film studies. In 2001, postmodern philosopher and cultural critic Slavoj Žižek devoted three chapters of a volume to attacking Bordwell and Carroll's anthology, sparking an acrimonious debate that has continued for several years.¹² Theater

¹¹ Carroll, "Prospects for Film Theory: A Personal Assessment," in *Post-Theory: Reconstructing Film Studies*, David Bordwell and Noël Carroll, eds. (Madison, University of Wisconsin Press, 1996), 63.

¹² See the first three chapters of Žižek, *The Fright of Real Tears: Krzysztof Kieślowski Between Theory and Post-Theory* (London: British Film Institute, 2001); Bordwell, "Slavoj Žižek: Say Anything," <http://www.davidbordwell.net/essays/zizek.php> (accessed February 22, 2007); and Žižek, *The Parallax View* (Cambridge, MA: The MIT Press, 2005).

scholar Bruce McConachie is similarly outspoken, holding that cognitive studies offer the potential to invigorate the field of performance studies through the addition of a knowledge platform that is distinct from contemporary theoretical perspectives and which rests on empirically based knowledge production. McConachie, who has produced an anthology of cognitive theater studies and a volume investigating theater spectatorship from a cognitive perspective, argues that cognitive approaches can offer insight into numerous areas of key concern in performance studies, including theatricality, reception, the making of meaning, the formation of identity, the construction of culture, and historical change. As he states, “the immediate problem for our field is not the science of cognitive studies, *per se*, but the application of its major conclusions to the scholarly concerns of our work.”¹³

While cognitive theorists in film studies and performance studies have tended to energetically champion cognitive approaches, a number of literary scholars have been emphasizing the limits of these approaches and the value in bridging different paradigms of textual analysis. Alan Richardson and Francis Steen, who in 2002 edited a volume of *Poetics Today* focused on cognitive literary studies, responded to criticism of the volume with a clarification of their inclusive stance:

It is our firm conviction that science will not and cannot provide authoritative answers to the meaning and significance of literary works. Indeed, a central challenge to a cognitive description of culture is to account for the sharply different human purposes of science and literature, not to reduce one to the other. Taking a vital interest in the models, theories, and findings emerging from work in the cognitive sciences and neurosciences does not commit one to a scientific methodology, any more than taking an interest in psychoanalysis commits

¹³ McConachie & Hart, *Performance and Cognition: Theatre studies and the cognitive turn* (London & New York: Routledge, 2006), x.

Freudian or Lacanian literary critics to a therapeutic discipline. Nevertheless, the task of bringing cognitive approaches to bear on literature opens up the possibility of new empirical investigations, a challenge being taken up by some within and many more outside of the orbit of cognitive literary and cultural criticism. Rather than configuring the relationship of literary studies to empirical investigations as deceitful and illicit, we suggest there is ample opportunity for a constructive and mutually illuminating engagement.¹⁴

Ellen Spolsky elaborates that though the inclusion of cognitive approaches is valuable both in an *inter-* and *intradisciplinary* sense, it is where hypotheses and practices cross disciplines that a multiplicity of approaches is most valuable:

What is gained from these studies is an additional viewpoint—sometimes several—from the several kinds of cognitive theorizing on offer, and at best each can be employed as a critique of another and of course of the literary and cultural hypotheses. The cognitive perspectives, rather than deciding questions by empirical findings, reaffirm the need for an open-minded skepticism (. . .) The multiple perspectives provide an in-house check, forcing hypotheses to defend themselves, forcing a recognition of the complexity of the interrelationship of mind, world, and body in a way that more monologic approaches do not. This of course would be an advantage of any interdisciplinarity, but it would be most advantageous where the assumptions and methodologies of the two fields are interestingly different, as they are between the humanities and the cognitive sciences.¹⁵

It is not only the humanistic disciplines that stand to benefit from the inclusion of cognitive approaches. McConachie emphasizes the potential for such studies to engender interdisciplinary exchange by informing not only performance studies but also the discipline of cognitive science itself:

A few cognitive scientists already recognize that performance as a phenomenon offers a rich body of evidence with which to test and elaborate their theories...Our goal is a friendly symbiosis with cognitive science, and

¹⁴ Richardson and Steen, "Reframing the Adjustment: A Response to Adler and Gross," *Poetics Today*, 24, no. 2 (2003): 155.

¹⁵ Spolsky, "Cognitive Literary Historicism: A Response to Adler and Gross," *ibid.*: 177-178.

consequently the incorporation of many areas of theatre and performance scholarship within the expanding field of cognitive studies.¹⁶

However, though such interdisciplinary symbiosis and interchange clearly offers value to both sides, the transfer of ideas across far-flung disciplines is also fraught with concerns and potential difficulties. Chief among these are the power and value differentials perceived to exist between scientific and humanistic knowledge and the disadvantaging of humanistic research programs that occurs as a result. With regard to difficulties caused by interdisciplinary integration, Richardson and Steen point out that though cognitive scientists have long borrowed terms from rhetoric and literary criticism to frame their ideas, including concepts such as metaphor, scripts, and stories, they warn that such borrowing can potentially result in “the circulation of terms bled of the meanings they have acquired in their home disciplinary context.”¹⁷ Uninformed borrowing of scientific concepts within the arts and humanities, in turn, has elicited harsh criticism from scientists, most notably through the fallout from the notorious “Sokal hoax,” in which the postmodern studies journal *Social Text* published a pastiche article that claimed to reveal the political implications of quantum gravity.¹⁸

Political and social philosopher Brian Massumi, who is both an advocate and practitioner of “shameless poaching” of scientific concepts, maintains that optimally, borrowing should take place in a way that does not leave the scientific concepts “tamed, a metaphorical exhibit in someone else’s menagerie.” For Massumi, the aim of science

¹⁶ McConachie & Hart, *Performance and Cognition*, xiv.

¹⁷ Richardson & Steen, “Reframing,” 157.

¹⁸ See for example Sokal & Bricmont, *Fashionable Nonsense*, and Sokal, *Beyond the Hoax: Science, Philosophy, and Culture* (Oxford: Oxford University Press, 2008).

“poaching” should not be to make the humanities scientific, but rather to cause the humanities to differ from the sciences in unaccustomed ways. The process, he emphasizes, offers the humanistic disciplines opportunities to define their uniqueness as well as to renegotiate their relations to the sciences. Borrowing of scientific concepts, he points out, is a positive occurrence, one that is additive in that the scientific concept, while being “naturalized into the humanities,” also maintains its function within its source discipline.¹⁹

In summary, the inclusion of cognitive humanistic approaches constitutes a continuation of the larger naturalizing project in the humanities, which predates poststructuralism’s antagonistic stance toward science. Both earlier and more recent naturalizing projects share the goal of explaining the functioning of the mind and the experiences and activities it produces. Though some scholars argue that naturalizing approaches constitute a superior analytic paradigm to extant approaches within the humanities, the inclusion of cognitive approaches *augments* the array of humanistic theoretical perspectives, ideally promoting dialogue and offering benefit to both the humanistic disciplines and cognitive science. Informed and responsible transfer of ideas across disciplines can permit scientific concepts to retain their integrity and power as such.

The present study approaches Forsythe’s works and working methods from a cognitive perspective, arguing that this approach offers a highly productive theoretical base. However, it does not champion this approach as a superior paradigm of analysis or

¹⁹ Massumi, *Parables for the Virtual: Movement, affect, sensation* (Durham and London, Duke University Press, 2002), 20-21.

one that provides enhanced access to any form or “truth” about its subject. As noted in the introductory chapter, valuable analyses of Forsythe’s work have been produced that employ a range of interpretive perspectives, including historical, textual, and critical analysis. Ideally, the perspective added by this study will serve two purposes: to augment research on Forsythe’s work and to extend and refine practices of cognitive research in dance by spurring dialogue across the diverse discourses of dance research. As Jan Nolin notes, turns in scholarship “need not mean that we turn away from something else, it could just mean that the new strand of thinking has grown thicker.”²⁰ I concur with her view, as well as that of Barbara Maria Stafford, who holds that

...this deepening of biological with cultural information, and vice versa, will result, I hope, in a multiplied, even a transformed, object. The new thingly aggregate I am after gives us exponentially (not additionally) more than when it functions merely as an element within a particular discipline.²¹

3.1.1.2 *Reduced-scope inquiry*

A key practice in scientific research is what I term *reduced-scope inquiry*, analysis that involves breaking complex phenomena down into constituent functions or components and studying these individually. In other words, rather than attempting to derive hypotheses which fully explain all aspects of a given complex instance, researchers formulate and seek to answer more narrowly specified research questions. In humanistic study, the goal of reduced-scope cognitive inquiry is to illuminate the object of study by investigating its individual material aspects rather than focusing on

²⁰ Nolin, “What’s in a turn?” *Information Research* 12, no. 4 (2007), <http://informationr.net/ir/12-4/colis/colis.html> (accessed Feb. 20, 2011).

²¹ Stafford, *Echo Objects: The Cognitive Work of Images* (Chicago: University of Chicago Press, 2007), 4.

interpreting its content. However, as I discuss below, this style of research does not eliminate the possibility of broader, holistic consideration of complex phenomena, but is instead a different starting point for inquiry.

Bordwell and Carroll describe and advocate two fundamental aspects of this reduced-scope approach, one related to the style of questioning and the other related to the production of hypotheses. Firstly, Bordwell calls for a sharply focused, in-depth style of inquiry he refers to as “middle-level” research. In this approach, the scope of both research questions and units of analysis are “problem-driven,” or constrained by the goal of producing explanations that are both empirically and theoretically relevant.²² Bordwell is among the most vehement critics of broad, overarching “doctrine-driven” projects, arguing that these commonly rely on a strategically shifting and even arbitrary bricolage of ideas from Marx, Freud, Saussure, Vico, Heidegger, Husserl, and others. For Bordwell, the application of such inquiry is marked by associational leaps among theory fragments, rather than proceeding via logical progression of reasoning.²³

The second aspect is one Carroll refers to as “piecemeal theorizing.” He borrows the concept from Bertrand Russell’s 1914 essay in which Russell recommends the development of a philosophy which is “...piecemeal and tentative like other sciences; above all, it will be able to invent hypotheses which, even if they are not wholly true, will yet remain fruitful after the necessary corrections have been made.”²⁴ Carroll cites the

²² Bordwell, “Contemporary Film Studies and the Vicissitudes of Grand Theory,” in Bordwell & Carroll, *Post-Theory*, 26-30.

²³ Ibid., 18-24.

²⁴ Russell, “On Scientific Method in Philosophy,” *Mysticism and Logic and Other Essays* (New York: Longmans, Green and Co., 1918), 113.

value of analytic approaches to film taken prior to the 1980's, which focused on the unique structural and technical features of the medium, but takes issue with the subsequent theoretical step in which these structures were subsumed into overarching theories about the nature of cinema at large and the ways in which it shapes culture, ideology, and subjectivity. As he maintains, piecemeal theorizing generates theories of specific instances which can potentially, but must not necessarily, be unified into larger theoretical constructs:

The approach I advocate is piecemeal inasmuch as it recommends initially considering such devices – like point-of-view editing – one at a time, developing explanations of their operation without trying to fit those explanations into a totalizing theory of film. Of course, this does not mean that theorizing must remain atomic. Once we have the various piecemeal analyses of film structures in front of us, we may then proceed to see whether they can be assembled into larger theoretical constellations – i.e., whether there are generalizations that can coordinate our piecemeal analyses into larger frameworks. Yet even here I suggest that we should resist the expectation that all our small-scale theories will fit into one unified, overarching theory of film.²⁵

In addition to advocating the building of “local theories,” Carroll also stresses the multidisciplinary diversity such theory-building entails. As he notes, different approaches and levels of inquiry will send researchers toward different disciplinary frameworks at the outset:

Some questions about film may send the researcher toward economics, while others require a look into perceptual psychology. In other instances, sociology, political science, anthropology, communications theory, linguistics, artificial intelligence, biology, or narrative theory may provide the initial research tools which the film theorist requires in order to begin to evolve theories of this or that aspect of film.²⁶

²⁵ Carroll, *Theorizing the Moving Image*, (Cambridge: Cambridge University Press, 1996), 75.

²⁶ Carroll, “Prospects for Film Theory,” in Bordwell & Carroll, 39-40.

Reduced-scope inquiry can be considered a type of neoformalism because of its focus on identifying individual aspects or stylistic features that distinguish an art form, genre, style, or device and analyzing them as such. While some scholars claim that such an approach eliminates the potential to engage with cultural and critical concerns, numerous recent “reductive” cognitive studies have in fact addressed social, historical, political, economic, or ecocritical issues. In film studies, for example, middle-level cognitive studies have focused on such diverse topics as a “re-reading” of the *femme fatale* from the perspective of evolutionary psychology,²⁷ the mechanisms of narrative style in classic Hollywood cinema,²⁸ and the experience of repeated viewings of suspense films.²⁹ Cognitive performance studies projects have included a critical historical analysis of a 1907 riot in a Dublin theater³⁰ and a comparative cognitive-theoretical analysis of the blackfaced, cross-dressed “wench act” included in minstrel shows.³¹

The belief that reduced-scope inquiry produces exclusively reduced-scope studies is thus an artifact of the schism between poststructuralist humanities scholars and cognitive interdisciplinary researchers. As the projects described above indicate, such inquiry does not necessarily eliminate the possibility of engagement with cultural factors. Rather, it provides a different grounding for such research, one that takes the question of

²⁷ Deborah Walker, “Re-Reading the Femme Fatale in Film Noir: an evolutionary perspective,” *Journal of Moving Image Studies*, 5 (2006), <http://www.avila.edu/journal/vol4/Fatale%20evolutionary%20reading%20DW%20final2.pdf> (accessed 17 Feb 2011).

²⁸ Bordwell, *The Way Hollywood Tells It: Story and Style in Modern Movies* (Berkeley: University of California Press, 2006).

²⁹ Karen Renner, “Repeat Viewings Revisited: Emotions, Memory, and *Memento*,” *Film Studies* 8 (2006): 106-115.

³⁰ Neal Swettenham, “Categories and catcalls: cognitive dissonance in *The Playboy of the Western World*,” in McConachie & Hart, *Performance and Cognition*, 207-222.

³¹ McConachie, “Cognitive studies and epistemic competence in cultural history: moving beyond Freud and Lacan,” in McConachie & Hart, *Performance and Cognition*, 52-75.

“how things work” as an initial starting point on which to potentially, but not necessarily, build holistic analyses. As one of the goals of the present study is to demonstrate the effectiveness of cognitive approaches for developing explanations of Forsythe’s performativity, my research focuses on the production of piecemeal theories of specific visuo-sonic aspects of Forsythe’s work rather than undertaking this expanded agenda. However, I suggest some potential avenues for critical application in the concluding chapter.

3.1.1.3 Diversity of theoretical paradigms

The field of cognitive science engages with a range of theories that have emerged over the course of the last half-century. The roots of cognitive psychology, for example, run up from the 18th century British empiricists to the disciplinary separation of psychology from philosophy in the latter half of the 19th century. During the first half of the 20th century, the behaviorist tradition of B.F. Skinner (1904-1990) and others supplanted Gestalt psychology as the dominant research paradigm. Cognitive psychology distinguished itself from previous approaches in psychology by the rejection of both introspective models such as those employed in Freudian psychoanalysis and the positivism of behaviorist accounts, which in their strongest form held that consideration of unobservable mental states was unnecessary to explain observable behavior. Experimental research implying the existence and essentiality of higher mental processes such as anticipation and interpretation of events led to an increase in the study of mental phenomena like memory, attention, concept formation, language, and reasoning.

Since the inception of cognitive science as a discipline, the information-processing metaphor, which compares the functioning of the mind to that of a computer running software, has provided a powerful tool for explaining the architecture and dynamics of mental processing, attention, memory, and cognitive limits. Related to the computational metaphor is the connectionist principle, which posits that the dynamics of cognitive activity can be captured using a model of interconnected simple units that form larger functional units through patterns of spreading activation. This latter model has the advantage of being able to explain learning and emergent processes. The information-processing model of cognition, however, has not been the only approach within cognitive psychology. Simultaneously to the development of this paradigm, James J. Gibson (1904-1979) rejected behaviorism in favor of an ecological approach which views the perceptual system as comprised of the organism's mobile body, sensing organs, and the environment the organism inhabits. Instead of passive, indirect reception of information from the environment, Gibson asserted that sensing organisms directly perceive rich, informative sensory information that does not require further processing in order to be coherent and useful.³²

In recent decades, Gibson's work has inspired the development of several streams of cognitive research that, like ecological psychology, provide alternative explanations to information-processing theories of cognition. The paradigm of embodied cognition is motivated by Gibson's idea that the sensory and perceptual specifics of the body must be

³² Gibson, *The Ecological Approach to Visual Perception* (Boston, Houghton Mifflin, 1979).

considered in order to approach an understanding of the mind.³³ The roles of environment, context, and culture in perception and action are highlighted in theories of situated cognition, which stress cognition as performance “in the wild” rather than as the production and refinement of knowledge structures “in the head.”³⁴ Dynamical³⁵ and autopoietic³⁶ theories of cognition stress the continually changing and self-organizing nature of mental and perceptual processes. Theories of distributed cognition investigate the social aspects of minds working together, arguing that knowledge, rather than being confined within individual minds, is actually a distributed property of systems of individuals, objects, and environments.³⁷ The “chaotic” nature of cognition has also been recognized and studied in efforts to explain the non-linear, unpredictable, and creative aspects of thought and action.³⁸

³³ See for example Francisco Varela, Evan Thompson, and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge MA: The MIT Press, 1992); George Lakoff & Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought* (New York, Basic Books, 1999); Antonio Damasio, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness* (New York: Houghton Mifflin Harcourt, 1999); Shaun Gallagher, *How the Body Shapes the Mind* (Oxford: Oxford University Press, 2005); and Margaret Wilson, “Six Views of Embodied Cognition,” *Psychonomic Bulletin and Review* 9, no. 4 (2002): 625-636.

³⁴ See Edwin Hutchins, *Cognition in the Wild* (Cambridge, MA: The MIT Press, 1995); and James Greeno, “Gibson’s affordances,” *Psychological Review* 101, no. 2 (1994): 336-42.

³⁵ See Robert Port and Tim van Geldner, eds., *Mind as motion: explorations in the dynamics of cognition* (Cambridge MA: The MIT Press, 1995); and Lawrence Ward, *Dynamical Cognitive Science* (Cambridge MA: The MIT Press, 2001).

³⁶ See Humberto Maturana and Francisco Varela, “Autopoiesis and Cognition: the Realization of the Living” (1973) (Dordrecht: D. Reidel Publishing Co., 1980); and Humberto Maturana and Francisco Varela, *The tree of knowledge: The biological roots of human understanding* (Boston: Shambala Publications, 1987).

³⁷ Theories of distributed cognition resonate with Alfred Gell’s contention that artifacts are the bearers of human agency and have the capacity to function as operators in the world. See Alfred Gell, *Art and Agency: An Anthropological Theory* (Oxford: Clarendon Press, 1998), 222.

³⁸ See Ronald Finke and Jonathan Bettle, *Chaotic cognition: principles and applications* (Mahwah: Lawrence Erlbaum, 1996). See also Kent de Spain, “Dance Improvisation: Creating Chaos,” *Contact quarterly* 18, no. 1 (1993): 21-27.

Reflecting the fact that the larger field of cognitive science is not informed by a single theoretical paradigm, interdisciplinary cognitive studies are not restricted to a single approach. Cognitive film theorist Carl Plantinga describes this as

...an approach rather than a well-defined theory. What defines the approach is a commitment to clarity of discourse, vigorous debate, and a loose family of assumptions about workable means to study film and film spectatorship.³⁹

Many of the approaches listed above have found traction within humanities disciplines or have played roles in the creation of sub-disciplines, including cognitive anthropology, cognitive philosophy, cognitive linguistics, and cognitive musicology. Studies in various areas of the performance arts, including but not limited to film, theater, and dance studies, have already demonstrated the applicability and value of diverse theoretical directions. Cognitive studies are increasingly recognized as encompassing not only computational, “brain based” studies but also as investigating the thoughts and actions of embodied agents immersed in spatio-temporal, cultural, and social environments. In addition, the multiplicity of perspectives opens space for comparative, dialogic refinement of the theoretical perspectives themselves. Applying these perspectives to performance as a distinct register of cognition and action further expands the potential to advance and refine thinking within the field of cognitive studies, understood as a plurality of theoretical approaches.

³⁹ Plantinga, “Cognitive Film Theory: An Insider’s Appraisal,” *Cinémas: revue d’études cinématographiques/Cinémas: Journal of Film Studies* 12, no. 2 (2002): 23.

3.1.1.4 Diversity of research practice

Cognitive research not only references a spectrum of theoretical models but has also historically taken a range of forms, including both straightforward engagement with a single research method and blends of one or more practices. The range of concepts on which cognitive interdisciplinary researchers draw and the breadth of methods employed reflect the diversity of phenomena studied and the range of interests across the research community. Plantinga cites the variety of approaches and practices in cognitive film theory, which reflects the recent tendencies of research practices in other humanistic disciplines, thus:

The cognitive approach is not a unified methodology (...) Cognitive approaches tend to be interdisciplinary, some favoring the philosophical method, some an empirical psychological approach, and some a meld of the two.⁴⁰

Examples that indicate the diversity of approaches in cognitive film studies include Joseph Anderson's approach, which is guided by the ecological cognitive perspective of James J. Gibson,⁴¹ and Warren Buckland's application of cognitive semiotics,⁴² among others. In what follows, I illustrate the diversity of current cognitive research in dance by reviewing a range of examples.

⁴⁰ Plantinga, "Cognitive Theory in Film Studies: Three Recent Books," *College Literature* 33, no. 1 (Winter 2006): 216-17.

⁴¹ Anderson, *The Reality of Illusion: An Ecological Approach to Cognitive Film Theory* (Carbondale & Edwardsville: Southern Illinois University Press, 1996)

⁴² Buckland, *The Cognitive Semiotics of Film* (Cambridge, Cambridge University Press, 2000).

3.1.2 Empirical cognitive dance research

The privileging of positivist empirical research has had an enduring influence on experimental investigations of aesthetics since the earliest research in the field by G.T. Fechner (1801-1887) and others in the mid-19th century. Some of the earliest methods employed include measuring preference among alternative choices, levels of reported pleasure, physiological responses indicating arousal or heightened emotion, categorical judgments of various objects or events, and effects over time of exposure to aesthetic phenomena. Common data collection methods include behavioral observation, verbal or written response, and measurements of autonomic responses such as heart rate or galvanic (electrodermal) skin response, which indicates variances of activity in the sympathetic nervous system.

A 1996 study by Sandra Francis provides an example of how a sociological study of dance can be grounded in empirical research using simple question-response data-gathering methods. In this study, a pool of college attendee subjects were presented with an array of video clips of activities including ballet, tap dancing, ice skating, cheerleading, a jump rope competition, wrestling, and firefighting. After first being asked whether or not they considered each activity to be dance, participants were then asked to indicate what led them to their evaluations. Factors which influenced evaluation of behavior as dance included movement, beat or rhythm, the presence of music, movement patterning or choreography, expressive qualities, and appropriate movement quality. The most common factor by far underlying negative evaluations as dance was association of the activity with a different purpose, followed by inappropriate movement quality and

lack of expressiveness and communication. In Francis' analysis of these results, which relies on prototype theory, ballet emerged as the prototypical dance form.⁴³ Though this study was conducted with a very limited demographic of participants (primarily female American attendees at a Midwestern college), it offers a fairly basic but productive application of empirical sociological methods.

More recently, Renee Glass conducted a study aiming to discern how the form and presence of pre-performance talks affects audience responses to contemporary dance performance.⁴⁴ In this study, one group of participants received a detailed oral presentation, with descriptions of choreographic processes and intended meaning of the work to be viewed. A second group of participants received a general introductory talk on contemporary dance, and a third group received no pre-performance talk. The responses of all three groups' participants were then measured after performances using a questionnaire specifically developed to measure interpretive tendencies, enjoyment, and emotional response. The inclusion of information sessions was found not to significantly affect enjoyment of the works. However, the study also found that though the differences between information sessions did not significantly affect the tendency to interpret the works, the actual content of the two attendee groups' interpretations varied substantially, with participants who were given detailed information being more likely to interpret works along the lines of that information. Glass suggests these results as a starting point for further research on audience awareness, pleasure, and motivation.

⁴³ Francis, "Exploring Dance as a Concept: Contributions from Cognitive Science," *Dance Research Journal* 28 (Spring 1996): 51-66.

⁴⁴ Glass, "Observer Response to Contemporary Dance," in *Thinking in Four Dimensions: Creativity and Cognition in Contemporary Dance*, Robin Grove, Catherine Stevens, and Shirley McKechnie, eds. (Melbourne: Melbourne University Press, 2005), 107-21.

In recent years, researchers have increasingly employed media technologies to study the aesthetic experiences of art creation and reception. These include the use of film and computer-generated movement displays for the creation and presentation of stimuli, visual technologies such as “point-light” displays (lights attached to moving bodies or objects are filmed against dark backgrounds), and eye tracking devices. One example of such usages is a 1997 study by Sheila Brownlow et al. which aimed to establish whether experience with dance resulted in differences in the evaluation of dance movement’s emotional content. Dance phrases choreographed to display movement qualities identified as “happy” or “sad” were filmed using the point-light technique and then shown to participants who were identified as either dance novices or experienced dancers. Results indicated that novice participants judged the happy dance movements to be more open, free, fluid, and less exaggerated than did participants with dance experience. Novices also judged sad dance movements to be less energetic than experienced dancers did. The study further revealed some differences across participant genders: female novices judged the happy dance phrases as less dominant than male novices, and only female novices made a distinction regarding the openness of happy dance movement.⁴⁵

Catherine Stevens, whose research centers on temporal phenomena including dance, music, and other forms of sound, has directed numerous studies focused on the perception of contemporary dance from the perspective of both its reception and its

⁴⁵ Sheila Brownlow, Amy Dixon, Carrie Egbert, and Rebecca Radcliffe, "Perception of movement and dancer characteristics from point-light displays of dance," *The Psychological Record* 47, no. 3 (1997): 411-21.

performance. A recent pioneering eye tracking study by Stevens et al. (2010) compares the eye movements of expert dance viewers and novices to determine whether acquired expectations have an influence on the way that dance movement is viewed. In this study, participants viewed a dance film twice while wearing a head-mounted eye tracker that monitors the position of the head and pupils. The study found that the visual fixation times of dance experts were significantly shorter than those of novices, though during second viewings, novices' fixation times were markedly reduced. Differences in the speed of saccades (rapid eye movements from one focal target to another) were also noted, with experts' saccades being faster. A particularly interesting finding of the study was not only that both novices and experts spend a substantial amount of time fixating on background regions rather than the bodies of performers, novices spent more time fixated off of the performers' bodies. Stevens et al. interpret the off-body fixations as a pattern of anticipatory viewing, in which spectators scan the space where parts of the body are expected to go. The authors hold that the reduced amount of time spent by expert viewers focusing on background results from a greater level of "perceptual fluency," or acquired skill at anticipating and processing movement material.⁴⁶

A prior study by Stevens et al. is remarkable for its consideration of dance as an art form tied intrinsically to time and almost always to rhythm and/or music. In the trials of this study, which investigates the mechanisms by which dancers keep time, a dancer performed a choreographed contemporary dance piece with and without music while her

⁴⁶ Catherine Stevens, Heather Winkler, Clare Howell, Lyne-Marine Vidal, Cyril Latimer, and Josephine Milne-Home, "Perceiving dance: schematic expectations guide experts' scanning of a contemporary dance film," *Journal of Dance Medicine & Science* 14, no. 1 (2010): 19-25.

movements were recorded using motion-capture technology. The performance without music was 14 seconds shorter than the four-minute performance to music. The timing of local body movements in the two trial conditions was compared to discern whether the variance in timing with and without music was primarily the result of scaling (faster or slower performance of material) or of lapses (omissions or insertions of material). The study revealed that lapses accounted for nearly all of the speeding up, though scaling caused 20 per cent of the timing variances. The study effectively teases apart two separate mechanisms that could potentially cause timing variance and, in so doing, makes a comparison possible between the accuracy of the dancer's auditory imagery, or "internal clock," and their motor memory.⁴⁷

In 2002, Semir Zeki, Vilyanur Ramachandran and collaborators from the fields of cognitive philosophy, art, and art history grounded the subdiscipline of "neuroesthetics," which employs neurological research to investigate aesthetic experience.⁴⁸ Over the last ten years, there has been a burgeoning of empirical dance studies which employ brain scanning methods such as electroencephalography (EEG), functional magnetic resonance imaging (fMRI) and positron emission tomography (PET). Key projects have analyzed brain activation in observers of dance,⁴⁹ activation patterns in dance performers,⁵⁰ and the

⁴⁷ C. Stevens, E. Schubert, S. Wang, C. Kroos, & S. Halovic, "Moving with and without music: scaling and lapsing in time in the performance of contemporary dance," *Music Perception* 26, no. 5 (2009): 451-64.

⁴⁸ See Zeki, *Inner Vision: An Exploration of Art and the Brain* (New York: Oxford University Press, 1999). The three-volume series "Art and the Brain" of the *Journal of Consciousness Studies* 6, nos. 6-7 (1999), edited by Joseph Goguin, and vols. 7, nos. 8-9 (2000) and 11 (3-4) (2004), edited by Goguen and Erik Myin, is also exemplary for the breadth of debate and response sparked by V.S. Ramachandran's provocative essay, "The Science of Art: A Neurological Theory of Aesthetic experience" which opens the first volume (pp. 15-35).

⁴⁹ Beatriz Calvo-Merino, Daniel Glaser, Julie Grèzes, Richard Passingham, and Patrick Haggard, "Action Observation and Acquired Motor Skills: An fMRI Study with Expert Dancers," *Cerebral Cortex* 15 (August

neural representation of expertise for dance sequences.⁵¹ In addition to these neuroimaging studies, technologies have also been employed to study aesthetic experience by altering brain function. In a recent study by Calvo-Merino et al., the localization of aesthetic response within the brain was studied by disrupting aesthetic processing through the use of transcranial magnetic stimulation.⁵²

The current necessity of conducting neuroscience research within laboratory settings using stimuli suited to the limiting architectures of the equipment poses obvious limits on the forms that such research can take. In recent years, though, some scientists have addressed the complexity of experiences of and with art, along with the situated nature and subjective specificities of art making and reception, by moving between the laboratory and the studio, gallery, or theater in order to study aesthetics *in situ*. Additionally, approaches to aesthetic phenomena have become increasingly collaborative across the disciplines, with arts scholars and practitioners providing crucial input into both research design and the interpretation of results. For example, a long-term project, which was carried out in phases between 1999 and 2008 by teams of Australian researchers and dance artists led by principal investigators Shirley McKechnie and Robin Grove, has investigated the thought processes underlying the creation, performance, and

2005): 1243-49; Beatriz Calvo-Merino, Julie Grèzes, Daniel Glaser, Richard Passingham, and Patrick Haggard, "Seeing or doing? Influence of visual and motor familiarity in action observation," *Current Biology* 16, no. 19 (2006): 1905-10; and Guido Orgs, J. Dombrowski, M. Heil, & Jansen-Osmann, "Expertise in dance modulates alpha/beta event-related desynchronization during action observation," *The European Journal of Neuroscience* 27, no. 12 (2008): 3380-84.

⁵⁰ S. Brown, M. Martinez, & L. Parsons, "The neural basis of human dance," *Cerebral Cortex* 16 (2006): 1157-67.

⁵¹ E. Cross, A. Hamilton, & S. Grafton, "Building a motor simulation de novo: Observation of dance by dancers," *Neuroimage* 31, no. 3 (2006): 1257-67.

⁵² Beatriz Calvo-Merino, Cosimo Urgesi, Guido Orgs, Salvatore M. Aglioti, and Patrick Haggard, "Extrastriate body area underlies aesthetic evaluation of body stimuli," *Experimental Brain Research* 204 (2010): 447-56.

observation of contemporary dance through a variety of empirical research study designs.⁵³ Another project titled *Choreography and Cognition* brought cognitive researchers from the areas of experimental psychology and neuroscience into the studio with choreographer Wayne McGregor and his ensemble Random Dance. Referencing McGregor's choreographic practices, dance phrases created, and notebooks and scoring produced by the choreographer and dancers, the scientists devised experiments which investigated a range of issues, including the planning and execution of movement, communication practices between choreographer and dancers, parsing of movement into phrases, and the efficiency of documentation tools used in rehearsal.⁵⁴ Participant Phil Barnard, whose research focuses on the cognitive underpinnings of both symbolic and social meaning construction, comments that "dance and choreography provide a unique platform for studying, using both quantitative and qualitative methods on how thought and abstract senses of the embodied self work."⁵⁵ More recently, David Kirsh has continued to work with McGregor's company, developing an analysis of how "marking,"

⁵³ The three projects *Unspoken Knowledge: expanding industry productivity and value through strategic research into choreographic practice*, *Conceiving Connections: increasing industry viability through analysis of audience response to dance*, and *Intention and Serendipity: investigating improvisation, symbolism and memory in creating Australian contemporary dance* are summarized at MARCS Auditory Laboratories, "Researching Dance and Cognitive Science, 1999-2009," <http://marcs.uws.edu.au/?q=research/researching-dance-and-cognitive-science> (accessed April 26, 2011). See also Grove et al., *Thinking in Four Dimensions*.

⁵⁴ For a comprehensive overview of this project, see Rosaleen McCarthy, Alan Blackwell, Scott deLahunta, Alan Wing, Kristen Hollands, Philip Barnard, Ian Nimmo-Smith, and Anthony Marcel, "Bodies Meet Minds: Choreography and Cognition," *Leonardo* 39, no. 9 (October 2006): 475-78.

⁵⁵ Scott deLahunta, "Augmenting choreography: insights and inspirations from science," in Jo Betterworth and Liesbeth Wildschut, *Contemporary Choreography: A Critical Reader* (London & New York: Routledge, 2009), 431-448.

or the performance in rehearsal of reduced-scale movements of the hands or body to represent full-scale movements, constitutes a way of “thinking with the body.”⁵⁶

The range of empirical studies being carried out today, which I have exemplified above, offers many valuable insights into the nature of dance as a physical, cognitive, and cultural register of behavior. However, there is a strong tendency among dance scholars to equate cognitive dance research solely with empirical studies and, in some cases, to associate cognitive approaches to dance solely with neuroesthetic research. The word *neuroscience* is frequently inserted into discourse about choreographers’ or dance researchers’ cognitive interests or investigations. While one possible explanation is ignorance of the breadth of practice in the field, another is that this usage may be intended to support an agenda of framing cognitive studies as inherently and radically reductive. For those who advocate cognitive approaches to dance making and dance research, in turn, it may be that the term is perceived of as connoting a harder, “sexier” scientific practice than the term *cognitive*.⁵⁷ In either case, unfounded use of the term *neuroscience* further fosters reductionist views of a field that is in fact broader in practical scope. As I show in the next section, this research also includes the approach taken in this dissertation, namely non-empirical investigations that are grounded in cognitive research.

3.1.3 Theoretical cognitive dance research

⁵⁶ David Kirsh. “How marking in dance constitutes thinking with the body,” *Proceedings of the 2nd International Conference on Computational Creativity*, 2011.

⁵⁷ Similarly, the term *cognitive science*, which refers to the much broader discipline, is often favored over *cognitive psychology*.

In addition to empirical research practices such as those described above, numerous interdisciplinary programs of theoretical investigation develop explanatory frameworks that either corroborate with or interrogate empirical cognitive research from other domains. These studies apply concepts and findings from across numerous subfields of cognitive psychology, using methods of analytic philosophy to illuminate both the phenomena under study and the cognitive processes underlying its structures or affects. It is not uncommon for researchers to reference differing cognitive perspectives or to mix cognitive research with theories from other knowledge domains.

Within dance studies, Kent de Spain was among the first to take a non-empirical cognitive approach to dance. His collected writings in this area, which access a broad range of ideas from cognitive science but which largely refrain from in-depth engagement with the literature, invite more research on the concepts referenced. In a series of brief essays published in *Contact quarterly* in 1994 and 1995, de Spain first explores the complexity and seemingly chaotic nature of improvisational thought from a perspective informed by Benoit Mandelbrot's fractal theory and "phase space" computational models of dynamical non-linear systems, which form non-repeating but visually organized designs known as "strange attractors."⁵⁸ In a follow-up paper, he posits the "improvising mind" as possessing a "structured dualism" integrating linearity and non-linearity and producing a parallel dualism in function.⁵⁹ It is interesting to note how de Spain, an

⁵⁸ See de Spain, "Dance improvisation."

⁵⁹ de Spain, "More Thoughts on Science and the Improvising Mind," *Contact quarterly* 19, no. 1 (1994): 58-63.

experienced improviser, supports this contention with his own subjective and specifically embodied experience of improvisation:

I find this idea to be more than a theoretical construct because I have felt this effect in my body while dancing. Sometimes, in the hyperawareness of improvisation, there are microseconds of stillness between movements...where I sense an actual muscular tension that feels like my body wants to go in several directions. An instant later this tension resolves itself with a release into movement.⁶⁰

De Spain continues by invoking a quantum theory model of logical unpredictability to capture the dynamics of improvisational choice, noting that culture cannot be elided as a contributing factor in the decision-making equation. In a subsequent article, de Spain continues to move away from chaos theory and toward research on decision-making processes. In view of the differing intentionality and corporeal use in dance movement, he casts Gibson's delineation of "performatory" and "exploratory" movements as opposite ends of the improvisational movement spectrum rather than as a dichotomy.⁶¹ De Spain further explores intentionality in a later essay, arguing that the "intentional schism" experienced in improvisation may be the result of division of attention between internal (sensory) and external (projected audience experience) points of view. As he concludes:

Improvisation, as I understand it, is an attentional practice: the more you attend to movement and memory and sensing and intention, the more you play (improvise) with all of the elements of what we call living – and the more you understand that reality itself is based on the relationship between our attention and the world. You sense that your attention is both selecting and forming your experience in real

⁶⁰ Ibid., 59.

⁶¹ de Spain, "A Moving Decision: Notes on the Improvising Mind," *Contact quarterly* 20, no. 1 (1995): 49. Cf. J.J. Gibson, *The Senses Considered as Perceptual Systems* (Westport: Greenwood Press, 1966): 44-46.

time, but that what is being selected and formed is not entirely of your own choosing, because the world is improvising too...”⁶²

In this paper, for which he solicited feedback from six other improvisers, de Spain also aptly highlights the difficulty of gathering data from moving dancers by describing the method he developed to do this: using one tape recorder which played periodic commands to the moving dancers to verbally report their current experience, and another to record their spoken observations.⁶³ However, de Spain’s citation of his research as being underpinned by an “aesthetic...which follows a ‘constructivist’ model (also known as ‘naturalistic inquiry’)” is confusing.⁶⁴

Ivar Hagendoorn’s research has been of substantial value in illuminating the great variety of cognitive research areas that are applicable to the study of dance. In several essays written from 2002 until present,⁶⁵ Hagendoorn highlights a number of key directions for the study of dance from a cognitive perspective, applying research on motor imagery, the perception of biological movement (specific attunement to the nature and features of human and animal motion), attention, emotion, and meaning to both the production and perception of dance. Referring to the research of Alain Berthoz, which

⁶² de Spain, “The Cutting Edge of Awareness: Reports from the Inside of Improvisation,” in *Taken by Surprise: A Dance Improvisation Reader*, Ann Cooper Albright and David Gere, eds. (Middletown CO: Wesleyan University Press, 2003), 37.

⁶³ Ibid., 28.

⁶⁴ Ibid., 38.

⁶⁵ See Hagendoorn, “The dancing brain,” *Cerebrum* 5, no. 2 (2003): 19-34; id., “Cognitive dance improvisation. How study of the motor system can inspire dance (and vice versa),” *Leonardo* 36, no. 3 (2003): 221-7; id., “Towards a neurocritique of dance,” *BalletTanz Yearbook*, 2004, 62-7; id., “Some speculative hypotheses about the nature and perception of dance and choreography,” *Journal of Consciousness Studies* 11, no. 3/4 (2004): 79-110; id., “Dance Perception and the Brain,” in Grove et al., *Thinking in Four Dimensions*, 137-48; id., “Einige methodologische Bemerkungen zu einer künftigen Neurokritik des Tanzes,” in *Tanz im Kopf/Dance and Cognition (Jahrbuch Tanzforschung*, 15), Johannes Birringer and Josefine Fenger, eds. (Münster: LIT Verlag, 2005), 233-40; and id., “Dance, Choreography and the Brain,” in *Art and the Senses*, Francesca Bacci and David Melcher, eds. (Oxford: Oxford University Press, 2011), 513-28.

posits the brain as an organ of prediction, Hagendoorn has speculated on the role of unexpected or novel choreographic events in guiding and maintaining spectator attention and in creating the spatio-temporal aesthetic qualities particular to dance performance. In addition, he has highlighted the potential link between the concept of kinesthetic empathy and the mirror neuron matrix, which neuroscientists have proposed as the physiological mechanism underpinning not only of our abilities to learn and deduce intentionality, but also of empathetic capability.⁶⁶

The 2005 volume *Tanz im Kopf: Dance and Cognition* contains several outstanding examples of theoretical cognitive dance studies. Corinne Jola and Fred Mast's essay evokes the image of the "dancing brain" to describe the role played by motor imagery in dance.⁶⁷ Annette Hartman considers the concept of what is often referred to as "muscle memory" (Körpergedächtnis) from a neuroscientific perspective, discussing patterns of neuronal activation during observed movement and movement recall.⁶⁸ Beyond this volume, a paper presented by Allen Fogelsanger and Kathleyna Afandour in 2006, which I discuss in detail in the following section, investigates perceived relations between dance and accompanying music and the 20th-century paradigm of choreography that does not "go with" its music. More recently, Matthew Reason and Dee Reynolds, collaborators on the project *Watching Dance: Kinesthetic*

⁶⁶ V. Gallese, L. Fadiga, L. Fogassi, & G. Rizzolatti, "Action recognition in the premotor cortex," *Brain* 119, part 2 (1996): 593–609; and G. Rizzolatti, L. Fadiga, V. Gallese, & L. Fogassi, "Premotor cortex and the recognition of motor actions," *Brain Research: Cognitive Brain Research* 3, no. 2 (1996): 131–41.

⁶⁷ Jola & Mast, "Dance images. Mental imagery processes in dance," in Birringer & Fenger, *Tanz im Kopf*, 211–32.

⁶⁸ Hartmann, "Mit dem Körper memorieren: Betrachtung des Körpergedächtnisses im Tanz aus neurowissenschaftlicher Perspektive," in Birringer & Fenger, *Tanz im Kopf*, 185–199.

Empathy, have blended ethnographic and cognitive research to explore how audiences empathetically respond to dance.⁶⁹

In summary, common perceptions of cognitive dance studies as solely taking the form of empirical research or of neuroscience studies are erroneous. In addition to empirical studies investigating a wide variety of questions about dance and employing a range of empirical methodologies, cognitive dance research also takes the form of theoretical investigations that apply research from numerous cognitive science subfields and paradigms. In addition, rather than being confined to laboratory studies and carried out solely by scientists, cognitive dance research studies are also conducted “in the wild,” with choreographers and dancers at times taking an active role in the structuring of research questions and investigative methods. As these studies have yielded much valuable insight into the nature of choreography, performance, and reception, this diversity of practice can be expected to be sustained in further research.

3.1.4 Summary of cognitive approaches

Section 3.1 has presented an overview of key principles of cognitive study within the arts and humanities and a summary of cognitive approaches in dance studies. As the section shows, cognitive studies offer a beneficial contribution to a methodological pluralism which, rather than necessarily competing with extant programs of humanistic research, opens a space for productive dialogue between widely differing approaches and thereby refines thinking in both the humanities and cognitive sciences. The range of

⁶⁹ Reason and Reynolds, “Kinesthesia, Empathy, and Related Pleasures: An Inquiry into Audience Experiences of Watching Dance,” *Dance Research Journal* 42, no. 2 (Winter 2010): 49-75.

topics addressed within interdisciplinary cognitive scholarship demonstrates that the reduced scope of inquiry taken in cognitive approaches supports the development of explanatory models of humanistic phenomena without precluding engagement with cultural and critical concerns. In addition, cognitive science does not rest on a single monolithic base either of theory or practice, but is instead marked by a diversity of both. The range of cognitive dance studies exemplified above indicates that the state of the subfield is one of robust, productive, and varied research activity.

One aim of this overview has been to explain the parameters of interdisciplinary cognitive research in the arts and humanities and to show how the “cognitive turn” has productively manifested in dance studies. Another aim has been to draw attention to both the tools my study draws on and the limitations it addresses. A number of fundamental research concerns discussed above are pertinent for this dissertation, including perception, choreographic thought processes, and dance’s specific affective potentials. The current study draws traction from various streams of empirical research in cognitive psychology but also from fields within linguistics, embodied philosophy, musicology, film studies, and performance studies.

Further, as I point out in this study’s introduction, in spite of the fact that dance is fundamentally an audio-visual art form, cognitive dance research has focused almost exclusively on the visual aspects of dance. The predominance of visually-oriented interdisciplinary cognitive research reflects the dominance of vision as a perceptual paradigm both within arts and humanities scholarship and within cognitive psychology. Additionally, the visual emphasis in cognitive dance studies reflects the tendency within

cognitive research to study the senses in isolation rather than in concert. However, reflecting the increase in recent decades of auditory and intermodal research programs in cognitive studies, such investigations are also currently undergoing a burgeoning of interest within the humanities. In the next section of this chapter, I consider this humanistic turn to the auditory, which, as previously argued, is not necessarily a turn away from the visual but rather a broadened scope that permits consideration of the interaction of the senses.

3.2 The audio-visual turn in the arts and humanities

3.2.1 Overview and key principles

The second methodological approach that motivates this dissertation follows the recent “auditory” or “acoustic turn” in humanistic scholarship. At first blush, this turn seems to be a manifestation of the recent “sensory turn,” or increased interest in “sensuous scholarship,” which also includes studies on smell, taste, and the haptic senses.⁷⁰ However, Petra Maria Meyer maintains that the auditory or acoustic turn is not simply the latest in a string of scholarly turns regularly announced since the 1960’s, including the “linguistic,” “iconic,” “pictorial,” and “performative.” Instead, she argues,

⁷⁰ See Paul Stoller, *Sensuous Scholarship* (Philadelphia: University of Pennsylvania Press, 1997). See also David Howes, ed., *Empire of the Senses: The Sensual Culture Reader* (New York & Oxford: Berg, 2004); Sally Banes and André Lepecki, eds., *The Senses in Performance* (London, Routledge, 2007); Francesca Bacci and David Melcher, *Art & the Senses* (Oxford: Oxford University Press, 2011); and Cynthia Jean Cohen Bull, “Sense, Meaning, and Perception in Three Dance Cultures,” in Jane Desmond, ed., *Meaning in motion: new cultural studies of dance* (Durham: Duke University Press, 1997), 269-288. Tim Ingold, however, is critical of the approach taken in Bull’s article due to “its naturalisation of the properties of seeing, hearing and other sensory modalities, leading to the mistaken belief that differences between cultures in the ways people perceive the world around them may be attributed to the relative balance, in each, of a certain sense or senses over others.” Ingold, *The Perception of the Environment: Essays in Livelihood, Dwelling, and Skill* (London, Routledge, 2000), 281.

it has in fact been an implied dimension of all of these earlier refocusings.⁷¹ What distinguishes the auditory turn is its interrogation of *ocularcentrism*, a term coined in 1993 by Anthony Synnott which describes the prioritization of the visual sense that has historically governed research in the arts and humanities.⁷²

Consideration of vision as superior among the senses can be traced back as far as Plato, who held sight to be the most beneficial of the senses because the sight of heavenly bodies enabled man to conceive of “number and time, the power of enquiry, and philosophy, which is the great blessing of human life; not to speak of the lesser benefits which even the vulgar can appreciate.”⁷³ Aristotle’s *Metaphysics*, in turn, opens by positing vision as the model for thought:

All men by nature desire to know. An indication of this is the delight we take in our senses; for even apart from their usefulness they are loved for themselves; and above all others the sense of sight. For not only with a view to action, but even when we are not going to do anything, we prefer seeing (one might say) to everything else. The reason is that this, most of all the senses, makes us know and brings to light many differences between things.⁷⁴

Descartes, too, held sight to be “the most comprehensive and noblest” of the senses but suggested that it was essentially an extension of the tactile sense, as when a person unable to see uses a stick to discern objects in his or her path.⁷⁵ A substantial number of 20th-century philosophers would later reject what Martin Jay refers to as the “Cartesian

⁷¹ *Acoustic Turn*, Petra Maria Meyer, ed. (Munich: Wilhelm Fink Verlag, 2008), 13-14.

⁷² Synnott, *The Body Social: Symbolism, Self, and Society* (London: Routledge, 1993). See also Don Ihde, *Listening and Voice: A Phenomenology of Sound* (Athens: Ohio University Press, 1976; rpt. SUNY Press, 2007); Wolfgang Iser, “On the Way to an Auditive Culture?” *Undoing Aesthetics* (London: Sage, 1997): 150-67; Michael Bull and Les Back, eds., *The Auditory Culture Reader* (Oxford: Berg Publishers, 2004); and Meyer, *Acoustic Turn*.

⁷³ Plato, *Timaeus* (360 B.C.), transl. Benjamin Jowett (Englewood Cliffs: NJ, Pearson, 1959), 478.

⁷⁴ Aristotle, *Metaphysics* (350 B.C.), translated by W.D. Ross (Oxford: Clarendon Press, 1924), 1.

⁷⁵ Descartes (1637), *Discourse on Method, Optics, Geometry, and Meteorology*, transl. Paul Olscamp (Indianapolis, Bobbs-Merrill, 1965), 65, 67.

perspectivalist scopic regime.”⁷⁶ Maurice Merleau-Ponty was among the most critical, holding that the view of vision as a superior sense privileges “an ahistorical, disinterested, disembodied subject entirely outside of the world.”⁷⁷

Well before Synnott’s formulation of the term *ocularcentrism*, Walter Ong traces the dominance of the visual within Western societies through to the electronic age, citing “the shift from the more vocal ancient world – truly an audile’s world – to what has been called the silent, colorless, and depersonalized Newtonian universe.”⁷⁸ As he notes, the visual was emphasized in Renaissance astronomy, mechanics, and physics, as well as in the perspectively oriented art of the period.⁷⁹ The printing press further facilitated the organization of information along visual rather than oral lines. The result was a shift in informational organization from the aurally and interpersonally defined patterns of rhetoric and dialectics to visually and therefore spectatorially defined patterns of observation of objects and structures.

In a 1969 interview for *Playboy* magazine, Ong’s mentor Marshall McLuhan summarizes the dividing force of ocularcentrism thus:

Any culture is an order of sensory preferences, and in the tribal world, the senses of touch, taste, hearing and smell were developed, for very practical reasons, to a much higher level than the strictly visual. Into this world, the phonetic alphabet fell like a bombshell, installing sight at the head of the hierarchy of senses. Literacy propelled man from the tribe, gave him an eye for an ear and replaced his integral in-depth communal interplay with visual linear values and fragmented consciousness. As an intensification and amplification of the visual function, the

⁷⁶ For a comprehensive analysis, see Jay, *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought* (Berkeley: University of California Press, 1993).

⁷⁷ Jay, “Scopic Regimes of Modernity,” in *Vision and Visuality*, Hal Foster, ed. (Seattle: Bay Press, 1988), 10.

⁷⁸ Ong, “System, space, and intellect in Renaissance symbolism,” in *The Barbarian Within and other fugitive essays* (New York: The Macmillan Company, 1962), 83.

⁷⁹ *Ibid.*, 69.

phonetic alphabet diminished the role of the senses of hearing and touch and taste and smell, permeating the discontinuous culture of tribal man and translating its organic harmony and complex synaesthesia into the uniform, connected and visual mode that we still consider the norm of “rational” existence.⁸⁰

McLuhan’s observations are similarly reflected by Jacques Attali who, in his critical assessment *Noise: The Political Economy of Music*, comments thus:

For twenty-five centuries, Western knowledge has tried to look upon the world. It has failed to understand that the world is not for the beholding. It is for hearing. It is not legible, but audible. Our science has always desired to monitor, measure, abstract, and castrate meaning, forgetting that life is full of noise and that death alone is silent: work noise, noise of man, and noise of beast. Noise bought, sold, or prohibited. Nothing essential happens in the absence of noise.⁸¹

Resistance to ocularcentrism seeded a response within philosophical and cultural scholarship. In 1976, post-phenomenologist and philosopher of science and technology Don Ihde heralded the beginning of an “auditory turn” in cultural studies. Decrying the distrust of perception and the de-privileging of audition initiated in ancient philosophy and perpetuated by Descartes and Locke, he states:

What is being called visualism here as a symptom is the whole reductionist tendency which in seeking to purify experiences belies its richness at the source. A turn to the *auditory dimension* is this potentially more than a simple changing of variables. It begins as a deliberate decentering of a dominant tradition in order to discover what may be missing as a result of the traditional double reduction of vision as the main variable and metaphor. This deliberate change of emphasis from the visual to the auditory dimension at first symbolizes a hope to find material for the recovery of the richness of primary experience which is now forgotten or covered over in the too tightly interpreted visualist traditions.

It might even be preliminarily suspected that precisely some of the range of phenomena at present most difficult for a visualist tradition might yield more readily to an attention which is more concerned with listening. For example,

⁸⁰ McLuhan, “The Playboy Interview: Marshall McLuhan,” <http://www.nextnature.net/2009/12/the-playboy-interview-marshall-mcluhan/> (accessed April 20, 2011).

⁸¹ Jaques Attali, *Noise: The Political Economy of Music* (Minneapolis, University of Minnesota Press, 1985; orig. *Bruits: essai sur l'économie politique de la musique*, Presses Universitaire de France, 1977).

symbolically, it is the *invisible* which poses a series of almost insurmountable problems for much contemporary philosophy. “Other minds” or persons who fail to disclose themselves in their “inner” invisibility; the “Gods” who remain hidden; my own “self” which constantly eludes a simple visual appearance; the whole realm of spoken and heard language must remain unsolvable so long as our seeing is not also a listening. *It is to the invisible that listening may attend.*⁸²

A year later, R. Murray Schafer’s volume *The Tuning of the World* calls for the establishment of “acoustic design” as a distinct discipline and provides a pioneering taxonomy of acoustic experience and analysis of the soundscape’s influence on human behavior.⁸³ Most recently, other scholars who, primarily motivated by developments in electronic media and “sound art,” or installation works focused on the aural experience, have reiterated Ihde’s call for a reappraisal of the ocularcentrist attitudes which have governed Western study of philosophy and culture. Wolfgang Welsch champions equality between the visual and auditory senses but maintains that “an occasional overloading of the acoustic side of the scales might well be called for – as long as the concern is to redress the opposite imbalance” of vision being considered the primary sense. Welsch encapsulates the motives for privileging vision in a typology of differences across the two senses, which I summarize here in table form:

The visible

Enduring objects
Concerned with constants, being
Perception supported by rechecking
Produces distancing, objectification
Limited corporal affect
Solitary, individual experience

The audible

Ephemeral percepts
Concerned with transience, the event
Demands attention to the moment
Creates alliance with the world
Physically penetrating affect
Societal experience

⁸² Ihde, *Listening and Voice*, 14.

⁸³ Schafer, *The Tuning of the World* (New York: Alfred Knopf, 1977).

The transition envisioned by Welsch from a visual culture to an auditory one takes two potential forms which are prescriptive in different ways: a beneficial “revision of culture” in which audition becomes the new motivating paradigm, or an improvement of the current auditory status quo through reduction of “acoustic environmental pollution” and optimization of the sonic conditions where sound is necessarily present.⁸⁴

While the “auditory turn” marks a flourishing in studies of purely auditory phenomena, it has also generated a stream of scholarship that, rather than focusing solely on auditory aspects of culture, develops multimodal investigations of the interaction of vision and audition. In his later writing on language in both its written and spoken forms, Ong presages this perspective by evoking the concept of the “sensorium,” or the senses taken as what he terms an “operational complex.”⁸⁵ Like the authors mentioned above, Ong emphasizes the affective power of the oral/aural register, claiming that “Sound is more real or existential than other sense objects, despite the fact that it is also more evanescent.”⁸⁶ Further, he notes that whereas vision necessarily requires distance from the object of contemplation, sound surrounds us and situates us in the world.⁸⁷ Critically, Ong argues that the dominance of vision leads to the neglect the other senses as sources of knowledge and to the discounting of the multimodality of perception evoked by the

⁸⁴ Welsch, “On the Way,” 150-67.

⁸⁵ Ong, *The presence of the word: Some prolegomena for cultural and religious history*, 2nd ed. (Binghamton: Global Publications, 2000), 6.

⁸⁶ Ibid., 111.

⁸⁷ Ibid., 128.

concept of the sensorium.⁸⁸ Thus, Ong implicitly indicates the value of turning *toward* the auditory.

Recently, scholars from fields as diverse as archaeology and architecture have joined in advocating a multimodal approach to understanding cultural artifacts and events. Christopher Witmore, who encourages the enrichment of archaeological study by “tuning into the acoustic properties of the material past,” convincingly argues that a rebalancing of the ideological power of the different senses, though desirable, further perpetuates a non-integrated view of human perceptual experience. A multisensory approach to the study of perception and (inter)action (with)in the world, he argues, goes beyond monomodal paradigms of analysis to interrogate “the dichotomy between hearing and seeing” and foster awareness of the connectedness of the six (proprioception included) senses.⁸⁹ Architect and architectural theorist Juhani Pallasmaa, in turn, challenges ocularcentrist thinking about architecture by proclaiming a “sensory architecture” in which the interaction of the full range of senses influences the design and material selection buildings. Pallasmaa, who views all senses as extensions of the haptic, cites sound’s usually unnoticed conveyance of information about spatial volume. As he states, “A space is understood and appreciated through its echo as much as through its visual shape, but the acoustic percept usually remains as an unconscious background experience.”⁹⁰

⁸⁸ Ong, “‘I See What You Say:’ Sense Analogues for Intellect,” in *Interfaces of the word: Studies in the evolution of consciousness and culture* (Ithaca and London: Cornell University Press, 1977), 129-131.

⁸⁹ Witmore, “Vision, Media, Noise and the Percolation of Time: Symmetrical Approaches to the Mediation of the Material World,” *Journal of Material Culture*, 11, no. 3 (2006): 283.

⁹⁰ Pallasmaa, *The Eyes of the Skin: Architecture of the Senses* (Chichester: Wiley-Academy, 2005), 39-50.

Multimodal cultural research distinguishes itself from purely auditory studies through its emphasis on the interaction of the senses. Studies such as those mentioned above do not eliminate vision from the picture, as it were, but instead shift the research perspective, widening its scope in order to include both the visual and auditory dimensions of the phenomena under study. In doing so, vision is displaced from its central position. This *audio-visual turn* thus recognizes perception as an inherently multimodal phenomenon, with the senses not only functioning in concert but also interacting with one another as information from across the differing sensory modalities is merged into perceptual experience. Here again, an inclusive turn *toward* the auditory, rather than a vision-excluding turn *to* the auditory, is indicated.

Social anthropologist Tim Ingold, however, illuminates (or perhaps amplifies) the difficulties involved in such a rebalancing of the senses. Ingold, who debunks the common view that ocularcentrism is the cause of the strongly objective tendency in Western thinking, joins Ihde in holding that not only has Western analysis been reduced to a visual paradigm but further argues that vision itself has been reduced through its construal as a detached, objectifying sense. In the process, a dichotomy has been sustained between this detached, error-prone vision and a more directly engaging and inherently veridical audition.⁹¹ However, as he notes:

But there is nothing natural or pre-ordained about this opposition: as often as it is reasserted in academic books, it is belied by our own experience. It is my contention that by exploring the common ground between vision and hearing, rather than by abandoning one for the other through ‘a turn to listening,’⁹² we may

⁹¹ Ingold, *Perception*, 282.

⁹² Here, Ingold quotes David Levin, *Modernity and the hegemony of vision* (London: Routledge, 1993), 3-4.

be guided not only towards a better appreciation of the richness and depth of visual experience, but also towards a more generous, open-ended, and participatory understanding of thought.⁹³

Philosopher of mind Casey O’Callaghan, in turn, emphasizes that though a great deal has been learned about perception through visually-based analyses, studies of perception suffer from “tyranny of the visual” in that visual perception typically serves as the model for understanding not only perception in general but also the other individual senses:

The more or less implicit assumption has been that what we learn about perception by studying vision generalizes to the other sense modalities. Put another way, vision is the representative paradigm of perception and holds the key to understanding the nature and purpose of perceiving. ...The perceptual modalities have been treated as analogous in that, from the perspective of a philosophical account of perception, understanding auditory, tactile, or olfactory perception involves little more than extrapolating or transposing from an account of vision. A line of thought not accidentally related has been particularly strong in the case of the secondary or sensible qualities. The assumption is that as things are with colors, so they are with sounds, tastes, and smells.⁹⁴

O’Callaghan, who develops a novel theory of sonic realism in which the status of sounds as events capable of changing across their duration renders visuocentric accounts untenable for their analysis, is careful to emphasize that though the isolated perceptual modalities may furnish distinct registers of awareness, any complete account of perception requires consideration of the interactive nature of perceptual experience. As he puts it, “...any snapshot that emerges within a specific modality is itself already a

⁹³ Ibid., 287.

⁹⁴ O’Callaghan, *Sounds* (Oxford: Oxford University Press, 2007), 3-4.

multimodal sculpture infused with information shaped by and gleaned from other modalities.”⁹⁵

Given that dance performance is fundamentally an audio-visual art form, it is clear that the interaction of the visual and auditory senses warrants exploration in studies of the production, affect, and reception of dance. Dance studies, however, have historically manifested an ocular bias, with the overwhelming majority of studies focusing exclusively on dance’s visual manifestations. As such, there is a neglect of consideration of the mutual influence exerted by vision and audition in dance performance. In my view, this gap is the result of two factors. Firstly, rather than considering music in Western concert dance in a “piecemeal” fashion with regard to the affective workings of specific dance/music event structures, scholarly analyses of music have tended to view music as a secondary factor, relegating it to a subordinate status either as sonic support to the subject or mood of choreography or as an aspect of postmodern choreographers’ reactionary approach to the musical conventions of ballet and modern dance. When music is considered at all, it is typically viewed holistically rather than at the level of its temporally unfolding structures. Secondly, negligence of attention to sound in dance performance has been perpetuated by the visual bias in critical theory, which resonates in dance studies in the form of engagement with concepts including the gaze, the panopticon, perspectival models of subjectivity, and text as a visual rather than an oral/aural phenomenon.

⁹⁵ Ibid., 180.

The emergence of audio-visual studies as a paradigm for cultural research offers a foundation for the study of dance performance as a multimodal phenomenon and for the interrogation of ocularcentrism in dance studies. Additionally, and critically for this dissertation, this turn both gains support from, and offers support to, the cognitive turn in dance studies described in the preceding section. This broadening of scope, which involves an opening to the auditory and a turn to empirical research, facilitates a productive bridging of scientific and critical discourses.

In what follows, I summarize extant audio-visual approaches to dance research, noting the limitations of current perspectives to the study of contemporary dance choreography in process and performance.

3.2.2 Audio-visual dance studies

Choreomusical research constitutes the predominant stream of audio-visual study of dance. These analyses examine the ways in which dance is fitted to its accompanying music. Early analyses by Émile Jacques-Dalcroze and Fedor Lopukhov reflect the late 19th-century tendency toward music visualization in choreography. Dalcroze, whose methods of musical education rely foundationally on “moving plastic” (*plastique animée*), or exercises in which students produce spontaneous danced representations of music, provide an early example of choreomusical analysis. Dalcroze outlines a series of parallels between music’s structural elements and movement but also indicates the need to reflect music’s emotional affect and movement. As he comments,

There is an intimate connection between sound and gesture, and the dance that is based on music should draw its inspiration at least as much, and even more, from its subjective emotions as from its external rhythmic forms.⁹⁶

Paul Hodgins' 1992 book *Relationships Between Score and Choreography in Twentieth-Century Dance: Music, Movement, and Metaphor* offers a more recent example of choreomusical analysis. Hodgins establishes a hierarchy of two fundamental levels of relationships between movement and music, laying out a detailed choreomusical taxonomy of the possible relationships of the diverse aspects of dance movement and musical sound and applying the model to six key dance works. Hodgins' "first level" of music-movement relations concerns innate perceptual preconceptions governing the experience of relationships between dance and music. His "second level" refers to culturally determined affinities, or as he puts it, "those which require a sophisticated and shared cultural literacy between creator and viewer."⁹⁷ Among the aspects of dance movement Hodgins considers are its gestural dimension, spatial organization, and movement rhythm, while parameters of musical sound include volume, rhythm, timbre, multivocal texture, and others.

Though Hodgins' analysis, like Dalcroze's, is valuable for its componential analysis of musical and movement factors, Hodgins' establishment of a dichotomy of "first" and "second" levels reflects a pervasive view, which, as I have discussed

⁹⁶ Dalcroze, "Music and the Dancer," *Rhythm, Music, and Education* (New York: The Knickerbocker Press, 1921), 296.

⁹⁷ Hodgins, *Relationships Between Score and Choreography and Twentieth-Century Dance: Music, Movement, and Metaphor* (Lewiston, NY: Edwin Mellen Press, 1992), 1.

elsewhere, frames perception as subordinate to the “higher” faculty of cognition,⁹⁸ a hierarchization which is being interrogated within the frameworks of both cognitive and “sensuous” studies. Further, as Fogelsanger notes, the most recent work analyzed by Hodgins dates from 1957.⁹⁹ As such, postmodern experimentation with innovative relations between dance and music remains unconsidered. Finally, Hodgins limits his analysis in this volume to “only those works in which complete and thorough collaboration between choreographer and composer was achieved.” However, Balanchine’s *Apollon Musagete* is included on the basis of Balanchine and Stravinsky’s longstanding collaboration and its later influence on Balanchine’s work with Stravinsky’s music.¹⁰⁰

Recently, Stephanie Jordan has produced several insightful analyses of 20th-century choreographers’ engagements with musical structure. In her extensive research program, Jordan has deftly teased apart the ways in which choreographers including Humphrey Balanchine, Ashton, Tudor, Nijinska, Nijinsky, Bausch, Béjart, and Taylor engage with musical forms. Jordan’s work is noteworthy for its finely crafted historical dimension. For example in *Music Dances: Balanchine Choreographs Stravinsky*, she illuminates evolutions over time within Balanchine’s audio-visual thinking and shifts in

⁹⁸ Freya Vass-Rhee, “Motion / Perception: William Forsythe’s Spectatorial Shifts,” in *Choreographies of Migration, Proceedings of the 39th Conference of the Congress on Research in Dance, Barnard College, New York, November 8-11, 2007* (Congress on Research in Dance, 2008), 206-11.

⁹⁹ Fogelsanger, “Music Composition for Dance in the Twenty-First Century: Questions about the Dance/Music Relationship,” presented at the conference of the International Guild of Musicians in Dance, Stockholm, 1998.

¹⁰⁰ Hodgins, *Relationships*, 30.

the choreographer's stringency with regard to musical constraint.¹⁰¹ Her clearly described analyses achieve a remarkable balance between musical and choreographic analysis, providing an extremely deep level of detail. The aforementioned title is particularly valuable as its documentary format enables the dance-music relationships to actually be seen and heard, rather than only being described, notated, and illustrated in a written volume.

Another program of critical choreomusical research focuses on a phenomenon commonly referred to derogatorily as "mickey-mousing," or musical mimesis through visualization in dance, cartoons, or film. This discourse has arisen primarily in response to the work of postmodern choreographer Mark Morris, whose frequent deployment of exaggerated choreomusical synchrony has divided critical response into two opposing camps. Composer Barbara White suggests that choreographers' and critics' paradoxical responses to mickey-mousing are "less about the resistance to music per se than resistance to the sensations generated by the meeting of music and dance...the *loudness and intensity* [italics mine] we experience when sound and music join together in glorious excess."¹⁰² To explore the dance-cultural response to choreomusical synchrony, White evokes Mickey Mouse as a metaphor: a spectral being existing only in the negative, defining choreomusicality in terms of structures which are avoided rather than those

¹⁰¹ Jordan, *Music Dances: Balanchine Choreographs Stravinsky* (videotape lecture-demonstration) (New York: The George Balanchine Foundation, 2002). See also id., "Agon: A Musical/Choreographical Analysis," *Dance Research Journal* 25.2 (1993): 1-12; id., "Musical Discourse: Method, Music, Theory and Meaning," in *Moving Words: Re-Writing Dance*, Gay Morris, ed. (London: Routledge, 1996), 15-28; id., *Moving music: dialogues with music in twentieth-century ballet* (London: Dance Books, 2000); and id., *Stravinsky Dances: Re-Visions Across a Century* (Hampshire: Dance Books, 2007).

¹⁰² 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 (2006): 66.

which are produced. She further casts attitudes towards music-movement synchrony in sexual terms as a “fear of fusing,” noting music’s seductive influence as an immersing, penetrating percept.¹⁰³ Inger Damsholt, analyzing the choreomusicality of Morris’ 1981 work *Gloria* as a representative example of the choreographer’s choreomusical aesthetic, argues that Morris’s musicality, rather than being reactionary or sentimental as commonly considered, in fact constitutes a “choreomusical polemic” which motivates both new choreographic and scholarly thinking:

Morris’ work not only reinforces the aesthetic of music visualization, but by means of exaggeration and simultaneous choreomusical counterpoint exposes it as a hindrance, a stumbling-block, and a necessary starting point for new creative strategies, establishing the conditions for a new discourse of dance scholarship.¹⁰⁴

Hanna Walsdorf turns to dance performance in cartoons – the form that inspired the term mickey-mousing – to evaluate analytical taxonomies from the disciplines of choreomusical and film music analysis. To frame a comparison of Hodgins’ relational categorizations, described above, with a model for film analysis developed by Georg Maas,¹⁰⁵ Walsdorf notes overlaps and common points of reference, as she analyzes the cartoon dance “divertissement” from Walt Disney’s feature-length film *Fantasia*, in which soloist Hyacinth Hippo awakens, bathes, and performs a dainty variation among a *corps de ballet* of ostriches. Walsdorf ties mickey-mousing to Maas’ category of

¹⁰³ Ibid., 68-73.

¹⁰⁴ Damsholt, “Mark Morris, Mickey, Mouse, and the Choreomusical Polemic,” *ibid.*: 4-21.

¹⁰⁵ Maas, “Filmmusik,” in Herbert Bruhn, ed., *Musikpsychologie. Ein Handbuch* (Reinbek: Rowohlt, 1993), 203-8.

connotative semantics, concluding that analytic tools used for film music analysis also lend themselves to the exploration of choreomusical relations.¹⁰⁶

Like Jordan's analyses, the literature on mickey-mousing investigates choreomusicality at the level of specific forms of organizing structures. The studies of choreomusical synchrony mentioned also provide valuable examples of critical approaches to the study of dance's multimodality. These studies, however, manifest two key limitations that reduce their applicability to the study of postmodern and contemporary dance. The first of these is their limited consideration of sound types in dance performance. While ballet and modern dance choreographies are typically paired with classical and modern musical compositions, the postmodern period saw a wide range of experimentation with regard to dance's sonic scoring, as noted in this study's introductory chapter. Since that period, choreographers have used an enormous range of sound, as well as silence, as accompaniment for their works. Text, improvised scores, and sound collages are now pervasive in contemporary dance choreography, reflecting what Lehmann recognizes as an increased "musicalization" in postdramatic theatre forms.¹⁰⁷ In addition, as I exemplify in Chapters 7 and 8, the sounds produced by the dancers are also in some cases included as an element of the soundscore. Further, classical and modern musical compositions in contemporary dance performances, if used at all, are often fragmented, altered, or overlaid with other soundscore elements.

¹⁰⁶ Wallsdorf, "Minutage und Mickey Mousing. Über das Verhältnis von Ballett- und Filmmusik am Beispiel von Disney's *Fantasia* (1940)," *Kieler Beiträge zur Filmmusikforschung* 3 (2009), <http://www.filmmusik.uni-kiel.de/beitraege.htm> (accessed October 28, 2009).

¹⁰⁷ Lehmann, *Postdramatic Theatre*, 155.

The second limitation of the choreomusical studies above concerns the unfixed relationships between sound and music found in the works of some contemporary choreographers. Merce Cunningham, for example, created a number of works in which the choreography either does not “follow” the accompanying music or, due to randomizing of the order in which musical selections on a program would be performed, are completely unmoored from preconceived musical correspondences. Choreographers also frequently use “drones” or other forms of minimalist music which either lack a discernible meter or whose larger structures are not easily parsed. In addition, some contemporary dance works are performed wholly or partly in silence or to open-ended soundtracks of ambient noise. In the latter instance, the patterning that occurs between the dancing and its accompanying sound is rendered an emergent factor, with synchronies, counterpoints, and other structurings manifesting spontaneously in the moment of performance. I discuss Forsythe’s deployment of silences in detail in Chapter 5 and his inclusion of minimalistic and ambient sound forms in Chapter 6.

A 2006 paper by composer/musician Allen Fogelsanger, co-authored with choreographer and cognitive researcher Kathleya Afandour, applies research on monomodal and intermodal perception to examine the mechanisms that might underpin the perception of relatedness between a dance and its accompanying music.¹⁰⁸ After first analyzing perceptions of music and dance as seeming to “go together” or not, the authors turn to the independent relation of music and dance found in choreographies of the late

¹⁰⁸ Fogelsanger & Afandour, “Parameters Of Perception: Vision, Audition, and Twentieth-Century Music and Dance,” in *Continuing Dance Culture Dialogues: Southwest Borders and Beyond*, Proceedings of the 38th International Conference of the Congress on Research in Dance (Congress on Research in Dance, 2007), 56-65.

20th century, citing Cunningham's use of indeterminately structured scores by John Cage as a milestone in postmodern dance's movement along a "pathway to incongruence." However, as they emphasize, true multimodal incongruence stands at odds with the cognitive tendency to form perceptual unities out of discrete perceptual events that exhibit coincidental structural elements. To support their position, they cite research on the "McGurk effect," in which the pairing of an audio track of a spoken syllable (e.g. "ba") with a video image of a mouth saying a different syllable (e.g. "ga") can lead to the experience of an entirely different syllable being uttered (e.g. "da").¹⁰⁹ The authors speculate that this model of optimal combination of percepts across the senses underpins the phenomenon known as crossmodal "capture," in which sound can influence visual perception and vice versa in more abstract representations, such as the movement or collision of geometric figures. The authors argue that crossmodal capture through perceptual congruencies may also underlie our experience of a fit between sound and movement.

Fogelsanger and Afandour's analysis constitutes a valuable example of how "piecemeal theorizing," the posing of what Deborah Knight refers to as "hard-nosed questions about humbler topics,"¹¹⁰ can inform a dance-historical perspective. The authors eschew a totalizing application of accepted theoretical doctrines in favor of the development of a narrowly delineated question regarding an historically influential development in choreomusicality. As such, this research constitutes a "middle-level"

¹⁰⁹ Harry McGurk and John MacDonald, "Hearing Lips and Seeing Voices," *Nature* 264 (1976): 746-8.

¹¹⁰ Deborah Knight, review of *Post-Theory: Reconstructing Film Studies*, David Bordwell and Noël Carroll, eds., in *Journal of Aesthetic Education* 32, no. 2 (Summer 1998): 109-12.

investigation driven by the specifics of the phenomenon at hand rather than a broad, iterative engagement with one or more theory bases that uses its subject merely as a vehicle to ratify the theories applied.¹¹¹ However, as I argue in this dissertation, the development of cognitive approaches to dance studies can profitably extend beyond the development of alternative paradigms which compete with extant theory bases within the (inter)discipline. While the scope of Fogelsanger and Afandour's paper is limited by its brief format, a valuable next step to this research might be to bring it into dialogue with other approaches to the dance-music relationship, for example, the ongoing discussion of music's primacy over dance based on disparities in their notational histories and Derrida's questioning of the hierarchy of speech and writing.

Though the works considered by Fogelsanger and Afandour have no fixed links to their "elastic" accompanying music besides their common durations, Cunningham's movements and phrases, like those in the studies summarized above, were both set in order and duratively delimited by the "inevitable time" that they were found to take to execute.¹¹² As such, this analysis manifests a further limitation in current audio-visual studies of dance in that it does not include consideration of "elastic" improvisational choreography either on its own or paired with set or variable sound structures. As noted in Chapter 2, Forsythe's choreography is often based on structured improvisational modalities that engender specific tendencies of form, dynamic, and tempi, but no fixed order of steps and often no fixed spatiality. Further, many of Forsythe's more recent

¹¹¹ Bordwell, in Bordwell & Carroll, *Post-Theory*, 26-30.

¹¹² Cunningham, quoted in James Klosty, *Merce Cunningham* (New York, Saturday Review Press, 1975), 24.

works are performed to music scores that are either played live and in response to the danced improvisations or are produced in part or in full by the dancers themselves. Like the choreographies they accompany, these soundscores are also improvised according to specific parameters; however, the precise structure and timing of the score produced is indeterminate.¹¹³ It should be remarked that Forsythe is not alone in his use of improvisation and flexible soundscores. As Fogelsanger and Afandour note, artists including the Judson Dance Theater and Robert Wilson have also been influenced by the Cunningham/Cage collaboration.¹¹⁴ Further, numerous other contemporary choreographers, as well as many other dance genres, use improvised soundscores, improvised choreography, or both.

As the studies above demonstrate, dance is being productively investigated as an audio-visual phenomenon from a number of perspectives that are not mutually exclusive, including structural, cognitive, and critical. However, as I have shown, the literature offers limited support to contemporary choreographic practices due to two limitations. Firstly, current studies reveal a bias toward the study of set choreographic and/or musical structures, while many contemporary dance performances include flexible or improvised sound and/or movement. Secondly, no choreomusical studies to date reflect the broad array of sounds – many of which are not commonly conceived of as music – that occur in contemporary dance performances. Furthermore, these sounds, which include but are not limited to live or taped ambient noise, spoken text and other vocal gestures, and the

¹¹³ Examples can be found in my discussion of the scores of *Three Atmospheric Studies* parts 2 and 3 and *You made me a monster* in Vass-Rhee, “Dancing music: the intermodality of The Forsythe Company, in Spier, *William Forsythe*, 73-89, 82-88.

¹¹⁴ Fogelsanger & Afandour, “Parameters,” 57.

sounds made by performers in motion, are often overlaid in complex, multi-sourced soundscores. This limitation is also reflected in the variety of pedestrian or other forms of action that often occur concurrently in contemporary choreographies. It is with regard to these limitations that I use the term *visuo-sonority* rather than *choreomusicality* in this dissertation. While the concept of *choreography* is of course not limited to set steps and spatial placement, prevailing conceptions of the term align many constitutive actions of contemporary dance works with other categories of behavior. My usage of the prefix *visuo-* is intended to avoid this conception and to indicate contemporary dance performance as a form not limited to the choreographed, as commonly understood. By referring to *sonority* rather than *musicality*, I similarly seek to evoke the expanded repertoire of sound included in dance performances since the postmodern period. As noted in my introductory chapter, this dissertation includes a catalog of Forsythe's work indicating not only their music but also other categories of sound that occur in performance.

Finally, as also indicated in my introductory chapter, no auditory studies of dance to date have investigated what I term *intermodal choreography*, or work in which corporeally generated sounds of the performers constitute a central facet of the overall choreographic organization. Chapters 7 and 8 of this dissertation are devoted to this development in Forsythe's work, though Forsythe is not the only choreographer to include such practices.

In Section 3.2, I have detailed the emergence of the "auditory turn" in humanistic scholarship, pointing out that in many cases, this turn is more aptly described as an

audio-visual turn. As noted, this relatively recent development in scholarship is highly applicable to the study of dance, which is typically analyzed in ways that reflect the ocularcentrist bias in humanities scholarship. I have summarized and exemplified existing approaches to audio-visual study of dance, noting their value in increasing understanding of dance as an multimodal art form but also discussing the factors in contemporary dance choreography and sonic composition which limit their applicability for the study of this sub-genre.

For the purposes of the current study, the research of Fogelsanger and Afandour is of particular value for two reasons. Firstly, the paper addresses an aspect of the choreomusical relationship that is specific to postmodern choreography. By investigating incongruent relationships between dance and movement, the authors open an avenue for consideration of dance's multimodality as an emergent phenomenon rather than one prefigured and codified by the choreographer. In contrast to Cunningham's choreography and stagings, however, intermodal structuring manifests in Forsythe's work as a result not of chance relationships between fixed choreographic temporalities and elastic or randomly ordered musical selections, but through the distributed agency of choreographer, improvising dancers, and often also improvising musicians and/or sound designers. Secondly, Fogelsanger and Afandour's paper is exemplary in that it joins the two approaches foregrounded in this dissertation as productive methodologies for the study of dance in general and contemporary dance in particular. Like Fogelsanger & Afandour, my study's narrow-scope questions are framed by the sonic choreography of a specific choreographer's body of work and develop explanatory models in a piecemeal

fashion with reference to cognitive research. The sonic paradigms on which I focus are silences, sonic overwhelm, minimalist music structures, breath scores, and what I term *vocal choreography*. In addition, my study reflects Fogelsanger & Afandour's analytic application of empirical studies rather than the undertaking of experimental dance research. Similarly, this study differs from the work of Reason & Reynolds and Glass in that it does not carry out ethnographic research on audience response. Like Hagendoorn, I seek to indicate and exemplify the broad range of potential applications of empirical cognitive research in dance studies. However, this study does not attempt to suggest optimal choreographic or staging strategies, as do some of his studies.¹¹⁵ Further, unlike Hagendoorn, Jola & Mast, Hartmann, and others, this study does not focus on neuroscientific studies but instead engages with numerous other paradigms of cognitive research, indicating in the process the breadth of applications that are viable for dance studies. Finally, like White and Damsholt, I seek to illuminate debates over audio-visual choreographic practices by interrogating these practices at a fundamental level. This study also augments these inquiries with a metacritical perspective by analyzing research practices and ideologies within its informing disciplines.

3.3 Chapter Conclusion

This chapter has presented the two research approaches that underpin this study of visuo-sonority in the works and working methods of William Forsythe and his ensemble. I have detailed the history, current research practices, and dance-disciplinary

¹¹⁵ See Hagendoorn, "Cognitive dance improvisation" and "Dance, Choreography and the Brain."

manifestations of cognitive studies, noting resistance from within the humanities and emphasizing the status of the field of cognitive approaches both within cognitive science and within the arts and humanities as a broad plurality coming into increasingly productive dialogue with extant strains of humanistic theory. I have also described the “auditory turn” in humanistic study, outlining its historical basis, the ideological underpinnings of its development, its emerging multimodal research stream, and the forms that audio-visual study of dance has taken thusfar.

My choice of these two approaches is determined by the objectives of this study: to highlight choreographic practice and performance as phenomena that are both auditory and visual, and to demonstrate the efficacy of cognitive approaches for their study. Separately, each of the approaches offers a critique of predominant dance research practices. When joined, the cognitive approaches provide support to the study’s visuo-sonic focus, while the multimodality of the approach provides an alternative to the study of the senses in isolation. Thus, the methodology adopted here is metacritical both in terms of the scholarly turns it draws on and the subject area to which it is applied. Ultimately, I advance the combination of cognitive approaches, understood as a broad plurality, with a visuo-sonic perspective as a highly efficacious mode of research on dance. As noted in this study’s introduction, Forsythe’s works and working methods provide a particularly productive context for demonstrating this efficacy due to the ensemble’s deep, varied, and prolific investigations of the performative potentials of perception. It is hoped that the demonstrations of this approach in this dissertation will

both broaden dance research perspectives and facilitate dialogue between the disciplines of dance studies and cognitive studies.

It will be noted that the cognitive literature referenced in the dissertation is drawn not only from multimodal research but also from purely visual and auditory studies. In addition, this study does not foreground any single paradigm of cognitive research. To cognitive scientists, such an approach may seem unproductively eclectic. However, the range of theories and analytic levels tapped in this study's supporting literature is intended to support my goal of indicating to dance scholars the variety of paradigms and approaches available and the instantiation of applications of this broad spectrum of research to the specific issues taken up in the individual chapters.

In the following chapter, I further detail the methodological and theoretical basis for my study by elaborating the concept of perceptual performativity.

Chapter 4

Perceptual Performativity

In this chapter, I elaborate an approach to the concept of performativity that takes sensory perception as its focus. This conceptualization constitutes a novel direction in performance research in that it specifically and critically focuses on dynamic, situated physical acts of event perception rather than on reflective mental acts of event categorization or interpretation. In the first section (4.1), I summarize the development and movement across disciplines of the concept of performativity. Referencing distinguishing traits of postdramatic theatre delineated by Lehmann, I next propose a dimension of performativity that is rooted in the proclivities and limits of perception, considered both as individual perceptual systems and as a merged system of intermodal perception (Section 4.2). In Section 4.3, I apply this concept by analyzing perceptually performative staging strategies in the 1841 ballet *Giselle* and several works from Forsythe, showing that the application of this concept is not limited to contemporary theatre and choreography. In the next section (4.4), I extend Lehmann's analysis by highlighting postdramatic performativity as both a cognitively and a physically based phenomenon, illustrating how physical processes motivated by sensory uptake and response, which are a prominent feature of Forsythe's choreographic practices, evince a perceptual performativity which supports that of audiences. My analyses in this chapter, which are focused primarily but not exclusively on visually performative instances, provide a first demonstration of the efficacy of this concept for the study of performative

affect in dance. I further support the concept of perceptual performativity in the following four chapters (5 – 8) by analyzing Forsythe’s works and choreographic practices from a visuo-sonic and cognitive approach.

4.1 Performativity: from speech acts to performance studies

The term *performative* was coined by John L. Austin and is first found in a publication of lectures from 1955 that appeared seven years later.¹ Objecting to logical-positivism’s focus of the verifiability of utterances, Austin specified a category of utterances which *act* upon the world, effecting actual change rather than merely having descriptive function. For example, the performative phrase “The court finds the defendant guilty” alters the identity of the subject of the sentence, provided it is uttered under what Austin termed appropriate “felicity conditions” (e.g. the right person, e.g., a criminal court judge, speaking in the right circumstances, e.g., in court). The power of performative utterances is established by their repeated and conventional use within felicitous conditions. As performative utterances cannot be tested for veracity as constative utterances can, they thus cannot be assigned a truth value. Austin in fact held the radical position that since all utterances, including descriptive ones, carry out the act of informing, all utterances are performative. This argument essentially transforms all speech into action.

Among other linguistic scholars who would offer refinements in the area of speech act theory was John Searle, a student of Austin who extended the concept of

¹ Austin, *How to do Things with Words: The William James Lectures delivered at Harvard University in 1955*, J. O. Urmson, ed. (Oxford: Clarendon, 1962).

performativity to other aspects of human interaction, most notably intentionality.

Focusing on Austin's category of illocutionary acts, or acts performed in saying something (for example, making the statement "I will buy you a coffee" is the illocutionary act of making a promise), Searle identified rules regarding content, preparatory conditions, sincerity conditions, and essential (or logic-defining) conditions that utterances must obey.² Émile Benveniste, a linguist who in the 1950s was associated with Jacques Lacan, in turn supported Austin's opposition of constative vs. performative by further specifying performative utterances as self-referential, unique acts of authority that are also acts of naming the act performed and the performing agent.³ It was also Benveniste who rejected the treatment of language as simply a formal system, proposing the speech event as a dialectical relationship that serves to position the speaking subject:

Through the sole act of addressing another, the one who is speaking of himself installs the other in himself, and thereby apprehends himself, confronts himself, and establishes himself as he aspires to be, and finally historicizes himself in this incomplete or falsified history.⁴

Benveniste's studies catalyzed the development of poststructuralism, particularly the "textual" theory of subjectivity as developed by Roland Barthes, Julia Kristeva, Jacques Derrida, and others of the Tel Quel group in the late 1960s. Derrida, whose work is marked by a strategy of both ridiculing and deconstructing speech act theory, initially critiqued Austin's focus on intentionality in a 1972 essay, arguing that because the text can always be detached from the context in which it is written, the intentionality of its

² John R. Searle, *Speech acts: An essay in the philosophy of language* (Cambridge: Cambridge University Press, 1969).

³ Émile Benveniste, *Problems in General Linguistics*, transl. Mary Meek (Coral Gables: University of Miami Press, 1971), 236-237.

⁴ *Ibid.*, 67.

author is irrelevant.⁵ Other poststructuralists, including Paul de Man, Stanley Fish, and J. Hillis Miller also argued at this time for a deconstructive performativity characterized by the dislinkage of cause and effect between signifier and world.⁶ Critiques of Austin's purely linguistic analysis of performativity also include Pierre Bourdieu, who held that Austin's "felicity conditions" are actually social conditions and, as a result, their social, cultural, and political natures must be analyzed as well.⁷

Post-Marxist theorists, by contrast, apply the term performativity in various ways to the social and knowledge dynamics of the postmodern capitalist society. Herbert Marcuse carries out a rereading of Freud in which he delineates the performative as a repressive principle that guides advanced industrial and labor-oriented societies. This "performance principle" demands the sublimation of desire as "libido is diverted for socially useful performances in which the individual works for himself only in so far as he works for the apparatus..."⁸ Given that mass culture also encourages a sublimation of desire, the effect of the performance principle extends even to the private sphere.⁹ For Jean-Francois Lyotard, performativity is the dominant form of legitimation in a world in which a crisis exists because discourses cannot obtain legitimization through reference to meta-narratives or to other discourses. He ties the concept of performativity to knowing,

⁵ Jacques Derrida "Signature Event Context" (1972), transl. Alan Bass, in *Margins of Philosophy* (Chicago: University of Chicago Press, 1982).

⁶ Paul de Man, *Allegories of Reading: Figural Language in Rousseau, Nietzsche, Rilke, and Proust* (New Haven: Yale University Press, 1979); Stanley Fish, "Speech-Act Theory, Literary Criticism, and Coriolanus," *Centrum* 3, no. 2 (1975): 107-11; and J. Hillis Miller, "The Critic as Host," *Critical Inquiry* 3, no. 3 (Spring 1977): 439-47.

⁷ Pierre Bourdieu, *Language & Symbolic Power*, transl. Gino Raymond and Matthew Adamson (Cambridge: Polity Press/Blackwell, 1991), 73. Bourdieu's original essays were published in French between 1977 and 1984.

⁸ Herbert Marcuse, *Eros and Civilization* (Boston: Beacon Press, 1966), 45.

⁹ Ibid.

pointing out that knowledge not only takes the form of denotative statements or scientific knowing but also includes the notions of various types of “know-how” (*savoir-faire*, *savoir-vivre*, *savoir-écouter*, etc.) In *The Postmodern Condition*, Lyotard describes performativity as a quantifiable efficiency principle upon which decisions are always justified.¹⁰ Science and education legitimize their discourses by resorting to a technological performativity in which heightened performance is a factor of increased information. As a result of this dynamic, data ownership becomes a key concern. Foucault elaborates the Hellenistic concept of *parrhesia* as a performative act of truth-telling in which one tells the truth to oneself in parallel, constructs the self in doing so.¹¹ Slavoj Žižek, finally, finds a paradox in the notion of the performative speech act: the speaker/actor is deprived of agency at the moment of utterance by the symbolic institution that essentially speaks through the speaker.¹²

Whereas in speech act theory, the action of the performative is to effect change of recognized state of persons or things, critical theorists hold that performativity is the means by which identity itself is constructed. From the perspective of gender theory, gender is a learned construct determined by habitual practice and by cultural norms that distinguish masculine and feminine behavior. Gender is thus performed to the world as audience and evaluated in terms of that audience’s reception. Judith Butler, whose book *Gender Trouble: Feminism and the Subversion of Identity* launched the discipline of

¹⁰ Jean-Francois Lyotard, *The Postmodern Condition: A Report on Knowledge* (Minneapolis: University of Minnesota Press, 1984), 44.

¹¹ Michel Foucault, *Fearless Speech* (collected essays from 1983), Joseph Pearson, ed. (Los Angeles, Semiotext, 2001).

¹² Slavoj Žižek, “The supposed subjects of ideology,” *Critical Quarterly* 39, no. 2 (1997): 46.

gender studies, argues that though the normative categories reinforced by gender performativity actually become effaced through the processes which generate the discourse, these norms can be undermined in numerous ways, including gender parody and rejection of categorization.¹³ Drawn from engagements with Foucault, Kristeva, Derrida, and others, Butler's concept of identity-based performativity subsequently motivated other varieties of critical analysis including the performativity of class, race, and queerness.

A further social dimension of performativity is explored within the field of economic sociology. Michel Callon, who together with Bruno Latour and others developed Actor-Network Theory in critical sociology, develops a "performativity of economics." As he argues, economics play an agentive and defining role in modern markets and, as such, attention should be paid to what they themselves do rather than exclusively to ways in which economic models capture or fail to capture the dynamics of social relationships.¹⁴ Donald MacKenzie, in turn, draws a distinction between three types of performativity: Austinian, in which the claim is that phenomena become true through their use; the "generic" performativity of a procedure, model, or theory being put to use; and what he terms "effective" performativity, when application of the above "makes a difference" in practice.¹⁵ MacKenzie additionally suggests the existence of a

¹³ Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (New York: Routledge, 1990). Cf. Siegmund, *Abwesenheit*, 269-70.

¹⁴ Michel Callon, "The embeddedness of economic markets in economics," In Michel Callon, ed., *The Laws of the Markets* (Oxford: Blackwell Publishers/The Sociological Review, 1998): 1-57. See also Donald MacKenzie, "The big, bad wolf and the rational market: portfolio insurance, the 1987 crash and the performativity of economics," *Economy and Society* 33 (2004): 303-34.

¹⁵ Donald Mackenzie, "Is economics performative? Option theory and the construction of derivatives markets," *Journal of the History of Economic Thought* 28, no. 1 (2006): 35.

“counterperformativity,” in which the deployment of certain phenomena make them less true (as was manifested in the giant one-day fall of the US stock market in 1987), as well as a strong version he calls “Barnesian performativity” in which the use of an aspect of the phenomenon makes processes of the phenomenon more like their depiction.¹⁶ The vital point of MacKenzie’s position is that

An economic theory or model posits a world, so to speak. It is too simple to ask only if that world is realistic... We must also ask if the widespread use of the theory or model will make the world it posits more real, or less real. If either is the case, we must ask if that world is to be desired or to be avoided.¹⁷

The descriptions above show how the overarching idea of performativity first developed by Austin – that words or other signs are capable of (trans)formative action – has found application in several disciplines. Dialogue has continued across these areas as they have developed, notably Butler’s recent critique of Callon and responses by Callon and others.¹⁸ However, the applicability of some cross-disciplinary transfers of concepts informing the idea of performativity has been put to question. Miller interrogates the fundamental trajectory of this dialogic project within performance studies, drawing an absolute distinction between applications of term performativity within theatrical performance and the performativity of enunciations upon which textual theories of performativity and their derivative critical theories are based. Though recognizing that the ideas initially developed by Austin, Derrida, and Butler all “show the power of words or other signs to do something, to act,” he emphasizes the importance of disambiguating

¹⁶ Ibid., 38, 22.

¹⁷ Ibid., 45.

¹⁸ See contributions from Judith Butler, Michel Callon, Paul du Gay, Christian Licoppe, and others in “Performativity, economics and politics: an overview,” special edition of *Journal of Cultural Economy* 3, no. 2 (2010).

their individual conceptions.¹⁹ Miller establishes distance between Derrida's "exappropriated" concept of performativity and both Butler's performativity of gender and Austin's performativity of speech acts, commenting that under Derrida's analysis, Austin's distinction between felicitous and infelicitous performatives fails to stand because the "iterability" of text (the ability of phrases to be used in multiple situations) makes impossible a complete inventory of the context of any speech act – which in Austin's theory is required for the establishment of felicity conditions. Regarding Butler, Miller remarks that for Derrida, societal coercion to conform to gender norms is in fact "a good thing when it comes as an injunction from the wholly other," as this other has no means of establishing the truth value of any given statement due to lack of identity with the addressed subject. As such, any response to a performative demand is in fact, in Miller's words, a "reciprocal performative."²⁰ Miller calls special attention to Austin's exclusion of theatrical and poetic utterance as forms of "etiologies of language" that constitute a form of pretending. As Austin specifies:

[A] performative utterance...will be *in a peculiar way* hollow or void if said by an actor on the stage, or if introduced in a poem or spoken in a soliloquy
(. . .) Language in such circumstances is in special ways – intelligibly – used not seriously, but in ways parasitic upon its normal use.²¹

This exclusion of theatrical or poetic language, Miller concludes, renders Butlerian performativity within performance studies completely incommensurate with Austin's speech act theory.

¹⁹ Miller, "Performativity as Performance / Performativity as Speech Act," 233.

²⁰ Ibid., 231.

²¹ Austin, *How to Do Things with Words*, 22.

It is without question, though, that the various concepts of performativity described above have been productive for scholars of performance studies, including those who address theatrical performance. Much of this research involves a theoretical mode in which elements of performance – bodies, narratives, stagings, actions – are considered as “texts” and are “read” either as reinforcing iterations or as subversive interrogations of prior practices. This “deconstructive” mining of performances permits the positing of latent structures, motivating critical commentary while simultaneously reaffirming the validity of the theoretical foundations deployed.

However, the construction of the subject can also be illuminated by a different perspective on performance, one which addresses a more fundamental level: the subject as a *perceiving agent* immersed in and interacting with a world of sensory information which, in the case of performance, is composed in ways intended to elicit specific effects and affect. In the following section, I elaborate an approach that aims to develop understanding of performativity from the perspective of perception: how performances are composed as events of sensing, how this composition is constrained by the interaction of perceptual norms and the culturally inflected norms of theatrical presentation and context, and how these normative structures constitute a groundwork for perceptually performative engagements. As I argue below, the distinct physical and cognitive aesthetics of postdramatic theatre render a perceptual perspective especially productive; however, as I demonstrate, this perspective can also be productively applied to analyze historical instances. Further, examples from Forsythe’s staging and choreographic practices show that the construction of the subject as perceiver by and in Forsythe’s

works occurs not only along presentational lines but also reflexively, involving and informing both the performativity of the performer and that of the spectator-auditor, while simultaneously motivating innovative processes of choreographic composition.

4.2 Perceptual performativity

Lehmann, citing substantial shifts in theatre practice and production over the past four decades, recognizes “postdramatic theatre” as a distinct historical genre. He delineates a series of “stylistic traits” which, though not all simultaneously manifest in all productions, distinguish contemporary theatre from earlier paradigms. These are: lack of unambiguous linkage (parataxis), non-hierarchical ordering of signs, simultaneity of sign presentation, play with the density of signs, semiotic overabundance (plethora), enhanced musicalization, visual dramaturgy that is not subordinated to text, an aesthetic of “coldness,” increased physicality and concreteness, irruptions of theatrical frameworks of the “real,” and the staging of performances as situations which draw audiences into involvement.²² For Lehmann, this shift indicates perception as a central issue which has come to the fore as a result of the shift from dramatic theatre, in which narrative and recognition reward audiences with a sense of comprehension and closure, to a theatre form whose presentative styles and techniques render narrative, reference, and smooth, immediate spectatorial assimilation largely or completely absent:

In a frame of meaning that has become porous, sensuously intensified perceptibility comes to the fore (. . .) While mimesis in Aristotle’s sense produces the pleasure of recognition and thus virtually always achieves a result, here the sense data always refer to answers that are sensed as possible but not (yet)

²² Lehmann *Postdramatic Theatre*, 85-107.

graspable; what one sees and hears remains in a state of potentiality, its appropriation postponed. It is in this sense that we are talking about a *theatre of perceptibility*. Postdramatic theatre emphasizes what is incomplete and incompletionable about it, so much that it realizes its own ‘phenomenology of perception’ marked by an overcoming of the principles of mimesis and fiction. The play(ing) as a concrete event produced in the moment fundamentally changes the logic of perception and the status of the subject of perception, which can no longer find support in a representative order.²³

In other words, through postdramatic theatre’s shift from comprehension to a withholding of assimilative possibility, performativity is driven more by the perceptual dynamics of the performance event than by text and dramatic logos. In particular, tendencies to overload the senses with events that lack clearly determined logic and intentionality, along with the intensified physicality and non-referentiality of action, create theatrical experiences that heighten perceptual demand through strategies of sensory resistance.²⁴ In doing so, these conditions confront spectators with a subversion that is fundamentally based on their *performance of perception* – a performance that under normal conditions is so automatic and unproblematic that it itself is not perceived at all. In essence, the perceptual-cultural norms of traditional theatre construct the viewer-auditor as an effortless, all-empowered perceiver by virtue of their clarity and linearity. By contrast, postdramatic theatre specifically troubles this construction, foregrounding the functional norms of perception through the structuring of conditions that call attention to perceptual tendencies and inabilities. In this manner, performances that problematize or deny

²³ Ibid., 99.

²⁴ An interesting comparison can be drawn to Christine Buci-Glucksmann’s analysis of the baroque as an aesthetics of indecipherable surplus, which Martin Jay cites as a visual paradigm that is distinct from late medieval Cartesian perspectivalism and the visually descriptive quality of 17th-century Dutch art. See Jay, “Scopic regimes.”

normative perception draw the failures inherent in the performance of perception into conscious awareness, where, ideally, they will be apprehended and reflected upon.

Postdramatic performance thus confronts the observer at a more fundamental level than those that constitute the focus of extant performance studies. By and large, however, performance studies scholarship ignores sensory perception. In addition, it also tacitly indicates perception as trouble-free and comprehensive by virtue of the descriptive quality of ethnographic writing. As discussed in Chapter 2, the interpretive bias in humanities studies commonly results in the bypass of perceptual analysis in favor of focus on “higher” cognitive functions such as the construction of meaning or the production of emotional affect. When discussed at all, perceptual concepts are commonly deployed as metaphors, a practice in contemporary humanistic scholarship that, as noted, has been critiqued by some science scholars.

Several recent performance studies projects have already foregrounded perception, including “Sense and Sensations: On the Performativity of Perception,” a conference sponsored by Erika Fischer-Lichte’s long-term research initiative “Cultures of the Performative” (Kulturen des Performativen) in Berlin. The conference emphasized the multimodal nature of perception, focusing on a consideration of activities and events rather than texts or artifacts and on the “constructive” relationship of subject-object exchange at the heart of perception. Areas of focus included the perception of space, attention, the perception of time, and vivification/animation.²⁵ Fischer-Lichte has also co-

²⁵ *Sense and Sensations: On the Performativity of Perception*, annual conference of special research area “Cultures of Performativity,” Humboldt Universität zu Berlin, November 11-13, 2004, <http://www.literatur.hu-berlin.de/s&s/> (accessed July 25, 2005).

edited a volume with essays focusing on the topics of authenticity, reflexivity, and attention.²⁶ Since 2007, Pil Hansen, Bruce Barton, and others have developed and applied analytical tools to support what they term “perceptual dramaturgy.” Lehmann’s remarks above, together with my call for a new, perceptually-based approach to performativity, resonate strongly with Hansen’s contention that

Physically-based work often aims to affect the spectator’s sensory experience in ways that do not invite them to synthesize stimuli as dramatic structure, character, or meaning. In response to this characteristic, a need arises for tools to analyze and make strategic choices about the perceptual experience a composition facilitates.²⁷

When considering the performance of perception, attentional awareness and focus is the most critical aspect. Richard Lattó, a cognitive psychologist specialized in vision and the arts, points out that though our perceptual “window on the world” is very narrow, it is extremely well focused, having selectively and economically evolved to facilitate our biological needs being met. As he notes, though in our everyday lives we remain largely oblivious to the limits of perception, two situations make us aware of them. One is a certain class of technologically mediated events, such as when extremely fast vehicles necessitate the mediation of instruments to insure good performance, or the viewing of television, which, knowingly or unknowingly, is commonly designed to match our sensory capacities. The other situation, Lattó holds, is the production of art. Like television, artistic techniques and processes “have developed to match the properties of

²⁶ Erika Fischer-Lichte, Barbara Gronau, Sabine Schouten, and Christel Weiler, eds., *Wege der Wahrnehmung: Authentizität, Reflexivität, und Aufmerksamkeit im Zeitgenössischen Theater* (Recherchen 33) (Berlin: Theater der Zeit, 2006).

²⁷ Pil Hansen, “Perceptual Dramaturgy: *Swimmer* (68),” *Journal of Dramatic Theater and Criticism* 26, no. 1 (Spring 2011): 1-18.

our visual systems.”²⁸ However, in recent years these techniques have more frequently involved exploration and exploitation of perceptual properties, with the aim of producing novel, striking effects. Noting that though both artists and scientists deliberately investigate perception, Latta points out that artists often isolate perceptual properties of interest long before scientists do.²⁹

As ecological film theorist Joseph Anderson argues, our perception of film is best understood by recognizing that our perceptual capacities are a factor of our biological evolution, which in turn is directly influenced by the environment in which we exist. Though Anderson focuses primarily on the veridicality of the filmic image and our ability to follow filmic narrative, his comments can be equally applied to the perception of any art form:

We are and always have been part of a larger ecology. In this interlocking relationship with the larger ecological setting, we developed, through eons of evolution, elaborate and sophisticated capacities to gain information. Today, we interact with [filmic percepts], but we have no new capacities for gaining information from them. We have only systems developed in another time, in another context, for another purpose.³⁰

At the most fundamental level, the dynamics of perception are a dynamics of informational uptake. Survival depends on the ability to rapidly and smoothly gather critical information from the environment through the sensory channels. As such, our perceptual systems – which include not only the sensing organs but also the mobile body in which they are housed – have evolved in selective ways that facilitate this. The eyes

²⁸ Latta, “The Brain of the Beholder,” in Richard Gregory, John Harris, Priscilla Heard, and David Rose, eds. *The Artful Eye* (Oxford: Oxford University Press, 1995), 71.

²⁹ *Ibid.*, 71-2. This view is echoed by Jonah Lehrer, *Proust Was a Neuroscientist* (Boston: Houghton Mifflin, 2007).

³⁰ Anderson, *The Reality of Illusion*, 15.

are highly sensitive to movement and can adjust to a range of light conditions. They move rapidly in a head that also moves rapidly. Not only can our ears detect a great variety of sounds over a wide range of volumes and pitches, they can also parse individual streams out of manifold competing sound sources while continuing to monitor those deemed less salient.³¹

In brief, the visual and aural senses are optimized for clear and rapid uptake, unambiguous discernment of structure and the ramifications of events, and economical maintenance of an efficacious balance between focus on specific percepts and monitoring of the larger environment. This optimization is contingent on the structures of light, physics, and events found under the everyday conditions of the environment and the perceptual activities used to navigate and interact with it. This is true of any organism and its specific niche, or environment in which it is commonly embedded.³² Perceptual proclivities reflect biases towards types of information that are meaningful – in the sense that they are potentially beneficent – to the perceiver. Perceptual limitations, in turn, reflect both the rarity of unusual or extreme conditions and the specifically evolved capabilities of the perceiving agent.³³

³¹ Here I limit my discussion to the distal senses of vision and audition; the proximal senses (olfaction, gustation, and the tactile senses), as well as the internal senses of proprioception and equilibrioception are similarly highly and selectively attuned.

³² Here I use the term *niche* in its ecological sense. For Gibson, an organism's niche is a set of affordances, or behavioral possibilities made possible by the interaction of organism and environment. See Gibson, *The Ecological Approach*, 128.

³³ As numerous studies have shown, these limits and proclivities do exhibit a degree of cultural variance. For overviews of this literature, see William Phillips, "Cross-Cultural Differences in Visual Perception of Color, Illusions, Depth, and Pictures," in Kenneth Keith, ed., *Cross-Cultural Psychology: Themes and Perspectives* (Hoboken: Wiley Blackwell, 2010), 160-180; Joshua Goh and Denise Park, "Culture sculpts the perceptual brain," in Joan Chiao, ed., *Cultural neuroscience: cultural influences on brain function (Progress in Brain Research 178)* (Amsterdam: Elsevier, 2009), 95-111; and Steven Morrison and Steven Demorest, "Cultural constraints on music perception and cognition," in the same volume.

In the following two sections, I apply the theoretical approach laid out above, focusing primarily on visual performativity. In Section 4.3, I discuss the theatrical environment and context, exemplifying ways in which perceptual tendencies and limitations are reflected in both historical and contemporary performative staging practices. In Section 4.4, which is centered on choreographic practices, I examine dance performance as a domain comprehended by audiences not only in kinesthetic but also in perceptual-cognitive terms. As I suggest, the demands of improvisational choreography, particularly when based in perceptual tasks, effect a refining of performer attention that in turn intensifies the engagement of the audience. The examples included are not intended to represent an exhaustive catalogue of performative possibilities, but rather to demonstrate the efficacy of the approach taken.

4.3 Staging performativity

Western theatrical architecture and staging practices can be viewed as technologies intended to facilitate and even enhance visuo-sonic perception. Spectators, seated in dark, tiered auditoriums, view performers in a separate space from a carefully constrained range of distance. Theatrical lighting serves to localize audience attention, illuminate objects and action onstage, and offset the effects of distance, as well as to provide dramaturgical support. Theatrical acoustics are enhanced by the combined architectures of the stage, audience, and orchestral spaces. Electronic amplification is used to augment certain sounds, while thick curtains serve to dampen others, such as those offstage. Stage makeup and selective coloring and styling of costumes facilitate

vision and recognition of characters. Finally, thoughtful staging guides the eyes and ears of the spectator, facilitating attention and sustaining interest in the unfolding events.

Theatrical architecture and practice, however, afford more than just the facilitation of clear perception and attentional ease. The combined physical means of theater also afford opportunities to generate performative affect through the *problematizing* of sensing. This is accomplished by drawing directly on perceptual inclinations and limitations as well as on the distinct physical conditions and perceptual tasks posed by the theatrical environment and context. The theatrical space and event convey an attentional imperative: the fundamental task of the spectator-auditor is, in essence, *to perceive as fully as possible*, taking in composed events if not also to attempting to grasp the intentions of their composer. Once audience members have taken their seats in the auditorium, theatrical convention suppresses both alteration of visual or aural perspective and interaction with events in the stage space. Thus, the physical and social contexts of theatrical performances constrain both perception and behavior, in the process opening possibilities for the manipulation or thwarting of perception. Events can be “hidden” or masked onstage just as they can be highlighted, tension can be built through spatial placement and trajectories or the massing of bodies, actions and sounds, and illusory or confounding effects can be generated by various means. Perception, which is inherently limited and biased, is thus further constrained by the performance environment and context in ways that afford performative theatre practice.

Perceptually performative staging practices are, however, neither a new undertaking nor limited to specific theatrical genres. The production of spatial, temporal,

and rational illusion is in fact a cornerstone of theatrical spectacularity, pervading theater practice across centuries and coming to an apex in Western theatre between the 18th and 19th centuries as lighting technologies permitted support for increasingly phantasmagorical characters and themes. A clear historical example of the performative support of combined theatrical elements is found in passages in “white scenes” in Romantic and classical ballets. To cite a specific instance, the second act of *Giselle* features a passage during which an ensemble of 18 to 26 *wilis* (vengeful spirits of young women betrayed by their lovers),³⁴ clad alike in long white tutus of soft tulle and forming row after row on the stage, appear to glide in a mesmerizing cloud as they slowly criss-cross in *arabesque* poses. The *corps de ballet* actually repeats a slow, rather ungainly hopping slide of the foot commonly known as a “chug” to traverse the stage, maintaining the elongated Romantic *arabesque* pose with as little movement to the body and raised arm and leg as possible. However, the audience’s view of the foot on the ground is obscured by the long tutu skirt, which nearly reaches the floor and casts a shadow when the dancer is in *plié* (with the standing knee bent). The dim lighting of this scene both deepens the skirts’ shadows and masks unintended movement of the dancers torsos and extended legs. The illusion of gliding is enhanced by the repetitive crossing of lines of dancers and the wide, diaphanous silhouettes their costumes produce in the *arabesque* pose. Finally, the durative nature of the crossings is underscored by the repetitive $\frac{3}{4}$ rhythm the accompanying music, while a slowly building *crescendo* further contributes to

³⁴ In the original 1841 production of *Giselle*, choreographed by Jean Coralli and Jules Perrot, 32 *wilis* *corps* dancers are indicated. See Marian Smith, *Ballet and opera in the age of Giselle* (Princeton NJ: Princeton University Press, 2000), 215.

the affect of the passage. Directors of this work will take great care in refining all these aspects – lighting, costume length, musical tempo and dynamics, number of dancers and spacing between them, depth of *plié*, and execution of the “chug” step – to insure that the performative quality emerges with maximum impact.

This passage, together with others at the opening of the ballet’s second act, dramaturgically establishes the *wilis* as a nebulous, supernatural force. The eye, taxed by the homogeneity of the white field of *wilis* crossing in the dim light, perceives them as a dense, blurred unit rather than as a group of individual dancers. Later in the act, the same performative devices are put into deadly action as the *wilis* join hands, incline their heads toward the leading arm, and run in a rapid, dizzying circle around their haplessly trapped victim Hilarion. Visually engulfed, Hilarion frantically leaps in the midst of the white blur.

It is worth noting here that the blurring perceptual effects of both passages described here have their maximum effect on audiences seated on the same level as the performers or only slightly elevated – traditionally, the positions occupied by the highest class of patrons. Indeed, on raked (slanted) stages, the midline of the stage is brought into a closer optical line with the “royal box” at the center of the lowest balcony.³⁵ However, the number of *wili corps* members, the materials of their costumes, and their formations insure that those seated in balconies or at the sides of the ring of box seats also experience a perceptually performative effect from the scene.

³⁵ The Salle Le Peletier where *Giselle* was premiered, like many European theaters of the period, featured a raked stage, a flat orchestra seating section, and a low first balcony containing box stalls and a large royal box at center. After the beginning of the 20th century, orchestra seating sections were more frequently raked and stages constructed without a rake.

In *Giselle*'s second act, as in many dance works predating the contemporary period, perceptually performative effects are used for dramaturgical support or to contrast other dynamics of action onstage. In the postdramatic theatre, by comparison, perceptual performativity reaches extremes, becoming a central subject of works rather than supporting performances geared toward narrative comprehension or catharsis. Whether working in traditional or in innovative theatrical spaces and performance contexts, postdramatic directors tap the same performative potentials as did their predecessors to produce tension and affect: the diversion or confounding of attention. Working deftly with light and darkness, sound and silence, plethora and absence, and comprehension and incomprehensibility, they craft events which call on the spectator to engage deeply and critically not only on an intellectual/interpretive level, but crucially on a physical level with their own performance as perceivers of theatrical action.

A revealing comparison can be made between the examples from *Giselle* and the fourth part of Forsythe's *Impressing the Czar* (1988), which carries the title "Bongo Bongo Nageela." The approximately 7-minute *wilis* dance is separated into passages of varying melody and tempi, usually separated by brief interludes. The *corps* of *wilis* performs in unison, forming lines, pairs, and circles, and leaving the stage or posing in rows at its sides during brief solos by the lead soloist and two *coryphees*. Only one phrase of choreography is performed at a time, whether by the group or soloists. The similar physiques and identical costumes, hairstyles, and facial expressions of the women encourage viewing of the *corps* as a whole rather than focusing on individual members. Hilarion's death scene creates a strong counterpoint, with the *wili corps*' unison dancing

competing for attention with Hilarion's desperate attempts to escape and the *wili* queen's chilling, authoritative stillness. "Bongo Bongo Nageela," by contrast, commences with a "corps de ballet" of 30 male and female dancers, identically clad in bobbed pageboy wigs and schoolgirl costumes, dancing ceaselessly for the first six minutes of a percussive synthesizer variation of a Beethoven *presto*.³⁶ A wildly diverse 7-group fugue of popular and camp dance fragments resolves into irregular canons of *arabesques sautés*, the Watusi, and high kicks moving in swift concentric circles around the prone body of "Mr. PNut" at center stage. As they circle, solos, duets, and trios emerge simultaneously and unpredictably. The multicentrism of this dance is extreme, as is the individual execution by performers. The schoolgirl costumes and wigs fail to mask gender differences, provoking more prolonged focus on individual *corps* members. Both eye and ear become exhausted by the unrelenting fullness of visual and sonic structure.

As shown by these descriptions and my analysis, both *Giselle*'s 2nd act and Forsythe's "Bongo Bongo Nageela" are characterized by affect that is perceptually performative. It could even be said that "Bongo" makes overt reference to choreographic devices in *Giselle*'s 2nd act and "white scenes" in other ballets. However, whereas *Giselle*'s 2nd act features intermittent passages of perceptually-based affect, such as the "chug" section described above, in Forsythe's dance this affect is unrelentingly sustained. Extreme, dispersed multicentrism and rapid, unexpected shifts of choreographic phrases and formations produce an overwhelming taxing of perception across virtually the

³⁶ Ludwig van Beethoven, *Opus 131*, string quartet no. 14, fifth movement.



Figure 4.1 Tapping limits of visual perception: The Paris Opera Ballet in the “chug” scene of *Giselle*, 2nd act and the Royal Ballet of Flanders in “Bongo Bongo Nageela’s” opening fugue. Photos: Syltren, Dominik Mentzos.

entirety of “Bongo’s” 15 minutes.³⁷ As such, perceptual performativity is a central aspect of the dance rather than an element that alternates with less perceptually demanding choreography. “Bongo,” with its driving physicality and unremitting plethora of action, thus exemplifies Lehmann’s delineation of these as dominant traits of postdramatic theatre.

Multicentricity is in fact a hallmark of Forsythe’s works, where it has taken a wide variety of forms. Several sections of works, including *Impressing the Czar* and *ALIE/NA(C)TION* (1992), feature scenes in which the stage is visually or architecturally divided down the middle, with different and contrapuntal events occurring simultaneously on both sides. Dancers share the stage with printed texts or timekeeping devices in numerous pieces, while in others, screen images compete for attention with live performers.³⁸ In *Kammer/Kammer* (2000), most notably, several screens hang above both the stage and audience space, displaying sections of the performance as they occur. The live versions of some of these sections are directly visible to audiences, while others occur in spaces that are partially or completely blocked from view by walls or other barriers that form “chambers.” In the more recent *Heterotopia* (2006), which is performed in large, non-proscenium spaces, differing choreography is performed in two rooms simultaneously before an audience at liberty to move between them.

³⁷ The pause that breaks “Bongo Bongo Nageela” into two parts at 6’20” is necessitated by the exhaustion of the dancers. Interesting from the perceptual perspective I elaborate in section 3.4 and later in Chapter 6 is the fact that at the start of the ensuing slower section, the dancers wiggle the fingers of their raised hands while staring at them, “trancing out” as they recover their breath. Discussion with ballet master Glenn Tuggle, 15 June 2008, Frankfurt am Main.

³⁸ For comprehensive views of Forsythe’s use of new media technologies, see Kerstin Evert, *DanceLab. Zeitgenössischer Tanz und Neue Technologie* (Würzburg: Königshausen & Neumann, 2003); and Nik Haffner, “Zeit erkennen,” in Siegmund, *William Forsythe*, 133-44.

The simultaneous presentation of multiple and widely distributed centers of visual information is a form of perceptual obstruction. Though the eyes are capable of extremely rapid movement between targets and of “zooming in” to focus on small spatial ranges,³⁹ focused vision is believed not to exceed a maximum spatial range of three degrees, or approximately the width of one’s thumb when held at arm’s length.⁴⁰ Obviously, if distance from the stage space is increased, as in when viewing from seats far back in an auditorium, more of the stage space and the figures in it will “fit” into the maximum area of focus. Increased focal coverage thus comes at a cost of reduced detail. Nonetheless, the possibility of allocating simultaneous attention to multiple targets, along with the level of attention that can be achieved (e.g. detailed viewing of multiple components vs. extracting “the gist” from complex visual scenes) remain matters of current dispute.⁴¹ It appears likely, though, that simultaneous detailed focus on multiple attentional loci onstage is only possible by relinquishing focus on one target for another. Thus, attentional targets produce an obscuring effect on competing ones. Due to the speed and ease with which eyes move from target to target, as well as to the density of salient visual targets with which we are typically faced, we are commonly unaware of three factors: the limited spatial range of visual attention, the effort put forth in moving the eyes, and the

³⁹ See C. Eriksen, and J. St James, “Visual attention within and around the field of focal attention: A zoom lens model,” *Perception & Psychophysics* 40, no. 4 (1986): 225–40.

⁴⁰ R.P. O’Shea, “Thumb’s rule tested: visual angle of thumb’s width is about 2 degrees,” *Perception* 20, no. 3 (1991): 415-8; and C. Groot, F. Ortega, and F.S. Beltran, “Thumb rule of visual angle: a new confirmation,” *Perceptual and motor skills* 78, no. 1 (1994): 232-4.

⁴¹ Bert Jans, Judith Peters, and Peter De Weerd, “Visual spatial attention to multiple locations at once: The jury is still out,” *Psychological Review* 117, no. 2 (2010): 637-682; and Kyle Cave, William Bush, and Thalia Taylor, “Split Attention as Part of a Flexible Attentional System for Complex Scenes: Comment on Jans, Peters, and De Weerd, *ibid.*: 685-695. See also additional commentary articles from both research groups in the same volume.

perceptual work of attending to multiple targets. In highly multicentric attentional environments such as the scene from “Bongo Bongo Nageela” described above, however, all three of these factors are scaled up into overt experience by virtue of the physically and cognitively taxing conditions and the duration over which they occur. Thus, such compositional structures tap jointly into the perceptual proclivity to optimally maximize informational uptake and the physical and cognitive limitations of perceptual performance.

As indicated in Chapter 2, Forsythe problematizes audience vision through other more obvious strategies of visual obstruction. In a number of early works, areas of almost complete darkness render performers either completely invisible or barely visible. In one of these, *Enemy in the Figure* (1989), a rolling klieg light placed near dancers “bleaches” them out of view or briefly blinds spectators when panned across the auditorium. An undulating wooden wall, placed on a diagonal near center stage in this work, periodically obscures dancers as they pass behind it or vanish into pockets of black shadow created by the rolling klieg light. Several costume pieces in this work are covered with black fringe, which obscures the forms of the dancers’ bodies as they move. In the second version of *The Loss of Small Detail* (1991), dancers are obscured through a variety of means including dense snow, strobing darkness, illumination only by pools of small points of light, and backlit screen projections which reduce performers to silhouettes. In other early works, the stage space is opened into the wings and performers dance beyond the proscenium arch, visible only to spectators at one extreme side of the auditorium or the other. In recent works presented in spaces other than proscenium stage environments,

choreography and staging prompts audience members, who are not confined to seats, to change positions in order to attempt to improve or increase their view. In the second part of *Endless House* (1999), as well as in *You made me a monster* (2005), the performers share the space of the large hall with the audience, dancing among and behind them, while scenic objects provide further occlusion. All of these strategies make comment on perception in traditional staging conventions.



Figure 4.2 Problematizing vision: *Enemy in the Figure*, Bavarian State Ballet. Photo: Charles Tandy.

In essence, performative staging practices carried out in postdramatic theatre, including those described here as well as many others, effect periodic complications of

vision which, in fostering awareness of perception by manifesting its limits and innate tendencies to the spectator, provide conditions in which the perceptual experience of theatre may be *re-cognized* and reassessed. In postdramatic theatre, this becomes a precedential aim. As Forsythe comments in a 2001 interview,

...if you're looking at something very hard, if you're trying to watch very carefully because it's somewhat obscured, you tend to be a more careful viewer, to ask 'what are we doing there?' Are we teaching people the aesthetics at hand? No, we're teaching them about watching, about being a viewer. I'm not trying to refine someone's taste, I would like to make people who watch dancing better dance viewers.⁴²

The language used by Forsythe here is notable as it indicates a specific focus on the sensing actions of perception – its performance – rather than on the reflective processes of interpretation. Forsythe specifically foregrounds the *embodied experience* of perceptual limits as a means to reveal the experience of perception to spectators and thereby prompt them toward deeper, more fully aware spectatorship.

Additionally, Forsythe's language, as also Lehmann's comments above, reflects the tendency to focus almost exclusively on visual staging strategies. However, postdramatic theatre also demonstrates a broad range of engagements with the performative potentials of sound. Audio technologies facilitate both a seemingly unlimited palette of possibilities to alter live or recorded sounds, as well as the production of densely layered scores of music, text, ambient noise, and other elements.

Developments in amplification technologies allow sonic components to be localized and moved in ways that enhance attention to space and create extreme intimacy. Theatrical

⁴² Forsythe, "William Forsythe In the Middle," interview with Julie Copeland, <http://www.abc.net.au/arts/default.htm> (accessed May 27, 2005).

sound, in effect, has been decoupled from its sources in the most radical and plural of senses. As such, Lehmann holds, postdramatic theatre possesses an “auditory semiotics” that is independent from its visual manifestations.⁴³ This independence opens opportunities for the generation of distinctly *visuo-sonic* performativity informed not solely by the individual channels of visual and auditory perception but also by the ways in which the two systems interact with and influence each other. Like the visual compositional strategies described thus far in this chapter, performative soundscores not only tap the limits and proclivities of the auditory perceptual system, but, critically for my study, also interface with the economies of perception generated by the visual staging in Forsythe’s works. This is the focus of Chapters 5-8 in this study, in which I show how these reflect commonalities and differences across vision and audition and discuss the ramifications of studying performativity in dance from a visuo-sonic perspective.

To summarize, theatrical architectures and technologies, together with the received cultural parameters of the theatrical event, provide conditions for perceptually performative staging practices. As my analysis of *Giselle* act 2 and “Bongo Bongo Nageela” shows, perceptual performativity is not a new phenomenon but one that has taken a more prominent role in postdramatic theatre, rendering the form more perceptually taxing than preceding genres. In Forsythe’s stagings, obstruction emerges as a key strategy, taking the form not only of concrete obstruction of vision but also perceptual obstruction caused by the simultaneous, irregularly timed presentation of multiple and spatially distributed centers of action.

⁴³ Lehmann *Postdramatic Theatre*, 91.

4.4 Choreographing perception: the senses in concert

A further means by which perceptual performativity is engendered is rooted in the equation of spectator and performer. Watching others perform, whether in the theater or whether carrying out tasks in everyday life, we have an innate kinesthetic link to the agency, intentionality, and effort of their actions, as well as to the physical and perceptual capacities of their bodies. As Hagendoorn aptly suggests, this kinesthetic comprehension, along with the subjective reactions it potentially invokes in viewers, is as much a factor of choreography as the formal composition of movement:

A choreographer will continue adjusting a piece until every aspect has been fine-tuned to its desired perceptual and emotional effect. The feelings experienced by the audience are therefore in part prefigured by the choreographer.

From this it follows that the feelings embedded in a choreography can be regarded as a function of the properties of the brain mechanisms that give rise to these feelings. I would therefore like to suggest that what is composed in a choreography is at once the material—movement—and the sensation it entails, first and foremost a sensation of movement, but extending to other feelings, events and contingencies. Choreography could thus be defined as the two-way merger of movement and sensation, whereby movement passes into sensation and vice versa.⁴⁴

It bears elaborating that kinesthetic comprehension (or ‘kinesthetic empathy,’ as it is commonly called) is a subjective phenomenon, varying as a factor of the encultured and enacted experience of the perceiver. This comprehension contributes strongly to the aesthetic development of dance forms. For example, spectators watching ballet dancers, whose training gives them a great degree of physical flexibility, often make comments to the effect that high extensions (lifts of the leg) produce a great deal of pain. Dance in pointe shoes is equally held by many to be excruciating – a view that is iteratively

⁴⁴ Hagendoorn, “Some Speculative Hypotheses,” 104.

reinforced by the stock imagery of bleeding toes found in many popular dance movies. While not claiming that such projections are entirely erroneous, I suggest that their *intensities* are nonetheless grounded in the embodied knowledge of the individual spectator and, as such, do not necessarily reflect the actual experiences of the performers. What results, in the end, is a range of potential response which the choreographer – him or herself a perceiver and usually a dance practitioner – projects and within which makes compositional choices.

For Lehmann, bodies in postdramatic theatre, and particularly those of dancers, are bodies taken to the edge of their physical capabilities:

The dramatic process occurred *between* the bodies; the postdramatic process occurs *with/on/to* the body... While the dramatic body was the carrier of the agon, the postdramatic body offers the image its *agony* (. . .) In dance we find most radically expressed what is true for postdramatic theatre in general: it articulates not meaning but energy, it represents not illustrations but actions... Previously unknown or hidden energies seem to be released from the body. It becomes its own message and at the same time is exposed as the most profound stranger of the self: what is one's 'own' *terra incognita*. [following translation mine]⁴⁵ This is the case whether the extremes of what is bearable are explored through ritual cruelty or when phenomena that are alien and uncanny to the body are brought to the surface (of the skin): impulsive gesticulation, turbulence and tumult, hysterical twitching, autistic disintegration of form, loss of balance, falling and deformation. Modern dance produced a bodily expression which would articulate extreme psychological states through hypertensions and hysterical arcs. In postmodern dance, this mechanism returns, simultaneously augmenting the fragmentation of the dance vocabulary.⁴⁶

Lehmann's choice of language clearly alludes to postdramatic dance's employment of improvisational processes. In recognizing these, however, Lehmann evaluates

⁴⁵ "...sei es, daß in ritueller Grausamkeit das Extrem der Erträglichen gesucht oder das dem Körper von sich aus Unheimliche oder Fremde an die (Haut-)Oberfläche getrieben wird. Der modern Tanz schuf sich in Überspannung und hysterischen Bögen einen Körperausdruck, der extreme seelische Verfassung zu artikulieren vermochte. Im postmodernen Tanz kehrt die Mechanik zurück und steigert sich zugleich die Fragmentierung des tänzerischen Vokabulars." *Postdramatisches Theater*, 371.

⁴⁶ Lehmann, *Postdramatic Theatre*, 163.

improvisational practice here solely in terms of its physical manifestation. Drawing a connection to pathological images of cruelty and suffering which informed modern dance aesthetics, he reads improvisation as movement marked by failure: inability to compose gestures and formal configurations and to modulate reflexive actions.

What bears emphasis here, and what Lehmann neglects to recognize, is that improvisation involves not only specific physical skills but also deeply and performatively involves the perceptual and cognitive capabilities of its performers. “Thinking in motion” is a demanding *performance of perception-in-action* which involves radical division of attention between body and world within a domain of radical possibility. The moving dancer becomes an improvising agent in a field of potential movement structures that are released from habitual combinatoric patterns into a space of choice of response.⁴⁷ As such, the dancer, engaging with both known form and the emergent and manifold possibilities of the new, is confronted not only with their physical limits but also with the limits of their cognitive capabilities. It is this cognitive demand of improvisation that renders it a liminal performance form in which the dancer becomes both producer of, and respondent to, unfolding structure and new, unpredictable possibilities. An improvisation that succeeds along these lines does not necessarily manifest as a visual aesthetics of accomplishment, control, and logic. The performativity of improvisation unmoors comprehension, moving it away from registers of recognition and assimilation and toward emergent, unpredicated experience. Spectators are

⁴⁷ Compare Frederike Lampert’s comments on the overcoming of habitual patterns of dance in *Tanzimprovisation: Geschichte, Theorie, Verfahren, Vermittlung* (Bielefeld: transcript Verlag, 2007), 135-142; and Lampert, “Tanzimprovisation auf der Bühne: Entdeckung von Nicht-Choreografierbarem,” in Gabriele Klein and Christa Zipprich, eds., *Tanz, Theorie Text, Jahrbuch Tanzforschung 12* (Münster: LIT Verlag, 2002).

confronted with a domain of action whose parameters are more intrinsically indecipherable than fully choreographed and categorizable forms of dance.⁴⁸ That improvisational dance is typically discussed in terms of physically manifested failure is a further indication of the dominance of visual comprehension and the relative lack of recognition of the cognitive skills involved.

Nonetheless, viewer comprehension of dance intrinsically involves projection of both physical effort and sensory and mental effort – in other words, not only *kinesthetic comprehension* but also *perceptual-cognitive comprehension*. This is particularly the case when improvisation is motivated by sensory experience and response, a process mode which has increasingly and diversely informed Forsythe's choreographic processes, performance aesthetics, and dramaturgies since the late 1980s. As noted in Chapter 2, Forsythe's ensembles' development and analysis of movement modalities which heighten, alter, or probe the limitations of the performers' perceptual and cognitive states and capacities constitutes a sustained and multifaceted program of choreographic research on the performance of perception and cognition. Recurring subjects of choreographic inquiry have included and continue to include real, illusory, or even purely theoretical visual, aural, proprioceptive, and tactile sensing, non-normative states of

⁴⁸ Improvisational movement often visually reflects its heightened cognitive demand by appearing less deliberate (or, as some put it, "fuzzier") than choreographic structures that are known and familiar to performers. When rehearsing choreographies that contain both through-choreographed sections and improvisations, Forsythe often instructs the dancers to "make the choreography look like improvisation and the improvisation look like choreography. This selective tuning of the intentionality with which dancing is performed deliberately and performatively effaces visual distinctions between choreography and improvisation.

consciousness. Further, individual choreographic tasks are typically compounded⁴⁹ and inter-referenced in an iterative process as the performers develop expertise within the task constellations and as these reveal their aesthetic and performative potentials. Thus, the devised modalities, which serve as productive means for generating movement and performance structure, are also ends in themselves in exploring and extending choreographic affordances.

Though much of Forsythe's work has evinced less of a visual connection to balletic form over time, his ensembles' development of improvisational modalities often involves extrapolation of perceptual aspects of ballet technique. One of the earliest of these, for example, follows from the balletic principle of *épaulement*, which is explained in Chapter 2. Experimenting with *épaulement*, Forsythe and the ensemble elaborated a process they refer to as *disfocus*, in which disorienting counter-rotations of the head create interference with the habitual coupling of visual and proprioceptive information. As a result, the dancer moving in this modality necessarily becomes more directly reliant on an instinctual proprioceptive responsiveness to the movement event. Movement produced in this perceptual modality has a strikingly distinct visual character, appearing simultaneously fragile and empowered. Regarding the deployment of this modality in his work *The Loss of Small Detail*, Forsythe explains:

The focus in *épaulement* is very important: the angle of the eye forms a sort of axis for the movement. So if you move your head in a sort of oblique counter-rotation to the movement, it engenders a kind of physical blindness which intensifies your proprioception and causes your sense of gravity to shift . . . By discussing, and approaching this point where your ability to see your own limbs,

⁴⁹ Forsythe has used the term "upgrade" in reference to this increased multitasking. Rehearsal, November 30, 2011.

your surroundings is severely impaired, you can no longer dance the way your body has been trained to as a ballet dancer. It's not that you destroy the foundations – you just end up in an opposing state of support . . . the small detail that is lost is your physical orientation. Your body gives up one kind of strength, but another kind comes into play.⁵⁰

An interesting comparison can be drawn between Forsythe's modality of disfocus and Lee & Aronsen's 1974 "swinging room" experiment, in which toddlers or adults were placed standing in a room whose floor was stationary but whose "box" of walls and ceiling could be moved backward and forward. The visual flow patterns created when the room was moved elicited responsive swaying in subjects in spite of information from the proprioceptive and vestibular (inner ear organs contributing to the sense of balance) systems. In the case of toddlers, the effect was so pronounced that it often resulted in children falling over.⁵¹ In Lee & Aronsen's experiment, subjects stabilize the visual percept by shifting the body backward and forward in response to the looming or retreating of the walls, disattending to proprioceptive information in the process. In the disfocus modality, by contrast, the visual perceptual field is intentionally destabilized and brought into discord with proprioceptive information. In both cases, however, movement is elicited by deliberately generated conditions. The sway and fall of the experimental subjects are productive for the experimental condition in that they constitute overt evidence of both the merged nature of the orienting senses and the overriding power of visual information, while they provide Forsythe with a novel visual aesthetic, a physical dramaturgy, and a means of investigating movement and perception. As a result, Gilpin's

⁵⁰ William Forsythe quoted in Sulcas, "Kinetic Isometries," 8.

⁵¹ D.N. Lee and E. Aronsen, "Visual proprioceptive control of standing in human infants," *Perception and Psychophysics* 15 (1974): 529-532.

observation that “Failure and falling...are retrieved and valorized as intrinsically necessary and equally valid structural components of classical dance”⁵² applies equally to the “swinging room” research parameter.

My comparison of findings from a choreographic modality and those from empirical research provides a clear example of how Forsythe’s exploration of processes that inhere in dancing both constitutes perceptual research and corroborates with empirical studies on the same. In addition, it points out the differences in application of such movement research within the distinct activities of practice-based arts research and empirical research. As such, it provides a first demonstration of the efficacy of the approach I take in this study. As my investigation foregrounds visuo-sonority in Forsythe’s works and choreographic methods, I will not elaborate further on this example here.

Forsythe’s choreographic exploration of sensing has also involved forms of sensation and perception that are more finely specified than the classical senses. Some improvisational modalities rely on varieties of haptic or somatosensory perception, for example the sensing of the temperature or movement of the air on the skin, or the localized sensations of skin stretch. In other cases, sensing is executed in non-normative ways. In one scene in *I don’t believe in outer space*, execution and visual aesthetics are affected by such a perceptual task: as dancers prepare over and over to grab black balls of gaffer tape that litter the floor, first focusing intently but then kicking the balls away just before grasping them, the performers “shear” their vision sideways when focusing on the balls, trying to see the ball out of the “corner of the eye” rather than centering the eyes in

⁵² Gilpin, *Failure*, 188. See also Gilpin, “Aberrations,” 122, and id., “William Forsythe,” 6-11.

their sockets. Not only does this task result in more realistic misses of the balls, it also causes dancers to stumble out of their attempts and balls to wildly careen across the stage.⁵³ In still other modalities, sensory imagery is evoked in irrational but choreographically productive ways. For example, in a scene in *Heterotopia*, one performer was asked to imagine seeing or smelling with an eye or nose which traveled across the surfaces of her body, while also creating areas of warmth or coldness with parts of her body and placing or transporting these throughout the performance space.⁵⁴ Further, the ensemble has also investigated at least one mode of perception that falls outside of common Western categories of sensing. Since 2005, The Forsythe Company has regularly hosted Akira Hino, a master teacher of *budō* who works with the company on sensing the body's *ishiki* – a concept which defies translation but which is associated with energy, consciousness, or mind – and developing the ability to sense and connect with the *ishiki* of others.⁵⁵ The collaboration with Hino-Sensei profoundly affected the dramaturgy and choreography of the work *Three Atmospheric Studies*, which was premiered in 2005 and further developed over the following season.

Forsythe's perception-based improvisation modalities thus require of their performers an enhanced *perceptual expertise* – increased awareness of the sensitivity and full range of abilities of the sense organs and heightened, honed engagements with both real and imaginary sensory possibilities. Through modalities which demand intensified

⁵³ Fieldnotes, November 17, 2008.

⁵⁴ Fieldnotes, January 17 and 21, 2008 and June 20, 2009.

⁵⁵ Akira Hino delineates *budō* as a fundamental philosophy underlying martial arts practice. Forsythe Company member Yoko Ando's description of Hino-Sensei's work can be found at <http://art-budo.hino-budo.com/art-budo/Contact-between-Budo-and-dance.htm> (accessed June 9, 2011). See also Waterhouse, "Dancing Amidst," 156-7.

and sustained attention, often across multiple sensory modes, the perceptual abilities of the performers are refined and expanded in much the same way that movement is refined in dance techniques. As a result of these processes, the dancers' *performance of perception* is optimized and diversified. Ideally, for Forsythe, it becomes a central facet of performance, one that in turn heightens and focuses audience attention. In an interview in 2008, Forsythe, discussing *Three Atmospheric Studies*, remarks:

We're only interested in one thing, which is basically *the quality of attention*. So the performers only have one real directive...and that's to stay in the situation – pay attention to the other person. That's all they have to do. But their larger job is to focus your attention...You see things differently. So I'm interested in the nature of attention and of collective attention, and that part of it, more than anything, is *what we try to tune* [italics mine].⁵⁶

In order to achieve this parallel heightening and focusing of audience attention, it is of crucial importance to Forsythe that the dancers' presentation of their performance of perception remains clear and constant. Extreme concentration on improvisational tasks easily leads to "introspective" dancing, in which the eyes avert as the dancer focuses on sensation. To counter this tendency, Forsythe encourages the dancers to maintain strong visual contact with their attentional targets. This strong and very visible gaze provides vectors of attention that audiences read not necessarily for meaning but in a search for causality and intention. Contrapuntal patterns of attention and movement response among dancers further support the sustaining of attention, even as it is divided by the multicentricity of action. In Chapter 6, I discuss how the innate proclivity to follow the attentional performance of others is deployed as a deceptive performative device that physically informs dramaturgy by heightening tension and suspense.

⁵⁶ William Forsythe, Michael Klien, and Steve Valk, post-performance discussion, Dublin, April 18, 2008.

Over the last decade, the sense of audition has gained increasing prominence as a focus of Forsythe's choreographic research. This development is a logical extension of the choreographer's view of dance practice as a form of *visual musicianship*. As he discusses:

We inherited a significant dilemma in so far as Balanchine provided paradigmatic examples of musical interpretation through his sublime musicality and expertise.

At the start of my career, in Stuttgart, it was imperative that I used the orchestra, and I made ballets to Handel, to Bach, to Penderecki, Hans Werner Henze. I was fortunate to have that situation and I worked my craft according to those conditions. When I began to work in Frankfurt, it became clear to me the orchestra would never rehearse our work enough to provide the kind of excellent musicianship I wanted, so I distanced myself from that. And if one acknowledged that one didn't have exactly the same skills as Balanchine, where would the function of musicality reside, and how would it express itself for other choreographers?

For me, the answer seemed to be that musicality resided finally, inherently, in the bodies of the dancers. So dancers can be – although they don't have to be – musical but autonomous from the received practices of musicality. And actually, that particular approach actually echoes the cohesiveness that musical ensembles must have in order to realize a work of art. We perform the same kind of synchronized organization but without that written score. Dances are in their own way *visual musical objects* as much as symphonies are acoustic musical objects. The difference is that my instrument is the body [*italics mine*].⁵⁷

Forsythe's more recent engagements with the musicality of dance practice have involved not only perception of and response to the external aural environment but have extended to include the production of sound by performers. In a number of pieces, Forsythe's dancers in effect become visuo-sonoric "instruments," exploring the affordances of

⁵⁷ William Forsythe, "Did Forsythe Invent the Modern Ballerina?" interview with Roslyn Sulcas, *The Informer*, Classical TV (2009), <http://www.classicaltv.com/the-informer/did-william-forsythe-invent-the-modern-ballerina> (accessed Oct 13, 2009).

simultaneous visual and sonic performance. Instances of this auditory performance frame my analyses in Chapters 7 and 8.

In sum, I emphasize that postdramatic theatre practice foregrounds not only the physical but also the cognitive limits of performers, particularly when choreographic modalities are based on perceptual experience. Improvisational practice evokes a heightening of performer attention, as do perceptually based modalities such as those Forsythe continues to investigate and employ. This intensified attention, which becomes a central subject in postdramatic presentation, heightens and focuses audience attention in turn, particularly when improvisational response across different sensory channels is choreographed “in concert” and when *the performance of perception* is emphasized. Our innate tendency to monitor and follow the attention of others opens avenues for perceptually performative choreographic practices. The enhanced sonic technologies and increasing focus on sound in postdramatic theatre afford highly nuanced engagements with sonic, as well as visuo-sonic, perceptual performativity. This is particularly true for dance due both to its history as a musically accompanied form and to the innovative approaches to sound in dance that have been explored not only by Forsythe but also many other choreographers.

4.5 Chapter conclusion

In this chapter, I have suggested perceptual performativity as an alternative approach to analyzing theatrical affect. After discussing the introduction and disciplinary transfer of the term performativity, I have noted that sensory engagement, like other

phenomena that are the focus of performativity theories, has enactive power in that it constructs the subject as a perceiving agent. In Section 3.2, I suggested that the increased role of perception in postdramatic theatre calls for a new analytic approach rooted in the proclivities and limitations of sensory perception and focused on the ways in which perception motivates performativity. In Section 3.3 I discussed how theatrical architectures and enculturated norms of behavior provide a platform for perceptually performative staging practices. My comparison of scenes from *Giselle*'s "white scene" and "Bongo Bongo Nageela" demonstrates the viability of this concept for both historical and contemporary analysis. Turning to Forsythe's choreographic practices in Section 4.4, I point out that not only kinesthetic but also perceptual comprehension play a role in spectatorship of movement performance. The examples provided support my contention that performativity in postdramatic theatre is underpinned not only by physical performance but also by perceptual performance.

As this chapter has, shown, perceptual performativity offers a perspective that permits a productive dialogue across the disciplines of performance studies and cognitive studies. Further, as shown by my comparison of Forsythe's modality of disfocus and Lee & Aronsen's "swinging room" experimental paradigm, this perspective reveals parallels and differences between performing arts practice and research in experimental psychology. As such, perceptual performativity enables meta-commentary about disciplinary practices themselves. Additionally, this dialogue also provides the groundwork for the inclusion of other extant perspectives on performativity such as those described in the chapter.

Though the concept of perceptual performativity as described and applied in this study is not critical by necessity, it does have potential critical applications. A first demonstration is offered by an early critical reference from Roger Copeland that evokes the concept of perceptual performativity. Discussing Merce Cunningham's de-centering of space and de-linkage of choreography and soundscore, Copeland argues that Cunningham's work has a "moral dimension" in that it indicates to the spectator-auditor that their engagement with the world is a matter of choice of focus:

Cunningham refuses to tell us what to look at or listen to. We may decide to "background" or "turn off" a sound so as to focus more intently on the movement...Or we may cultivate a skill John Cage calls "polyattentiveness" – the simultaneous apprehension of two or more unrelated phenomena...Above all, the relations we establish between diverse stimuli are flexible; we can radically alter our mode of perception several times in the course of a single performance (. . .) Cunningham's work may not *symbolize* anything; but it does serve an end beyond itself: that of *perceptual training*. The importance of Cunningham's work lies not only in what we're given to see and hear, but in *the way we see and hear what we're given*.⁵⁸

In addition, a perceptual approach offers a means through which other performative discourses, particularly those grounded in sensory metaphors, can be questioned and potentially refined. Further, as the physical environment, social context, and economy of theatre all figure in the generation of performativity, a perceptual-performative view of theatre as grounded in economies of perception and expectation offers dialogic potential with spatial, social, and political discourses on theatre. However, a focus on the "surface" of performances – their content in terms of individual and composed percepts – and on the physical-perceptual processes which constitute action in performance – does not

⁵⁸ Copeland, "Merce Cunningham and the Politics of Perception," in Copeland and Marshall Cohen, eds. *What is Dance? Readings in Theory and Criticism* (Oxford: Oxford University Press, 1983), 321-2.

undermine or replace other critical forms of performativity but is instead a different lens through which to view – or, to use a sonic metaphor, a different wavelength upon which to tune in to – dance’s affect and impact.

With regard to Forsythe’s staging practices and choreographic modalities, this chapter has shown the pervasiveness of perceptual performativity and its extensions to the makers, performers, and audiences of his works. As I have further emphasized, Forsythe’s perceptual performativity, as that of all performative manifestations of dance, is intrinsically *visuo-sonic*, involving not solely the isolated senses but also deeply implicating the merged nature of sensory experience. In the following four chapters, specific sonic paradigms in Forsythe’s works and choreographic methods frame and support my argument for increased analytic attention to sound and to the interactions of vision and audition in dance analyses. In tandem, they demonstrate the efficacy of a cognitive analytic approach to dance studies.

Having grounded and delineated the concept of perceptual performativity, I demonstrate its viability in my analyses of visuo-sonic categories in Forsythe’s works in the following four chapters.

Chapter 5

Sound the spectacle I: hush and silence

5.1 Introduction

As Erlend Lavik notes, the concept of the spectacle, which first became a prominent theoretical subject following the publication of Guy Debord's *Society of the Spectacle* in 1967, is "something of a buzzword within a number of academic disciplines."¹ Dance theory is among the areas in which the concept of spectacle has found significant traction as a subject of critical discourse. However, four decades later, the term remains poorly defined, and its analysis is commonly restricted to negative evaluations of the societal effects of "spectacle" as a general concept. In theoretical and journalistic writings on dance, it is typically applied to performances as an overall class of event rather than being viewed in terms of specific instances. While considerations of dance-as-spectacle are of value in their own right, I hold that the study of dance's spectacularity should not be limited to categorical analysis of dance performance as an event at large, but should also focus at the level of individual events within performances which are perceived as evincing spectacular qualities. In this, I take a middle-level approach as advocated by Bordwell and explained in Chapter 3.

In this chapter, I probe the perceptual experience of danced spectacle by analyzing the sonic and visual structuring of scenes within larger works by Forsythe in

¹ Lavik, "The battle for the blockbuster: discourses of spectacle and excess," *New Review of Film and Television Studies* 6, no. 2 (August 2008), 170.

which significant periods of either substantially reduced sound, which I term *hush*, or profound, uninterrupted silences engulf the stage. Analyzing instances from a range of works spanning Forsythe's tenure as house choreographer of the Stuttgart Ballet and as director of the Ballett Frankfurt and The Forsythe Company, I show how such moments of quiet, in tandem with the choreography's movement qualities and spatiality, generate experiences of heightened attention and anticipation which constitute one form of spectacular experience. As such, *hush* and silence are deployed by Forsythe as arresting devices which afford reflection on the performance of perception. As I emphasize here, Forsythe's differing performative compositions of *hush* and silence demand a more detailed consideration of silence in dance performance, while also indicating a need for cognitive studies of silences as sonic events in their own right.

My objectives in this chapter are threefold: first, to analyze the perceptual effects of silence and abrupt shifts of sound volume from a cognitive perspective; second, to reveal how these effects are underscored by Forsythe's choreography at these moments; and third, to develop an explanatory model for the spectacular affect of such instances in dance performance. In this chapter, I bring theoretical observations from dancers, choreographers, and music and film theorists into dialogue with cognitive research on attentional capture and sustainment, event structure, and embodied philosophy in order to interrogate beliefs about the impact of silence in dance performance and to deepen the discourse on spectularity by providing an explanatory model for these specific manifestations. Such an analysis offers benefit to dance and performance studies, cognitive studies, and perception-based philosophy alike.

By approaching the spectacular experience of from a cognitive perspective, I turn away from the common “top down” mode of interpreting societal effects of “the spectacle” in favor of approaching spectacular affect at a sensory level. As such, my inquiry constitutes a *sounding*, not of *the* spectacle as a larger class of event but of individual instances of spectacular perceptual experience. By comparing and analyzing the sonic and visual structuring of specific types and instances of choreographed spectacle in a “piecemeal” fashion, rather than interrogating spectacle as a politically charged category of event, I seek to reveal perceptual and cognitive processes which determine the experience of the spectacular and the ways in which Forsythe taps the perceptual effects of these processes to deploy spectacularity as a performative device.

My consideration of the audio-visual spectacularity of *hush* and silence is divided into three sections. Before presenting the data, I reference Michel Serres’ sensory philosophy and the ways in which we describe spectacular affect to reframe spectacularity as a sonic-tactile phenomenon (section 5.2). After discussing the modal and analytic limitations of extant theories of the spectacle, I open section 5.3 by reviewing modern and postmodern choreographers’ observations on the effects of silence on perception in dance performance, focusing on Doris Humphrey’s paradoxical assessment. I then delineate two distinct conditions of *hush* in Forsythe’s *oeuvre*: unaccompanied works or sections of works that are punctuated by sound, and accompanied works in which abrupt musical cessations occur (section 5.3.1). In this section, I interrogate the common conception of silence as an absence of sound and show how Forsythe joins movement with shifts in the sonic environment to heighten and focus

attention. In the following section (5.3.2), I consider instances of absolute onstage silence, noting choreographic differences between these instances and those described in the previous section. I conclude the chapter by discussing the need for cognitive study of silence's effect and affect and the role that dance performance can play in such research (section 5.4).

5.2 Background

Aristotle uses the term *opsis* to define the spectacular aspect of theatre. The etymology of both *opsis* and *spectacle* specify the concept in terms that are purely visual. The former term can be traced beyond the Latin verb *spectare*, to view or watch, to the Proto-Indo-European root **spek-*, to observe, while *opsis* has at root the Greek word *ōps*, or eye, which in turn is derived from the PIE root **oqw-*, to see. However, though no sonic referent exists for the concept of spectacle, many types of aural experience are popularly considered to be instances of sonic spectacle, including monumental classical compositions, virtuoso musical performance, recording and reproduction technologies like Phil Spector's "Wall of Sound" and Dolby Surround Sound, special effects in film, and the sounds of natural or man-made disasters. The experience of silence can also be spectacular, as Vivian Sobchack points out in reference to the paucity of dialogue and long silences in science fiction films such as Douglas Trumbull's *Silent Running* (1972) and Stanley Kubrick's *2001: A Space Odyssey* (1968).²

² See Sobchack, *Screening Space: The America Science Fiction Film*, 2nd. ed. (New York: Unger, 1993), 159, 175.

The language of the experience of spectacular events, by contrast, reveals both a lack of visual terminology and a bias toward the tactile and visceral. The spectacle is said to *captivate* (take), to *seduce* (lead away), to *entrance* (take across), or to *thrill* (penetrate). Michel Serres' philosophy of deeply mingled senses offers insight into the phenomenology of spectacular experience by describing the explicit anatomical connection between the aural and tactile senses. As he comments,

We hear through our skin and feet. We hear through our skull, abdomen and thorax. Our body-box, strung tight, is covered head to toe with a tympanum. We live in noises and shouts, in sound waves just as much as in spaces...Plunged, drowned, submerged, tossed about, lost in infinite reverberations and making sense of them through the body (. . .) The body remembers its previous aquatic life, guiding itself through the sound waves by instinct and force of will. Humanity in shoals swims through these waters.³

As Serres points out, our tactile and aural senses are linked by our phylogenic history. Though we are seldom aware of it, we, like our aquatic ancestors, hear not just with our ears but also with our skin and our interior organs because we are immersed in sound, surrounded and responsive to the waves that travel through the air in the same way that fish are responsive to the vibrations that travel through water. Sound, quite literally, *moves us*.

Plato was mistrustful of the power of spectacle, construed as a visual phenomenon, to move audiences. While the allegory of the cave in Plato's *Republic* offers no concrete theory of the effect of spectacle, Plato argues that images exert a deceptive power over the non-philosopher, hindering the discernment of the Form of Good, which he held to be the supreme form of illuminating knowledge that enables man

³ Serres, *The Five Senses: A Philosophy of Mingled Bodies*, trans. Margaret Sankey and Peter Crowley (orig. *Les Cinq Sens*, Editions Grasset et Fasquelle, 1985) (London & New York: Continuum, 2008), 141.

to distinguish absolute truth and goodness.⁴ Though Aristotle does not indicate theatrical performance as an art form to avoid as Plato did, he relegates spectacle (*opsis*) and song/melody (*melos*) to the bottom of a hierarchy of six determining components of the tragedy, subordinate to plot (*mythos*), character (*ethos*), thought or theme (*dianoia*), and diction or speech (*lexis*). As he comments:

The Spectacle has, indeed, an emotional attraction of its own, but of all the parts, it is the least artistic, and connected least to the art of poetry. The power of Tragedy, we may be sure, is felt even apart from representation and actors. Besides, the production of spectacular effects depends more on the art of the stage machinist than on that of the poet.⁵

It is worth noting that in this hierarchy, Aristotle specifically devalues the sensuous, visuo-sonic elements of theatre (speech, melody, and spectacle). In 1882, Friedrich Nietzsche would echo both Plato's mistrust of theatre and Aristotle's favoring of the "higher" aspects of art, decrying the consumption by "everyday souls" of the spectacle of

...music and art...[of] the kind that tries to intoxicate its audience and drive it to the height of a moment of strong and elevated feelings (...)What would those people know of 'higher moods' were there no intoxicating substances and whiplashes of ideals!"⁶

Almost a century after Nietzsche's comments, Debord's landmark publication opened a new theoretical avenue by retooling Marx's proposals on the accumulation of production in consumer society as an accumulation of spectacles. In his analysis, the spectacle constitutes an ideological reflection of a larger capitalistic structure: "The spectacle is not a collection of images; it is a social relation between people that is

⁴ Plato, *Republic* (380 B.C.), transl. Robin Waterfield (Oxford: Oxford University Press, 1993), 514a-520a.

⁵ Aristotle, *Poetics* (355 B.C.), transl. Samuel Henry Butcher (Mineola NY: Dover, 1997), 13-4.

⁶ Nietzsche and Bernard Williams, ed., *The Gay Science*, transl. Josefine Nauckhoff (Cambridge: Cambridge University Press), 86-7.

mediated by images.”⁷ Central aspects of modern life such as mass media and advertising mask the degradation of capitalism by inducing belief in the artificial version of reality that they present. Debord admittedly represents “the spectacle” primarily as an abstract concept, and because of this, as Lavik notes, his ideas have permitted diverse interpretations and applications to a wide range of phenomena.⁸ Debord’s political analysis of spectacle has indeed been applied not only by numerous other poststructuralist theorists⁹ but also in the areas of media theory,¹⁰ critical film theory,¹¹ visual studies¹² and ethnomusicology (Jacques Attali, discussed in more detail in Chapter 6), as well as dance studies. Analyses of dance performance as spectacle are largely guided by the work of feminist film scholars, most prominently Mulvey’s influential analysis of the male

⁷ Debord, *The Society of the Spectacle* (1967), transl. Donald Nicholson-Smith (Detroit: Black & Red, 2000), 12.

⁸ Lavik, “The battle,” 170.

⁹ See for example Michel Foucault, *Discipline and Punish: The Birth of the Prison* (New York, Random House, 1975); and Jean Baudrillard, *Simulations*, transl. Paul Foss, Paul Patton, & Philip Beitchman (New York, Semiotext[e], 1983).

¹⁰ See for example Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York: Signet, 1964); Roland Barthes, “The World of Wrestling,” in *Mythologies*, (St. Albans: Paladin, 1976), 15-25; Jonathan Crary, “Eclipse of the Spectacle,” in *Art After Modernism: Rethinking Representation*, Brian Wallis, ed. (New York: The New Museum of Contemporary Art, 1984); and Jonathan Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture* (Cambridge, MA: MIT Press, 1999).

¹¹ See for example Jean-Louis Baudry, “Ideological Effects of the Basic Cinematographic Apparatus,” *Film Quarterly* 28, no. 2 (Winter 1974): 39-47; Laura Mulvey, “Visual Pleasure and Narrative Cinema,” *Screen* 16, no. 13 (Autumn 1975): 6-18; id., “Afterthoughts on “Visual Pleasure and Narrative Cinema, inspired by King Vidor’s *Duel in the Sun*” (1981), in *Visual And Other Pleasures* (London: Macmillan, 1989), 29-37; Vivian Sobchack, *Screening Space: The American Science Fiction Film*, 2nd ed. (New York: Ungar, 1993); and Geoff King, *Spectacular narratives. Hollywood in the age of the blockbuster* (London and New York: I.B. Taurus, 2000).

¹² See John Berger, *Ways of Seeing* (London, Penguin, 1977); Douglas Kellner, *Media Culture* (London and New York, Routledge, 1995); WJT Mitchell, *Picture Theory: Essays on Verbal and Visual Representation* (Chicago: University of Chicago Press, 1995); Jay, *Downcast Eyes*; and Jacques Ranciere, *Le spectateur émancipé* (Paris: La Fabrique, 2008).

gaze, which in turn has provided a base for numerous critiques of gendered and/or raced dancing bodies as spectacle.¹³

These essays offer valuable insights into the roles that different facets of identity may play in the viewing experience of dance and into dance performance as a class of spectacular event. Further, they tacitly signal the perceptual effects of spectacular events by noting their power to capture and hold attention. However, the studies listed above display and perpetuate the overwhelming bias towards visual analysis which, as noted in Chapter 2, has long marked the humanities. The studies focus on spectacle as a visual phenomenon, with the exception of Attali, who, in considering music, almost completely elides the visual. This visual bias, which has strongly influenced investigations of the spectacularity of performing “bodies,” whether female or male, minority raced or not, dancing or engaged in other activities, casts these bodies, along with the environments (with)in which they (inter)act, as silent, or at the very least indicates that the sounds of bodies and spaces are of little or no consequence. This may in part be attributable to the tendency of research on sound in dance and film to center on music as accompaniment either to dance or to film’s visual action.

The predominance of vision as a perceptual analytic paradigm downplays the power of sound to generate spectacular affect, when in fact sound seems to have the upper hand over sight in this regard due to the differing structures of the auditory and

¹³ See for example Ann Daly, “The Balanchine Woman: Of Hummingbirds and Channel Swimmers,” *The Drama Review: TDR* 31, no. 1 (Spring 1987): 8-21; however, cf. id., “Feminist Theory Across the Millennial Divide,” *Dance Research Journal* 32, no. 1 (Summer 2000): 39-42. See also Ramsay Burt, *The male dancer: Bodies, Spectacle, and Sexuality* (London & New York: Routledge, 1995); Susan Manning, “The female dancer and the male gaze: Feminist Critiques of early Modern Dance,” in *Meaning in Motion*, Jane Desmond, ed. (Durham NC: Duke University Press, 1997), 153-66; and Sally Banes, *Dancing Women: Female Bodies on Stage* (London & New York: Routledge, 1998).

visual sense organs and the differing natures of visual and auditory attention. Vision presents the perceiver with a perceptual field that, though precisely localizable, delivers only a segment of the field's totality. Objects within the visual field are only individually accessible, competing for attention by virtue of factors like salience or occlusion. Sound, by contrast, surrounds and assails the perceiver, immersing them in a perceptual field whose physical contours are less clearly discernible. As Steven Connor aptly points out, "The space of hearing is not ungoverned in comparison to the space of the eye; but it is differently governed."¹⁴ Ong further explains, "Sound situates man in the middle of actuality and in simultaneity, whereas vision situates man in front of things and in sequentiality."¹⁵

Vision and audition differ as well in terms of the perceptual agency they afford. Because the spatial scope of vision is narrowly limited, we can control our exposure to events through physical actions like averting the gaze, closing the eyes, or turning away. By contrast, the auditory perceptual channel is permanently open and receptive, even in sleep. Though we can to some degree influence what we hear through selective allocation of aural attention, we cannot physically close or avert our ears as we do our eyes, unless of course we use our hands. The sonic is a watery and more volatile field in which co-present sound-objects impinge ceaselessly, altering and blending with each other in ways that are to a great extent beyond our agentive control. Recent attention to this difference,

¹⁴ Connor, *Dumbstruck: A Cultural History of Ventriloquism* (New York: Oxford University Press, 2000), 15.

¹⁵ Ong, *Presence*, 128.

as I point out in Chapter 3 of this study, has motivated renewed philosophical and phenomenological inquiry into the nature of our experience and agency in the world.

In addition to the tendency of analyses grounded in vision to ignore the power of the sonic, such essays often consider specific instances within larger events only in order to buttress “top-down”¹⁶ applications of broader discourses. Rather than attempting to explain how the affective style manifests in the *métier* or instance in question, such studies instead focus on advancing critical perspectives rather than considering the phenomena as subjects in their own right. In my analysis in this chapter, I turn away from the “loftier” concerns which inform the research programs following from Debord in favor of a “bottom-up” approach, analyzing and comparing visuo-sonic composition of specific moments of performance and grounding their performativity in research on perception from across a spectrum of cognitive approaches. I accomplish this through piecemeal explanation of perceptual conditions and cognitive proclivities that underlie specific moments of spectacular experience.

Finally, because the studies mentioned take a single perceptual modality (commonly, vision) as their analytic paradigm, they fail to address how information from across differing senses shapes perception and indeed provides aggregative impact through the mingling of the senses that is perception. Serres’ analysis above, in which the senses are conjoined within the topology of the body’s skin, organs, and substance, stands at odds with monomodal analytic paradigms as well as with the tendency to prioritize the visual as a perceptual paradigm. As I discuss below and elsewhere in this dissertation,

¹⁶ See Bordwell, *Post-Theory*, 21.

Forsythe regulates both the scope and focus of attention and the intensity of perceptual experience by specifically crafting the coordination of visual and sonic information. Such choreography of audience attention, I believe, lies at the heart of both spectacular and performative experience.

5.3 *Hush* and silence

5.3.1 Spectacular touch: punctuated *hush* and caesurae

The performative potential of silence has been explored by numerous postmodern choreographers, many of whom were influenced by John Cage's use of silence as a compositional element (which in turn was motivated by Robert Rauschenberg's "white paintings").¹⁷ Sally Banes and Noël Carroll, commenting on silence and stillness in Merce Cunningham's *Walkaround Time* (1968), note that these "render [the work] fixed, static, highly legible, and transparent."¹⁸ Steve Paxton's slow or seemingly still choreographies, many of which are performed in silence, also tap the ability of silence to enhance focus on the detail of movement. Yvonne Rainer's multiple scores for her work *Trio A*, which have included silence, Wilson Pickett's hit song "In the Midnight Hour," and a recording of a lecture about the piece itself,¹⁹ can in turn be viewed as comparative experiments on the effects of silence and different sound accompaniments in dance. More

¹⁷ See Cage, *Silence: Lectures and Writings* (Middletown: Wesleyan University Press, 1961).

¹⁸ Banes & Carroll, "Cunningham and Duchamp," in Banes, *Writing Dancing in the age of postmodernism* (Middletown: Wesleyan University Press, 1994), 117-8.

¹⁹ Sally Banes, "Yvonne Rainer: The Aesthetics of Denial," in *Terpsichore in Sneakers: Post-Modern Dance* (Middletown: Wesleyan University Press, 1997), 52-3.

recently, Jonathan Burrows notes the affective force of silence, commenting “Silence is no more neutral than nudity.”²⁰

Writing a decade before the postmodern turn in dance, modern dance pioneer Doris Humphrey explicitly cites unaccompanied dance as having this effect:

...the dance without music – the absence of sound on a program which is otherwise ear-filling in musical opulence – has a contrary effect to that which might be expected. It does not seem empty, or as though the bottom had dropped out, but increases concentration and attention to movement to an astonishing degree (. . .) the original point, that dance can stand alone, has been proved over and over, but the main virtue of the silent dance is its power to simplify concentration and rest the ear. After a section or a whole dance with no music, sound is new again and fresher than if it had been continuous.²¹

Humphrey’s indicates a twofold perceptual shift in which dance without sonic accompaniment heightens attention to the visual and “refreshes” the experience of hearing. As I argue, such events are experienced as spectacular moments.

While the presence or absence of musical accompaniment are perceived by many to affect levels of visual attention to dance, a comparison of analyses reveals conflicting views about whether dance to music or dance in silence enhances attention to the visual. Barbara White, discussing the negative view toward exaggerated choreomusical synchrony or “Mickey mousing,” notes that though sound and movement percepts are quite diverse, music and dance inevitably shape and enhance attention to each other when they are combined. However, for White, it is music rather than the absence of music that enhances visual perception. As she comments,

Music erases the sounds of the dance while *allowing us to see the movement more clearly* [italics mine], and the dance, while drawing our eyes away from the

²⁰ Burrows, *A Choreographer’s Handbook* (London & New York: Routledge, 2010), 184.

²¹ Humphrey, *The Art of Making Dances* (Princeton: Princeton Book Company, 1959), 142.

orchestral pit toward the stage, highlights the sounds for us. Each offers something, and each offers something up. At certain moments they seem to meet, and at others they seem to be relatively disinterested. Like the individuals who bring the works to life, they support, challenge, and reshape each other, mutually.²²

As White rightly points out, although we are accustomed to considering dances without music as being “silent,” bodies in motion typically make discernible sounds as they move, even if only the quiet sounds of breath or footfall. In her analysis, unaccompanied dances which highlight the “‘natural’ sounds of the body” either through the elimination of music or through amplification of the sounds that dancers make when performing do in fact create a score in which the sound is both “fused” to the movement and distinct from the dancing in awareness.²³ As I discuss in detail in chapter 7 of this dissertation, in some of Forsythe’s works these sounds are emphasized or amplified to become the compositional elements of “breath scores.” In the following section, I consider sections of works that, in spite of the presence of the “natural,” unaugmented sounds of dancing, are perceived of as being performed in silence. An exemplary review of *The Room As It Was* (2002) by Sheila Orysiek reflects this paradoxical perception:

The "music" is silence. Since the women had on pointe shoes we were given the treat of silent pointes. There is a lesson in this for some classical ballet companies with problems muting pointe shoes. Never once did I hear pointe shoe connect with the stage. However, bare legs in pointe shoes lays bare the physical scaffolding that make the shoes work (. . .) My attention was drawn to these details because my attention had to be drawn to something. The only other alternative was constantly flailing arms, unflagging percussive movement, countless hip swivels, contractions and twists. Another layer of "interest" were

²² White, “‘As if,’” 80.

²³ Ibid., 79.

(sic) *the pantings, gruntings and martial arts gusts of vocalizations from the performers.*²⁴ [italics mine]

As Orysiek's assessment illustrates, dance without musical accompaniment is sometimes considered "silent" performance in spite of the presence of ambient performer sounds onstage. Her comment ratifies White's observation that "We are so accustomed to the absence of, or our own lack of attention to, the sounds dancers make that it is possible to describe a music-less dance piece as being 'silent.'"²⁵

Choreographed instances of complete silence, which are quite rare within Forsythe's works, are discussed separately in section 5.3.2 below. Here, I draw a contrast between absolute silences and events of what I term *hush*, analyzing two distinct conditions in Forsythe's *oeuvre* which, though not technically silent, are marked by absences or cessations of musical accompaniment and by extremely *reduced* sonic volume relative to other passages of the works. In the first of these *hushed* conditions, lack of accompanying sound is presented as the primary condition, with works or longer sections of works performed without continuous music but punctuated by spoken text, brief musical gestures, or other sounds. One of Forsythe's earliest works, *From the Most Distant Time* (1978), begins with 27 minutes of extremely slow movement in a silence that is periodically broken by the voice of an unseen speaker reciting Tang dynasty poems. The silences between the brief poems last approximately two and a half minutes each. The work concludes to György Ligeti's 16-minute *Double Concerto for Flute and*

²⁴ Anjuli Bai (Sheila Orysiek), review of Ballett Frankfurt mixed bill, June 12 2004, Orange County Performing Arts Center, Costa Mesa CA, http://www.ballet.co.uk/magazines/yr_04/jul04/ab_rev_ballett_frankfurt_0604.htm (accessed September 12 2010).

²⁵ White, "'As if,'" 79.

Oboe. In the 1995 work *Firsttext*, created for the Royal ballet of London and credited as a co-creation by Forsythe, Dana Caspersen, and Anthony Rizzi,²⁶ sections of rapid, silent dancing in sock-covered ballet slippers are marked by the sounds of performers' sporadic hand slaps to the floor and limbs, before almost imperceptible fragments of a Bach cello concerto enter the sonic framework, followed by searing, metallic gestures by Thom Willems. *The The*, created by Forsythe and Dana Caspersen that same year, is a 14-minute work for two women danced to a recording of Dana Caspersen periodically saying numbers and times with quiet ambient noise in the background.²⁷

In the second condition, musical accompaniment or patterned sound breaks off and recommences unexpectedly as the dancers continue to move. Forsythe's witty 1996 *Trio* begins in silence, with the three performers executing an extended *accelerando* and *crescendo* of counterpointed displays of different areas of skin on their bodies. The lilting string quartets by Beethoven and Berg that accompany the 13-minute work break off again and again at the ends of phrases, then begin again moments later, while the dancers continue to twine and display. The 2008 version of *Yes We Can't* begins with a series of musical cutoffs of a loud, threatening motif reminiscent of a strongly amplified double-bass as dancers enter and exit, performing high-energy dance passages or serving as moving vocalizers at two microphones. One of these cutoffs, for example, is cued to the entrance of a female performer who repeatedly trajects herself into the air and lands silently on one foot with one hand touching the floor, joining two male performers

²⁶ During the period from 1993 to 2001, Forsythe occasionally credited other ensemble members or the dance ensemble as a whole as co-choreographers.

²⁷ Dana Caspersen, personal discussion with the author, October 9, 2010. The numbers and times spoken by Caspersen are elements of the timescore on which the piece's structure is based.

onstage making “squishy” gesticulations and sounds into microphones. Their broad gestures continue until she collapses onto a small rectangular mat, at which point the rumbling bass motif cuts back in, other performers enter, and the scene continues. Other musical caesurae are marked by occasional and extremely quiet high bell tones that gently punctuate the silence as in the first condition described above.



Figure 5.1 “Silent” spectacle: Elizabeth Waterhouse soars as Ander Zabala and Christopher Roman “squish” in *Yes We Can’t* (2008). Photo: Dominik Mentzos.

When the presence of music is anticipated by audiences but not provided, or when ongoing music suddenly stops, attention to the soundscape increases, along with arousal and suspense. Jeff Smith comments tellingly on audio-visual attention and the interplay between sound and silence in film, stating “Music may paradoxically be most noticeable

in its absence, during those moments...when it is most commonly expected.”²⁸ Smith cites a study in which film viewers questioned after a film viewing provided positive evaluations of its musical score when in fact none was present. Noting the phenomenon of “inattentional blindness,” a failure to notice fully visible objects due to attention being captured by other objects,²⁹ he argues that film audiences suffer from an “inattentional deafness” in which they do not actively perceive film music but, as the cited study makes clear, assume its presence due to the auditory norms of cinematic presentation. However, as he notes, though film music often remains below the threshold of awareness, it nonetheless strongly influences the experience of cinema, as do moments of silence.³⁰ Given that musical accompaniment is also an expected component of Western theatrical dance performance, Smith’s observations apply to dance as well.

In the conditions described above, the introduction of brief sounds or abrupt cessations of sound draw focus and heighten attention to hushed or completely silent auditory soundscapes. The examples described above demonstrate two contrasting events in which auditory attention will involuntarily intensify and focus in response to novel signal quality. Though attention to sound can be shifted voluntarily by the perceiver through selection among different streams or aspects of information in the sonic environment, it also shifts involuntarily in response to sudden changes in the soundscape. The presence of information that is novel and thus potentially important triggers a reflex

²⁸ Smith, “Music,” in Paisley Livingston and Carl Plantinga, *The Routledge Companion to Philosophy and Film* (London & New York: Routledge, 2009), 194.

²⁹ See for example Ulric Neisser, “The control of information pickup in selective looking,” in *Perception and its development: A tribute to Eleanor J. Gibson*, A.D. Pick, ed. (Hillsdale: Lawrence Erlbaum, 1979), 201-219; and A. Mack and I. Rock, *Inattentional Blindness* (Cambridge, MA: MIT Press, 1998).

³⁰ See Annabel J. Cohen, “Film Music: Perspectives from Cognitive Psychology,” in *Music and Cinema*, J. Buhler, C. Flynn, and D. Neumeier, eds. (Middletown: Wesleyan University, 2000), 193.

first described by in 1927 by Ivan Pavlov as an “investigative” or “what-is-it” reflex and later referred to as the orienting reflex. This reaction typically evokes increased attention, behavioural stilling, and autonomic arousal.³¹ Later research by Sokolov, Öhman, and, more recently, Lang et. al. and others has further refined understanding of the orientation response by linking it with memory and processes of habituation to stimuli,³² while studies by Bernstein and others have discussed the role of stimulus significance to the perceiver in the elicitation of orienting responses.³³

These studies’ conclusions on the roles in attentional arousal played by expectation, habituation, and significance support Humphrey’s view that sound is perceived as “new again and fresher” following a period of silence. However, these studies complicate Humphrey’s observation that silence “rests the ear.” Humphrey’s view is perhaps understandable given the overwhelming tendency in both commonsense assessments and perceptual research to consider silence an absence of sound that offers nothing to which to listen. Gibson surprisingly excludes silence from his analysis of the auditory environment, considering exclusively the structure and sensory pickup of

³¹ I. Pavlov, *Conditioned Reflexes: An Investigation of the Physiological Activity of the Cerebral Cortex*, transl. G.V. Anrep (London: Oxford University Press, 1927). See also R. Näätänen, *Attention and Brain Function* (Hillsdale: Lawrence Erlbaum, 1992); and J. Gavin Bremner and Alan Fogel, eds., *Blackwell handbook of infant development* (Hoboken: Wiley-Blackwell, 2002), 243.

³² See E. Sokolov, “Higher Nervous Functions: The Orienting Reflex,” *Annual Review of Psychology* 25 (1963): 545-80; A. Öhman, *The Orienting Response, Attention and Learning: An information-processing perspective* (Mahwah: Lawrence Erlbaum Associates, 1979); and Peter Lang, Robert Simons, and Marie Balaban, eds. *Attention and Orienting: Sensory and Motivational Processes* (Mahwah: Psychology Press, 1997).

³³ Alvin Bernstein, “To what does the orienting response respond?” *Psychophysiology* 6, no. 3 (1969): 338-50; Alvin Bernstein, “The orienting response as novelty and significance detector,” *Psychophysiology* 16, no. 3 (1979): 263-73; Irving Maltzman, “Orienting reflexes and significance: a reply to O’Gorman,” *Psychophysiology* 16, no. 3 (1979): 274-282; and David LaBerge, “Attentional Processing in Musical Listening: A Cognitive Neuroscience Approach,” *Psychomusicology* 14 (1995): 20-34.

“vibratory events.”³⁴ Nonetheless, in spite of the fact that silence has none of the discernible qualities of sounds – loudness, pitch, timbre, or directionality – silence is something we do in fact perceive, listen to, and hear. As philosopher Roy Sorensen emphasizes, the sensory experience of silence is not a cessation or failure of perception but rather “successful perception of an absence of sound.”³⁵ In addition, as Sorensen further notes, given that silences, like sounds, at least potentially possess salience, we treat them similarly from a behavioral perspective, reacting to the unexpected occurrence of both sound and silence by heightening and focusing auditory attention and parsing the sonic environment, of which both sounds and silences are a part, for meaning.³⁶ Smith’s claim that we suffer from “inattentional deafness” further demonstrates that aural perception is not always a veridical phenomenon and that under certain conditions, the “ear” will create the perception of sound when none actually occurs. Thus, the auditory system is not arrested when exposed to silence but instead actively attends to and tries to make sense of silences, at times even constructing fallacious perceptions of sound.

Further, there is conflict within Humphrey’s claim that by permitting a sole focus on movement, silence both simplifies and increases “concentration,” a term she apparently uses in lieu of “attention.” From the quote above, it is clear that Humphrey considers the co-presence of movement and music more taxing on perception than when music is not present. However, Humphrey equates an increase of attention to a single perceptual channel (in this case, the visual) with a simplification of perception. In other

³⁴ Gibson, *Senses*, 53.

³⁵ Sorenson, *Seeing Dark Things: The Philosophy of Shadows* (Oxford & New York: Oxford University Press, 2008), 267.

³⁶ *Ibid.*, 277.

words, she holds that the absence of sound permits attention to movement that is both more intense and somehow easier. Whether the presence of sound actually complicates attention to movement is a matter of contention within the cognitive literature, as are the effects of impinging sonic changes. Studies of the effect on visual perception of attentional capture by unexpected sounds have produced conflicting results. Some of these experiments, which measure subjects' performance of visual tasks while exposed to changes in soundscape, show that attention-capturing sounds with no relevant relation to the visual task impair task performance, which would ratify Humphrey's views. Other studies, however, show that such stimuli enhance performance, which would align with White's claim that music enhances movement perception by "allowing us to see the dance more clearly."³⁷ Of course, both the sounds used in such experiments and the performance of visual tasks in laboratory settings differ greatly from the experience of listening to and watching dance performance. Nonetheless, it can be surmised that the sonic offsets and inserts in Forsythe's performances do have an effect on the visual experience of the works, be it an enhancement of focus on movement, as Humphrey claims, or a detraction through the intrusion of sound.

Given the unexpected and abrupt sonic shifts in the works described in this section, it is noteworthy that when they occur, the dancing typically continues unabated and without qualitative differences as the soundscape changes. In the works above, virtually without exception, dance movement and overall levels of action onstage continue in the same dynamic range through the sonic transitions. In other words, the

³⁷ See I. San Miguel, D. Linden, & C. Escera, "Attention capture by novel sounds: Distraction versus facilitation," *European Journal of Cognitive Psychology* 22, no. 4 (2010): 482-3.

visual environment retains a relatively constant level and steady quality of stimulus in contrast to irregular rhythms of acoustic shifts between musical passages, textual or sonic inclusions, and perceived silence. It can thus be said that Forsythe limits informational change to the auditory channel instead of choreographing it as a multimodal shift. In doing so, I argue, Forsythe performatively isolates and taps the reflex responses of the auditory system in order to enhance experience of the spectacular *hush* of these moments of change in the soundscape.

A further critical aspect is that in Forsythe's works, these instances of unexpected sonic shift set in contrast to continuous levels and dynamics of visual action are staged repetitively rather than as single instances. The speakers in *From the Most Distant Time* and *The The* and the musical gestures of *Firsttext* break the silence or hush numerous times, while *Trio* and *Yes we can't* are marked by several musical cutoffs and restarts. As I have discussed elsewhere, such repeated presentation of conditions "refresh" the evoked perceptual effects over and over again, creating a sustained opportunity for viewer-auditors to become aware of the phenomenological experience of these performative events.³⁸ In the instances described in this section, the repetition of auditory shifts reveals the robustness and "hardwired" quality of the orienting response.

Considering Humphrey's views on the effects of silence on attention to movement and the historical conditions within which they were formulated, and in light of the visuo-sonic conditions of the works described above, I conclude that more specific analysis of

³⁸ Freya Vass-Rhee, "Turning the Tables: William Forsythe's Antipodes I/II," in *Theater ohne Fluchtpunkt/Theatre without Vanishing Points: Das Erbe Adolphe Appias: Szenographie und Choreographie im zeitgenössischen Theater/The Legacy of Adolphe Appia: Scenography and Chorography in Contemporary Theatre*, Gabriele Brandstetter and Birgit Wiens, eds. (Berlin/Köln: Alexander Verlag, 2010), 297.

silence is needed to fully understand its potential effects and affects. Specifically, a distinction should be drawn between onsets of silence or of relative quiet, which involve a spectacular, moving shift either from presence to absence of sound or from higher to markedly lower levels of sound, and the *body* or durational period of silence, during which sonic change is at a nadir. Such finer-grained consideration of events of *hush* would accord with Gibson's observations that our delineation of "natural" perceptual units is a matter of choice rather than of measurement and that events are structured in nested hierarchies of subevents.³⁹ This is as much true of Gibson's examples of speech and music as of the examples I have discussed above, in which Forsythe stages repeated onsets of hush by either repeatedly punctuating sustained quiet with fragments of sound or by suddenly breaking continuous soundstreams off into relative quiet. I hold that the capture of auditory attention elicited by these impinging alterations of sound underlies one form of visuo-sonic spectacularity which Forsythe performatively underscores both by contrasting the dramatic sonic shifts with constant levels of movement dynamic and by repetitive presentation of instances. In what follows, I describe a second form of visuo-sonic spectacularity that is evinced by the sustained body of silence. As I will show, the movement dynamics and spectacular affects of these two forms stand in complete contrast and are defined by both the physical pragmatics of generating silence and the performative potentials of choreographing movement and sound.

³⁹ Gibson, *Ecological Approach*, 101-102.

5.3.2 Gripping silence

In the works described in the previous section, alternations between silences and sound events are composed in manners that exploit the involuntary perceptual reflex that shifts attention to novel sound events. The performative affect of these instances relies on onset effects arising either from brief, periodic sonic inclusions or on abrupt cessations of established soundscapes. In this section, I consider silences in Forsythe's works that, due to their longer duration and distinct compositional contexts, offer the spectacular body of silence as the object of attentional focus. In contrast to the instances of *hush* above, which are not complete silences but are instead marked by relatively quiet ambient sounds or sonic gestures, the silences discussed in this section are uninterrupted and profound, rather than perceived of as silences by virtue of the absence of music or text. As I argue, these extended bodies of silence engender a distinct form of performative sensory engagement that is supported by a different choreographic strategy.

Artifact, a four-act work created in 1984 which illuminates classical ballet as a historical construct and interrogates its survival as a dance aesthetic through the 21st century, opens with an extended silence that both renders indistinct the point of the work's actual beginning and performatively engages with the expectation of music in dance performance. As the audience enters the auditorium and takes their seats, the curtain is open, revealing a bare, dimly crosslit stage. While they are entering, a ghostly grey figure named in the program as the "Other Person" but also sometimes referred to as the "Mud Woman," begins the first of a series of traversals of the bare stage, passing

from the audience's left to right straight across the upstage area or on the diagonals.⁴⁰

Seated and entering audience members become still and quiet as she steps slowly towards center stage then continues onward toward the wing, posing briefly with each step in *tendu en arrière* and moving her arms through even slower *ports de bras*. An interval of empty stage space occurs each time she exits; then, having crossed backstage or in the wings, she reappears and crosses again at the same slow, regular tempo. As she finishes the last of her crossings on an upstage diagonal, the house lights finally dim slowly and another woman in an ornate, flowing dress and powdered wig – the “Person in Historical Costume” – walks slowly but deliberately to the center of the stage. Once there, she whirls lightly to face the audience and ceremonially claps her hands. She sweeps forward with florid gestures and exaggerated, courtly dance movements to a bright passage from Ferruccio Busoni's piano transcription of Bach's *Chaconne* from the Partita no. 2 in D minor. Arriving downstage, she speaks, gaily enjoining the audience to “step inside.”

Improvisational musician Edwin Prévost offers a useful distinction between silences that mark the beginnings of musical performances, those occurring within them, and those that end them.⁴¹ In the first condition, as Julie Sutton notes, musical silence signals the performers' readiness and establishes expectancy on both their part and the audience's. Viewing the event of musical performance outset from the perspective of communication studies, its culturally established “frame” indicates to its participants a

⁴⁰ The “Other Person” makes a minimum of two crossings lasting a total of approximately 5 minutes, but has made as many as six. Forsythe explains that the number of crossings is varied to accommodate the time taken by audiences to seat themselves and each theater's conventions for signaling of the performance's beginning in the theater foyer (e.g. through bell signals or spoken announcements). Ideally, the audience is fully seated and the auditorium doors closed at the beginning of the “Other Person's” last crossing.

Forsythe, personal discussion with the author, August 23, 2010.

⁴¹ Prévost, *No Sound is Innocent* (Harlow, Essex: Copula, 1995), 133-4.

specific structuring of “floor-taking” and “floor-holding” events:⁴² the audience enters the theater, the imminent beginning of the performance is signaled by one or more means (performers taking their seats or raising their instruments, the conductor’s arrival, a change in lighting, etc.), the performance begins, intervals are indicated for the audience to respond (performer silences or, in the case of jazz, the ends of soli), the performance ends, and the audience offers its final response. At *Artifact*’s opening, however, Forsythe flouts the framing conventions of proscenium dance performance by staging an audio-visual paradox. Audience members already seated and those entering find the “Other Person” already “taking her turn,” moving within the stage space in a dancerly fashion although she has not yet begun to dance in a conventional sense. Further, the anticipated music has not yet begun and does not begin until she has completed her crossings and the “Person in Historical Costume” enters and commands its start with a clap of her hands.

Both audiences in the early years of the Ballett Frankfurt and current audiences viewing stagings of *Artifact* on other companies are caught off guard by this performative break with conventional theatrical event structure.⁴³ Spectators who enter the auditorium during the “Other Person’s” crossings fall silent at the sight of the moving performer, respecting theater etiquette and attempting to discern whether the “real” performance – which in the case of a classical ballet would be marked by the dimming of house lights, music beginning, and opening of the curtain – has already commenced or has yet to start.

In later works in which Forsythe also stages this “Vorschau” (“before-show” or pre-view)

⁴² See Erving Goffman, *Interaction Ritual: Essays in Face-to-Face Behavior* (Chicago: Aldine Publishing, 1967); and Goffman, *Frame Analysis* (New York: Harper & Rowe, 1974).

⁴³ *Artifact* was performed by the Ballett Frankfurt from 1984 through 2002. Since then, an abbreviated version has been performed as *Artifact Suite* by several companies worldwide and the full-length version has been performed by the Royal Ballet of Flanders and the Bavarian State Ballet.

device, such as *Kammer/Kammer* and *I don't believe in outer space*, audiences do not notice their own silence, as their attention is caught by the sound and action of onstage dialogue or music. *Artifact*'s opening stage silence, however, fills the auditorium, contrasting the sounds of those entering and issuing a tacit demand for silence on their part.

Critically for my discussion, the silence during *Artifact*'s opening neither serves to call attention to the “natural” sounds of the performer onstage nor to sounds made by the audience once seated. The deep silence that emerges during the “Other Person's” final crossings in *Artifact* is instead a spectacular hush of anticipation that is generated and sustained both by the repetition and timing of the performer's entrances and the spatiality of her crossings. As she silently traverses the stage space, she passes at regular intervals through and beyond points that Humphrey cites as significantly “powerful” – the corners and center of the stage – by moving first directly across the upstage and then along the energy-filled diagonals.⁴⁴ These locations are typical points at which dance action traditionally tends to commence in proscenium theater dance performance. The staging of the “Other Person's” crossings on the diagonals and across the upstage area evokes the dance-cultural history of these points, repeatedly fueling anticipation that the expected music might start and that the performer might begin to dance in earnest. Each time she leaves the stage after crossing, the audience waits, wondering whether she will appear yet again, and if so, from where.

⁴⁴ See Humphrey, *Art of Making Dances*, 72-83.



Figure 5.2 Carrying her silence with her: The “Other Person” in *Artifact*. Emma Barrowman, Bavarian State Ballet. Photo: Charles Tandy.

While the “Other Person’s” trajectories, disappearances, and reappearances sustain a hush of anticipation, the quality of her movement insures that the silence is not broken by any sound of her own making. Ballet audiences are often dismayed to be reminded of the tendency of motion to produce noise in performances when the clatter of

pointe shoes, the thump of knees or hips against the floor, or the smack of contacting bodies are heard. The “Other Person’s” slow, sustained stepping and light, bound, non-contacting movements produce no discernible noise, evoking in tandem the imperative of silence in classical ballet, in which landings from jumps and limb contacts (for example in *petits battements serré*, *grands sautés*, and *cabrioles*) are ideally noiseless. In subsequent appearances in other scenes and acts, joined at times by the *corps de ballet*, she “carries” her balletic silence with her, performing deep, slow lunges and rapid, angular arm movements which include striking her closed fists together and noiseless clapping, with the exception of one sharp and unexpected audible clap late in the first act.

A lengthy initial silence is also sustained by the movement quality in *Die Befragung des Robert Scott †*, a work created in 1986 and revised several times over the following 15 years.⁴⁵ During this silence, which lasts almost six minutes, approximately thirty dancers are distributed throughout the huge stage space, each improvising alone at a relatively leisurely pace on a set choreographic phrase known as “Tuna.”⁴⁶ The ensemble fragments, reverses, translates, or extrapolates movements from the phrase of stretched legato movements, coming to periodic simultaneous freezes and varying tempo as a group in response to quietly whispered instructions by Forsythe, which the performers can hear through speakers in the wings. The dictated length and speed of the movement sections and the length of pauses vary from performance to performance,

⁴⁵ Revised versions of *Die Befragung des Robert Scott †* have been produced periodically since the work’s initial premiere. For a comprehensive study, see Gerald Siegmund, “Of Monsters and Puppets: After the ‘Robert Scott Complex,’” in Spier, *William Forsythe*, 20-37.

⁴⁶ Originally choreographed in 1986, the “Tuna” combination and its many permutations serve as the basis for *Die Befragung von Robert Scott †* and other subsequent works. It was so named, Forsythe explains, because “you can make so many things with tuna.” The most recent work based on this material, *Whole in the Head*, was premiered in November 2010.

rendering the action and breaks unpredictable for both performers and audience and heightening the attention and anticipation of both.⁴⁷ The light, free-flowing, and non-contacting movements of the “Tuna” phrase, along with the socks the dancers wear over their ballet flat shoes, insure a quiet stage even when performers execute the phrase’s small jumps. During the freezes, a duet of dancers continues crossing the stage space, twining in slower motion than the ensemble. The stage-filling distribution and varying actions and speeds of the dancers scatter and dazzle attention through an overload of demand which is reasserted each time the group resumes moving after the freezes. Though the crossing duet offers a single locus of action that counterpoints their hypnotic millings and stillnesses, its slow, drawn-out movements augment rather than break the tension generated by the visual overload of the ensemble. At the end of this section, the group quietly walks to the side of the stage, and solos begin to Thom Willems’ quietly emerging tonal score.

Near the end of *Robert Scott*, anticipation and expectation are heightened in a different manner. The music falls away as a female performer, standing alone near center stage begins swiftly circling her arms into an open-handed V-position, emitting a short, high-pitched scream each of the 100 times she repeats the gesture. This extended set of rapid repetitions, which lasts approximately one and a half minutes, exhausts efforts to count the circles/screams. Then, the performer unexpectedly makes the 101st V-position in silence, holding the position briefly and then allowing her arm gesture to slowly decay. The abrupt shift from the urgency of the rhythmic screams into silence catches the

⁴⁷ In subsequent stagings of the work by Rizzi, cueing of stops was coordinated among the dancers in response to quiet “sniffing” cues. Anthony Rizzi, personal discussion with the author, October 15, 2011.

audience off-guard, arousing attention and creating uncertainty about what will follow, while the drawn-out decay of the gesture sustains and augments the tension. The performer reiterates the swift V-position and slow decay several times in silence as the long, static tones of Thom Willems' score quietly recommence and a solo slowly begins elsewhere onstage.

These “moving” silences in Forsythe's work are enhanced through visual dynamics which alternate light, smooth, and quiet movement with either complete or near stillnesses. *Artifact*'s “Other Person” continuously pulses smoothly forward with each slow step and periodically disappears and reappears in view. In *Robert Scott*, the fluid and varied motion of the dispersed ensemble, which bears a striking resemblance to the Brownian motion of suspended particles, alternates with freezes that are counterpointed by the extremely slow flow of the continuing duet. The silent gestures that end the “100 screams” are characterized by transitions between the sustained free flow of the weakly decaying falling arm gesture to the sudden bound return of the arms into the V-position. In contrast to the scenes described in the section above, in which movement continues across abrupt shifts between silence and sound, in these instances the silences continue while the movement undergoes unexpected changes in dynamic. As such, I hold that in both cases, Forsythe enhances the spectacularity of attentional response to novel circumstances in the environment by counterpointing informational shifts on one perceptual channel – either the visual or the auditory – with continuous levels of information on the other.

A further type of striking onstage silence, however, involves a full cessation of shift on both channels. This type occurs in an approximately five-minute long section of *Decreation*, a work from 2003 whose narrative derives from two texts by Anne Carson.⁴⁸ In this scene, the phrases of six spoken variations of a short, argumentative dialogue between a husband and wife are distributed among six performers spaced widely throughout the stage space, each time ending with the line “So he gestured to his attorney: five minutes.” Each time this line is uttered, a freeze occurs during which the speakers stand or sit silently with five fingers held aloft. The initial three freezes by the group are extremely long: the first typically lasts close to one minute and the second 30 seconds, while the third, during which David Morrow begins playing quiet single piano tones, is the longest at approximately one minute and 45 seconds. The following three successively shorter pauses produce an accelerating rhythm into the following argumentative verbal exchange between the husband/wife couple and the subsequent scene.

After the onset of each pause, an additional dancer who plays the role of the husband’s male lover continues an exhausting solo which he began in the work’s previous section, performing a kinetic-vocal improvisational modality in which he rapidly enacts incomplete physical expressions of multiple and conflicting emotions.⁴⁹ He flails and stumbles in irregular patterns about the central stage space, his truncated, incomplete gestures and sputtering, gasping utterances trailing over into the group freezes

⁴⁸ Carson, “Decreation: How Women Like Sappho, Marguerite Porete, and Simone Weil Tell God” *Common Knowledge* 8, no. 1 (2002): 188-201; and id., *The Beauty of the Husband: A Fictional Essay in 29 Tangos* (New York: Knopf, 2002).

⁴⁹ I am grateful to Georg Reischl, who originated this role, for providing this description of the improvisational modality. Personal discussion with the author, August 29, 2010.

before his movements slow to a tensed stillness and his voice falters away into a complete silence. Breathing hard but inaudibly and with sweat dripping from his face, he remains frozen with the other performers until Forsythe, who closely monitors the audience's attention as signaled by its members' stillness or restlessness, cues the continuation of the text from the auditorium.⁵⁰ His stops in the first two pauses render two periods of complete silence that last approximately 50 and 20 seconds, respectively. The strikingly deep quiet of these moments extends from the stage to the spectators, who seem to hold their breath and even refrain from moving as they watch and wait for one of the performers to break the silent stillness. As the piano tones begin during the third text section, an additional female performer, who has stood quietly watching at the periphery throughout, begins a downscaled, introspective solo at the side of the stage, her utter silence and rosy twinings contrasting with the noisy, spasmodic tension of the "lover." She continues the solo through all of the following pauses and dialogue sections, with brief stops in her movement counterpointing the silences between notes from the keyboard.

In both this scene in *Decreation* and the opening of *Artifact*, the qualities of the performers' movements – either smooth, even traversals of space or full, coiled arrest – and the repetitive structuring of the scenes generate strikingly long, silent moments which take the audience to the edge of its patience, repeatedly evoking and extending their anticipation of coming events. However, the silences of these and similar scenes in Forsythe's work do not serve to shift aural attention from the silence to ambient sounds

⁵⁰ Forsythe cues these continuations from the back of the auditorium either with a small hand-held light or, if he can be seen from stage, by gesturing or nodding his head.

which might occur in the theater space. Critically, both *Artifact*'s opening crossings and the silences in *Decreation*'s "5 minutes" scene are characterized by a falling away of sound and the potential of increased action. In *Decreation*, the "lover's" voice and movement dwindles into a silent, tensed tableau of performers scattered across the stage space, while in *Artifact* it is the audience's sounds that die off as they enter, see the lone dancer in transit across the empty stage, and wait while she slowly bypasses one conventional locus of scenic power after another. In these literally "breathtaking" moments of tensed expectation, attention is strongly focused on the broad vista of *potential* action. The air is still, the bodies of those watching quieted and transfixed by the acts of watching and waiting, and the dense, spectacular silence of both performers and audience fills the auditorium.

Though Serres notes that sound is a movement of air which in turn moves us, both in a literal and metaphoric sense, events of silence or hush move us first to quiet and stillness and then, if sustained long enough, to restless motion. In the moments of *hush* described in the sections above, the "tympanum" of the spectator's "body-box" becomes sensitized, straining outward into the theater's assailing spaces of vision and hearing. As shown here, Forsythe's choreography of spectacular hush, which extends across the stage and into the auditorium, thus taps the performative potentials of attentional arrest, arousal of audience expectation, and social response to theater convention. His staging of moments crafted to make the ear wait to be sounded reveals two distinct approaches to generating spectacular experience. In the first, audiences are repeatedly and briefly *touched* as instance after instance of onstage *hush* heightens attention to the absence of

sound and the ongoing presence of movement. In moments of complete stage silence, audiences experience a durative *gripping* in expectant response to couplings of prolonged quiet with repeated alternations between smooth, even movement dynamics and stillnesses.

5.4 Chapter conclusion

In this chapter, I have described the potent effects of dramatic changes in sound volume and silences in a broad range of Forsythe's works. I have delineated three distinct types of composed quiet in which sound punctuates onstage *hush*, musical caesurae produce *hush*, or complete silence fills the stage and auditorium. For each case, I have shown how the choreography supports and deepens the effects of these sonic transitions. I have analyzed the spectacularity of these moments using a range of cognitive approaches to attention, seeking to ground and to tease out distinctions in our categorization of events as silent, the language we use to describe the moment of spectacle, and accounts of the effect of silence in dance. In doing so, I have demonstrated the efficacy of a multimodal analysis of dance events which employs a piecemeal approach to understanding specific instances rather than larger event classes.

As potent as theatrical silence can be, it has not been empirically studied for its own affect or effect. Most empirical research on the effects of sound in art events has been conducted on musical performance and has tended to focus on physiological measures of emotional response, either by measuring autonomic arousal responses such as heart rate or galvanic skin response or reported experience of "peak emotional

experiences,”⁵¹ levels of event immersion,⁵² or the experience of “thrills” or “chills” by the listener.⁵³ In such studies, silence is used as a control condition rather than as an object of primary focus. In addition, these studies, almost without exception, do not address visual percepts or other modalities, either alone or in tandem with music. When such percepts are included, silence is still relegated to the status of a control condition. For example, in a section of a comparative study on thrills responsiveness by Vladimir Konečni and colleagues, images of visual aesthetic objects were presented to experimental subjects with music from either a Rachmaninoff piano concert or a Hayden symphony. Prior to presentation with music, however, the visual stimuli were first presented in silence as a habituating or “priming” condition.⁵⁴ Though the relation of music and dance has also begun to be studied in recent years, with dance material occasionally being presented in silence as an experimental condition, silence replaces musical accompaniment in these cases solely in order to facilitate focus on the dancing alone.

As silences clearly evoke perceptual activity and arouse attention, I maintain that they should be studied in more detail as acoustic events in their own right rather than only being viewed as a control or priming condition. Given its frequent inclusion as a

⁵¹ See A.H. Maslow, “Lessons from peak experiences,” *Journal of Humanistic Psychology* 2, no. 2 (1962): 9-18.

⁵² See A. Tellegen and G. Atkinson, “Openness to absorbing and self-altering experiences, (‘Absorption’), a trait related to hypnotic activity,” *Journal of Abnormal Psychology* 83, no.3 (1974): 268-77; and S.M. Roche and K.M. McConkey, “Absorption: Nature, assessment, and correlates,” *Music and Mind* (London: Harper Collins, 1990).

⁵³ See A. Goldstein, “Thrills in response to music and other stimuli,” *Physiological Psychology* 8, no. 1 (1980): 126-9; and J.A. Sloboda, “Musical structure and emotional response: Some empirical findings,” *Psychology of Music* 19 (1991): 110-20.

⁵⁴ V. Konečni, R. Wanic, and A. Brown, “Emotion and aesthetic antecedents and consequences of music-induced thrills,” *American Journal of Psychology* 120, no. 4 (2007): 619-43.

compositional element in music, theatre works, and modern and contemporary dance choreography, silence also warrants deeper consideration from a phenomenological perspective. Though silence may not be a “vibratory event” of the type that perceived sounds are, its manifestation, as well as substantial variances of sound, are nonetheless experienced as *moving* events. This is particularly true within the context of performance, when composed quiet profoundly arouses the sensing body, transfixing it through informational lulls which cause it to strain eagerly outward for the touch of sensation, opened and searching for motion in the seemingly still air.⁵⁵

In the following chapter, I continue my exploration of visuo-sonic spectacularity in Forsythe’s work, contrasting the poverties of sound studied in this chapter with scenes in which audiences are immersed in hypnotic, spectacular soundscapes.

⁵⁵ True silence does not exist as a percept due to the sounds of autonomic systems, which remain below the threshold of perception under normal conditions. Composer John Cage frequently recounted the story of his 1951 visit to Harvard’s anechoic chamber, an environment structured to minimize sound reflection. Expecting only silence in the chamber, he instead was able to hear the sounds: of the activity of his nervous system and his blood circulating. See John Cage’s lecture “Indeterminacy,” *Die Reihe* no. 5, English edition, 115, <http://www.lcdf.org/indeterminacy/s.cgi?n=6&var=dr> (accessed August 23, 2010).

Chapter 6

Sound the spectacle II: Overwhelm and Lull

6.1 Introduction

This chapter extends the piecemeal analysis of spectacular instances in dance performance begun in the prior chapter by examining two additional classes of visuo-sonic composition in a range of Forsythe's choreographies that span his tenure as director of Ballett Frankfurt and The Forsythe Company. In the first category, Forsythe stages chaotic action and sharp, bewildering shifts of light in loud, cacophonous soundscapes, producing a seemingly unorganized visual and sonic "noise" that overloads the senses and subjects viewer-auditors to high degrees of stunning audio-visual stress. In the second category, unexpected (and, as I note, often undesired) visuo-sonic interruptions punctuate long passages of slowly building minimalistic musical structures that accompany hypnotic repetitive movement patterns. As I show, these two scene categories evoke contrasting experiences of spectacularity through their opposing sonic and visual dynamics.

As detailed in the previous chapter, the language we use to describe moments that we term "spectacular" bears the sense of being held, moved, or penetrated by an external, agentive, moving force. In what follows, I frame the power of the spectacular as an *enchantment* (literally, a spellbinding through song) in which, responding to input which may be auditory, visual, or both, we fall into states in which the subjective feel of events differs from that of "everyday" moments. Extrapolating on Serres' observations on the

immersive and moving effects of sound on the body and on attention, and interrogating Jaques Attali's Marxist analysis of the ideological contrast between noise and music from a cognitive perspective, I explain how these two conditions, which I term *overwhelm* and *lull*, respectively, afford audiences two different but related experiences of spectacularity which, I argue, constitute non-ordinary states of consciousness (NOSCs). As I emphasize, research on NOSCs has elided consideration of such manifestations in favor of focusing on extreme states such as trance, overload, or trauma. My analysis of the two conditions of *overwhelm* and *lull* reveals how Forsythe's stagings of spectacular disruption translate the desire for the spectacular, which is made evident in audience responses to these conditions, into a perceptually performative experience.

As in the previous chapter, my key objective is to develop a cognitive approach to the spectacular affect of instances in dance performance. I accomplish this by analyzing the effects of the two conditions described above on audience perception, showing how Forsythe's choreography of perceptual performance takes advantage of the alteration of conscious experience in response to specific structures of auditory and visual information. By undertaking a piecemeal analysis focused on substructures within larger works, in which I bring research from empirical and ethnographic studies of consciousness, perception, music, environmental psychology, film studies, and performance studies to bear on critical responses to these moments, I seek to deepen understanding of both the mechanisms underlying perceptual performativity and responses to its occurrence. Together, these two chapters demonstrate the ability of such

an interdisciplinary and multimodal approach to augment knowledge within both dance studies and cognitive studies.

In the first section below (6.2), I ground my claim that experiences of theatrical spectatorship are non-ordinary states of consciousness by linking Attali's views on the ideological functions of music and noise with the NOSC-inducing effects of specific types of sound. Noting limitations in both empirical and humanistic research on NOSCs, I expose a bias in NOSC research that produces a lack of consideration of "milder" forms such as spectatorial experience of theater events. In the first of two data sections (6.3.1), I describe scenes from Forsythe's works that provide overwhelming floods of visual and sonic information, explaining how the spectacular overstimulation produced by these scenes engenders altered experiences that approach the sublime. In section 6.3.2, I turn to works and sections of works by Forsythe in which rhythmic performative alternations between information reduction and disruptions are sustained by overlaying minimalist *ostinati* and drones and smooth, repetitive movement passages containing "disturbing" events which, critically for my analysis, are visual as well as sonic. In the chapter's conclusion (Section 6.4), I relate the audio-visual stress of interruption to Attali's music-noise dichotomy and discuss Forsythe's performative engagement with the spectacular.

6.2 Background

In his critique of the ideological work of music in society, Attali contrasts music and noise in terms of their perceptual effect but primarily in terms of ideological valence. He construes noise, or unorganized sound, as violence, a simulacrum of murder that, as

he states, has “always been viewed as disorder, dirt, pollution.” Music, which is noise that has been channeled into orderly and acceptable patterns through composition, instead simulates sacrifice by converting what would otherwise be dangerous, uncontrolled violence into a sanctioned, restorative form of killing:

[L]istening to noise is a little like being killed; that listening to music is to attend a ritual murder, with all the danger, guilt, but also the reassurance that goes along with that; that applauding is a confirmation, after the channelization of the violence, that the spectators of the sacrifice could potentially resume practicing the essential violence.¹

In effect, Attali claims that music and noise produce states of altered ideology.

Music functions as a tool of power by generating collective belief in harmonic order and protective agency, while causing people to forget the possibility of a carnivalesque freedom.² His analysis tacitly marks music as a form of sound which, by virtue of the “cleanliness” of its composed structure, produces a pacifying sonic spectacle that literally enchants societies, its captivating promise of order causing a turn away from the potential release offered by the real, noisy world. Film theorist Jean-Louis Baudry comments similarly that spectators are “chained, captured, or captivated” by the film image’s spectacular and illusory representation of reality, harnessed and controlled by the apparatus of film and projected in the dark, safe space of the cinema.³

Though both of these views are ideological in focus, they also obtain at the level of perception. Musical structure affords many simultaneous vectors for attention, including but not limited to melody, harmony, motifs, instrumentation, timbre, and

¹ Attali, *Noise*, 28.

² *Ibid.*, 27.

³ Baudry, “The Ideological Effects of the Basic Cinematographic Apparatus,” *Film Quarterly* 28, no. 2 (Winter 1974-75): 139-47.

historical or cultural style. It could indeed be said that rather than listening *to* music, we listen *into* music, immersing ourselves in its manifold perceptual currents. In turn, the veridicality of film's imagery and sound convinces us that the events presented are real, rather than staged, occurrences. We no more listen to music as a collection of noises than do we view films with an eye toward perceiving the effects and limitations of the filmic apparatus. Many 20th-century composers and filmmakers, however, have exploited the immersive qualities of music and filmic image by crafting works that performatively thwart the absorption provoked by the seduction of spectacular experiences.

In the 1960's, as Sally Banes explains, postmodern dance choreographers rejected the artificiality of both classical ballet's ornamentation and narrative and modern dance's expressionism. They instead opted to create and present works in which movement "became like an object, something to be examined coolly without psychological, social, or even formal motives."⁴ This was accomplished by making dances that were stripped of their spectacular trappings, producing what Banes refers to as an "aesthetics of denial." Yvonne Rainer's often-cited "No Manifesto" succinctly captures the rejections of the era:

No to spectacle no to virtuosity no to transformations and magic and make-believe no to glamour and transcendence of the star image no to the heroic no to the anti-heroic no to trash imagery no to involvement of performer or spectator no to style no to camp no to seduction of spectator by the wiles of the performer no to eccentricity no to moving or being moved.⁵

The vehemence and pervasiveness of post-modern choreographers' rejection of spectacle faded in the decades that followed, though many choreographers still adopt this aesthetic. As I show in the previous chapter and below, Forsythe has taken a different

⁴ Banes, "Yvonne Rainer," 43.

⁵ Yvonne Rainer, "'No' to spectacle," *Tulane Drama Review* 10, no. 2 (1965): 178.

approach to spectacle throughout his choreographic career by deploying the seductive power of both visual and sonic spectacularity as a *moving* medium within which to stage performative interventions. My analysis of Forsythe's spectacular dynamics, shaped as it is by turns to the cognitive and to the audio-visual, shows that Forsythe says both yes and no to spectacle, alternating between its presentation and its rupture to produce a distinctly perceptual ideology of performativity.

Zoologist Vincent Dethier notes that while the concept of interruption bears a pejorative connotation because it necessarily implies disruption of prioritized informational streams by incongruous elements, interruption is in fact an essential factor from a physiological perspective. Though interruptions may be experienced as aggravating, they produce counteracting effects on the adaptive tendency to habituate to stimuli by disattending to continuous, unchanging perceptual signals. As Dethier shows, organisms have evolved a wide variety of physical mechanisms to self-impose intermittent interruption of stimuli uptake, ranging from small involuntary eye movements (saccades, drift, and tremor) to subconscious behaviors such as sniffing and twitching. Dethier further points out that environments or stimuli with little interruption, such as calm oceans, monotonous sounds, or conditions of sensory deprivation, often elicit negative responses, including psychological discomfort, heightened sensitivity, or hallucinations.⁶ In other words, though interruption is typically perceived of as perceptually stressing, it in fact alleviates stress generated by lack of interruption. The work of post-modern and contemporary choreographers both ratified and tested the

⁶ Dethier, "Sniff, Flick, and Pulse: An Appreciation of Interruption," *Proceedings of the American Philosophical Society* 131, no. 2 (1987): 159-76.

balance of these two stressors by experimenting at both ends of the spectrum. The minimalism of Steve Paxton, Lucinda Childs, and David Gordon contrasts with the sensory assault of Karole Armitage's early anarchical "punk ballet" and Wim Vandekeybus' hyperkineticism.

The importance of interruption's perceptual effects, Dethier further comments, is not limited to everyday scenarios but also extrapolates to artistic contexts. Discussing experimental forms in music and visual art of the 20th century, he cites the divergence between minimalist trends in music and art, in which interruption tended to be reduced, and other paradigms such as twelve-tone composition and Op Art, in which increased complexity of stimulation was a hallmark.⁷ Immediately prior to this, the inclusion of disharmonious figures in early 20th century music broke with the "orderly" structural traditions of classicism, in which musical figures exhibit harmonious relationships to the supporting ground. Stravinsky's punctuations of melodic or *ostinato* ground structures with jarring figures, for example in the ballets *Petrushka*, *Les Noces*, and *Le Sacre du Printemps*, are one example of this dramatic employment of disruption.⁸

The presence of discordant figures within musical compositions both ratifies and complicates Attali's distinction between noise as chaotic dirtiness and music as a sonic realm of order and cleanliness. Broadening this dichotomy by considering both sound and vision and transposing this expanded view by applying a cognitive perspective reveals the perceptual-affective basis of this ideological dichotomy.

⁷ *ibid.*, 175-6.

⁸ See Jann Pasler, "Music and Spectacle in *Petrushka* and *The Rite of Spring*," in *Confronting Stravinsky: man, musician, and modernist*, Jann Pasler, ed. (Berkeley: University of California Press, 1988), 71-3; and Edward Cone, "Stravinsky: The Progress of a Method," *Perspectives of New Music* 1, no. 1 (1962): 18-26.

In the mid-1960's, there was an increase in research interest on non-normative conscious states, which can arise spontaneously as a result of certain illnesses, injuries, trauma, or states of physical deprivation, but which can also be induced by a variety of means, including meditative mental or physical practices, the use of psychoactive drugs, or, as I discuss in more detail below, certain structurings of sensory information. The increased interest at this time likely arose out of a confluence of the cognitive turn in research with a popular turn to Eastern transcendental traditions and an increased use of mind-altering recreational drugs. The term "altered state of consciousness" (ASC), first used in 1966 by Arnold Ludwig and popularized three years later by Charles Tart,⁹ is widely used to denote experiences which differ subjectively from everyday waking experience. In this chapter, I instead use the term "non-ordinary state of consciousness" (NOSC), which was coined by Stanislav Grof and which bears less of the former term's associations with meditative and narcotic means of manipulating conscious function.¹⁰

NOSCs encompass a broad array of experiences including not only mild or intensive meditative states, experiences of expanded consciousness, trance, ecstasy, and hysteria, but also everyday conscious phenomena like daydreaming and productive states of concentrated focus. Substantial cultural distinctions exist within the various types of NOSCs. For example, as Judith Becker notes with regard to trance:

...there is the trance of the performer who feels herself to be one with the music she plays; the mild trance of the listener whose whole attention becomes focused on the music; possession trance, in which one's self appears to be displaced and one's body is taken over by a deity or a spirit; the trance of Sufi mystics who feel

⁹ Ludwig, "Altered States of Consciousness," *Archives of General Psychiatry*, 15, no. 3 (1966): 225-34; and Tart, ed., *Altered states of consciousness: a book of readings* (New York: John Wiley, 1969).

¹⁰ Grof, *The Adventure of Self Discovery* (Albany: State University of New York Press, 1988).

themselves unified with Allah; or the meditation trance of Vajrayana Buddhists, who feel themselves become the deity... There can be many degrees of trance. Trance is often a learned behavior and thus nearly always bears the imprint of a particular society's beliefs about it.¹¹

In spite of the breadth and cultural variance of NOSC types, research on the less extreme NOSC forms listed above is very limited. Beyond a few exceptions, for example Mihalyi Csikszentmihalyi's extensive research program on states of "flow," or positive immersive states of concentrated activity,¹² interest is typically focused on states of marked psychological transport, such as trance, spiritual transcendence, and ecstasy.

The potential of music to heighten emotion and intensify affect is well supported by subjective report,¹³ laboratory observation of external reactions,¹⁴ and measures of autonomic¹⁵ and neurophysiological response.¹⁶ However, the literature on music's

¹¹ Becker, "Music and Trance," *Leonardo: Journal of the International Society for the Arts, Sciences and Technology* 4 (1994): 41-2.

¹² See Csikszentmihalyi, *Beyond Boredom and Anxiety: Experiencing Flow in Work and Play* (San Francisco: Jossey-Bass, 1975); id., *Flow: The Psychology of Optimal Experience* (New York: Harper and Row, 1990); and later writings.

¹³ See for example Alfred Pike, "A phenomenological analysis of emotional experience in music," *Journal of Research in Music Education* 20 (1972): 262-6; Patrik Juslin & John Sloboda, eds., *Music and Emotion: Theory and Research* (Oxford: Oxford University Press, 2001); and Patrik Juslin & Petri Laukka, "Expression, perception, and induction of musical emotions: A review and a questionnaire study of everyday listening," *Journal of New Music Research* 33 (2004): 217-38.

¹⁴ See for example John Sloboda, "Music structure and emotional response: Some empirical findings," *Psychology of Music* 19 (1991): 110-20; Judith Becker, *Deep listeners: Music, emotion, and trancing* (Bloomington & Indianapolis: Indiana University Press, 2004); and Charlotte Witvliet & Scott Vrana, "Play it again Sam: Repeated exposure to emotionally evocative music polarises liking and smiling responses, and influences other affective reports, facial EMG, and heart rate," *Cognition and Emotion* 21 (2007): 3-25.

¹⁵ See for example D.L. Bartlett, "Physiological reactions to music and acoustic stimuli," in *Handbook of music psychology*, 2nd edition, ed. Donald Hodges, (San Antonio TX: IMR Press, 1996), 343-85; I. Nyklíček, J.F. Thayer, & L.J. Van Doornen, "Cardiorespiratory differentiation of musically-induced emotions," *Journal of Psychophysiology* 11 (1997): 304-21; and L.-O. Lundqvist, F. Carlsson, P. Hilmersson, & P. Juslin, "Emotional responses to music: Experience, expression, and physiology," *Psychology of Music* 37, no. 1 (2009): 61-90.

¹⁶ See for example A. Blood, R. Zatorre, P. Bermudez & A. Evans, "Emotional responses to pleasant and unpleasant music correlate with activity in paralimbic brain regions," *Nature Neuroscience* 2, no. 4 (1999): 382-87; A. Blood & R. Zatorre, "Intensely pleasurable responses to music correlate with activity in brain regions implicated in reward and emotion," *Proceedings of the National Academy of Sciences USA* 98, no.

cognitive effects is largely focused on pleasurable or emotionally arousing responses. As such, it provides no avenue for consideration of other forms of musical experience, such as trance states or those that may be uncomfortable for the perceiver. Additionally, the overwhelming use of classical and popular compositions as musical stimuli in laboratory studies neglects assessment the effects of other forms of music, such as music intended to induce meditative or trance states or postmodern sound collages.

However, sound does play an important role in some studies of trance states. The work of Tart, Gilbert Rouget, and others on trance states, for example, shows that specific types of sound are one of several means of sensory “driving” by which autonomic or brainwave entrainment can be induced, leading to shifts of conscious state and perception. These include repetitive aural patterns such as drumming, chanting, and instrumental drones.¹⁷ While there is no fixed sound structure that universally produces trance as a causal effect, general musical characteristics that induce trance include continuous intensification of tempo or volume, extremely consistent tonality (monotony) or minimal tonal variation, narrow tonal range, and long duration of sound presentation.¹⁸ According to David Aldridge and Jörg Fachner, certain sounds can also function as transitional “acoustic triggers” of trance, including complex multivocal structures which do not permit resolution, low pulses of sound, and sudden high-pitched tonal

20 (2001): 1818-23; V. Menon & D. Levitin, “The rewards of music listening: Response and physiological connectivity of the mesolimbic system,” *NeuroImage* 28, no. 1 (2005): 175-84; and S. Koelsch, T. Fritz, D. Yves von Cramon, K. Müller & A. Friederici, “Investigating emotion with music: An fMRI study,” *Human Brain Mapping* 27 (2006): 239-50.

¹⁷ See Tart, *Altered States*, 1969.

¹⁸ See Jörg Fachner, “Wanderer between worlds: Anthropological perspectives on healing rituals and music,” *Music Therapy Today* 8, no. 2 (2007): 166-95; cf. R. Brandl, “Musik und veränderte Bewusstseinszustände,” in *Musikpsychologie: Ein Handbuch*, H. Bruhn, R. Oerter and H. Rösing, eds. (Reinbek: Rowohlt Verlag, 1993), 599-610.

modulations.¹⁹ However, though this focus on the effects of drumming, chanting, and drones broadens the range of sounds studied, it provides little ground from which to address the spectatorial experiences elicited by sound in tandem with movement performance. Further, though numerous ethnographic studies have examined the structure and psychology of dance practices in which trance or possession play a key role,²⁰ these studies primarily take as their subject the experience of the performer rather than of audience members. Thus, the spectatorial NOSC experience is neglected in general.

In summary, by concentrating on extreme manifestations of NOSCs, existing research elides consideration of the full span of such experiences. Further, because laboratory research on NOSCs either focuses solely on the sonic modality or includes only electronically generated visual stimuli, such as patterned light flashes, the multimodal compositional structure of dance has not been empirically analyzed as a motivator of its affect. Finally, as research on the experience of dance tends to concentrate on the experience of the performer in ritual settings, the spectatorial experience, not only of Western concert dance but of other forms as well, is not considered. This chapter aims to contribute to the filling of this research gap by examining two distinct categories of instances in which the choreographer taps affective

¹⁹ Aldridge and Fachner, *Music and Altered States: Consciousness, Transcendence, Therapy and Addiction* (London: Jessica Kingsley Publishers), 2009, 22.

²⁰ See for example Gregory Bateson and Margaret Mead, *Trance and Dance in Bali* (New York: New York University Film Library, 1951); Kathy Foley, "The Dancer and the Danced: Trance Dance and Theatrical Performance in West Java," *Asian Theatre Journal* 2, no. 1 (1985): 28-49; and Wolfgang Jilek, "Therapeutic use of altered states of consciousness in contemporary North American Indian dance ceremonials," in *Altered States of Consciousness and Mental Health: A Cross-cultural Perspective*, C. Ward, ed. (Newbury Park CA: Sage, 1989), 167-85.

response to visual and sonic structuring which, as I suggest, engender NOSC states, to produce two experiences of spectacularity.

6.3 Overwhelm and Lull

6.3.1 Overwhelm: stunning excess

Forsythe's larger repertoire is characterized as much by multi-centric onstage action as by overlays of competing sound events. The latter element has often drawn the ire of both critics and audience members. Reviews with titles such as "If Only They'd Shut Up and Dance"²¹ reflect a frequently voiced view of Forsythe's inclusion of non-musical sounds, and of spoken text in particular, as irritating and detracting from the quality of his works. Anna Kisselgoff's 1986 review of *Artifact* titled "The Sound and the Flurry of William Forsythe" contains several paradoxical observations that indicate the influence of text on her critical assessment of the work. After complaining that the inclusion of text reduces the amount of dancing in the work, she offers high praise for its textless second act, which, in spite of its repeatedly slamming fire curtain, she singles out as "the passage that has the least interruptions." She concludes by recommending "Less screaming, more dancing."²² Though *Decreation*, which was made 19 years after *Artifact*, has fared somewhat better with critics with regard to its textual content, it still draws comments like Debra Craine's 2009 remark that "While the dancers speak

²¹ Louise Levene, review of *Artifact* and *Eidos:Telos*, *The Sunday Telegraph*, Nov. 11, 2001.

²² Kisselgoff, "The Sound and the Flurry of William Forsythe," *The New York Times*, July 19, 1987.

relentlessly...the choreography bubbles away on the sideline...David Morrow's music barely registers."²³

Audience displeasure is directed in good part at scenes in many of Forsythe's evening-length works that are notable for their multiple, high-dynamic streams of sound and movement. Framed in sudden shifts between dim and stark lighting, these relatively brief scenes inundate the eyes and ears with floods of simultaneous input. For example, Michael Simon's stage set for part 1 of *Gänge* (1982)²⁴ featured a floor and two onstage walls studded with microphones. The strongly amplified and echoing sounds of dancers moving and striking the walls mingled with the dancers' shouted texts and Thomas Jahn's jarring score as the profusion of short, frenetic scenes were punctuated again and again by sudden blackouts.

Though the *Gänge*'s audio-visual stress is sustained throughout the length of the work, such scenes are typically included roughly two-thirds of the way through Forsythe's evening-length works. Approximately half of *Artifact*'s nine-minute third act is a chaotic maelstrom of shouted text, rapid unannounced solos and duets, and scenery flats being knocked down in hard cross-light or near-darkness, set against a recording of construction site noise. The 1991 version of *The Loss of Small Detail*²⁵ also contains an approximately 4½ minute section of frightening intensity roughly two thirds of the way through. The blacked-out stage and auditorium are filled with Thom Willems' percussive

²³ Craine, review of *Decreation*, *The Times*, April 28, 2009, 16.

²⁴ The first part of *Gänge* was created in 1982 for the Netherlands Dance Theater. It subsequently opened the three-part *Gänge* (subtitled *Ein Stück Über Ballett*) Forsythe choreographed a year later as his first evening-length work in Frankfurt.

²⁵ The 1991 version of evening-length *The Loss of Small Detail* includes the one-act work *the second detail* (1991) as a prelude. An intermission occurs between the works.

rhythms and the altered voice of one of the dancers, while others, one of whom is naked save for full body paint, perform chaotic solos in a small lighted “pool” of snow or silhouetted against multiple screens projecting strobed and jittery video images. The lights and music briefly return to the work’s previous bleached setting, only to plunge unexpectedly back into darkness and cacophony. In one of *Decreation*’s scenes, the female protagonist urgently quotes an extended passage of text by French mystic Marguerite Porete against a backdrop of *sforzando* keyboard scoring, two performers belting fragments of ballads, eleven rapid, angular dance solos, and amplified, echoing slams of chairs and shoes that cue harsh lighting changes. The uneven timing structure of the sonic fragments and accents, along with the sharp, shifting movements of the dancers, undercut the ongoing monologue, standing out suddenly from the massed sound and movement. Early in the third act of *Three Atmospheric Studies* (2005), the stage lights dim and Thom Willems apocalyptic synthesizer score rises to a roar as dancers dodge erratically out of an advancing line before being hurtled to the floor by others. Once there, they are dragged away from and scrabble back to microphones which translate their frantic cries for help into grating, unintelligible static.

In effect, the careful balancing of multiple overlays of sounds create scenes of *sonic obscuration*, with torrents of sound overwhelming the ear as multiple voices compete for attention and blasts of sound override others. The multicentrism and manifold sonic streams of these scenes, together with distortion effects, lighting (or perhaps more aptly, darkening), spatial placement of performers, and dance action keep any one source from sustaining a presence as the dominant parsable figure or voice.

Instead, chaotic, competing pluralities of sound and movement tax visual and aural perception, filling the senses with relentlessly overwhelming activity whose points of origin and impetus are rendered unclear by the interference of the whole. As such, it can be said that these relatively brief scenes of cacophony and turbulent action, which provide shocking dynamic contrast to the remainder of the works, are to a great extent constituted of compounded visual and sonic “noise,” in contrast to other more subdued and “musical” sections of works. This contrast picks out the theater as a space of otherness: by interrupting the dance performance’s pervasive harmonic backdrop of music, it inverts Attali’s schema of music’s sacrificial function of providing a comforting alternative to the norm of “killing” Dionysian noise.

The scenes described above constitute spectacle in its more theoretically grounded form: an arresting display of “excesses of power,”²⁶ an engulfing perceptual onslaught that replaces dramatic depth with sensuous surface, stunning the senses and thereby damping critical reflection. However, though these scenes of jarring visuo-sonic cacophony have much in common with organized, harmonic displays of massed bodies and/or sounds, they *move* audiences to an affective experience which I claim at least approaches the sublime. Science-fiction film scholar Greg Tuck clarifies the distinction thus:

At simplest level both the spectacular and the sublime can be understood as visually extraordinary experiences, albeit in distinct ways (. . .) Both spectacle and sublime are perceptually impressive at a cognitive level, but only the latter produces an often-fearful sense of wonder, while the former is about the pleasure of wondering how it was done. The spectacular and the sublime have an inverse

²⁶ See Baz Kershaw, “Spectacles of performance: excesses of power,” in *Theatre Ecology: environments and Performance* (New York & Cambridge: Cambridge University Press, 2007), 206-38.

relationship with regard to our faith ‘in’ and understanding ‘of’ the conceptual and perceptual aspects of such displays. Spectacles might be impressive and fun, but there is something shallow or depthless about them, while the sublime is the complete opposite, a moment of extraordinary metaphysical density.²⁷

Tuck further maintains that though cinema’s affect has typically been theorized as spectacular, it also contains the possibility of “*potentially* exceeding the simply spectacular and connecting us with the sublime” [italics original].²⁸ In the grip of this state, we are not merely impressed or pleased but are instead struck by awe and even fear, rendered solely reliant on reason, the means by which we make sense of the world, to comprehend the intensity of the experience.

Incisive insight into this condition is offered in a 1974 paper by environmental psychology pioneer Joachim Wohlwill. Discussing settings that are saturated with extremely high levels of information, Wohlwill draws a distinction between the terms *sensory overload* and *sensory overstimulation*, reserving the former term for conditions under which individuals must process information in order to produce an appropriate response, rather than experiencing more passive exposure to concurrent or competing stimuli.²⁹ Wohlwill’s perspective is that a full breakdown of response is only likely to occur in situations in which overlapping streams of information require differential responses.³⁰ While cognitive research carried out in the 1970’s on sensory overload sought to measure impairment of subjective state and task performance rather than to pinpoint the breakdown of response capability, it showed that both cognitive function and

²⁷ Tuck, “When more is less: CGI, spectacle, and the capitalist sublime,” *Science Fiction and Television* 2, no. 2 (Autumn 2008): 251-2.

²⁸ Ibid., 255.

²⁹ Wohlwill, “Human Adaptation to Levels of Environmental Stimulation,” *Human Ecology* 2, no. 2 (1974): 3n.

³⁰ Ibid., 142.

psychophysiological well-being are negatively affected by extreme surfeits of information. Various studies demonstrated that individuals subjected to intense auditory and visual stimuli, such as randomly patterned colored lights and cacophonous sounds, experience psychedelic effects including hallucinations, distorted perceptions of time and body image, mood shifts, and symptoms of paranoia, as well as reduced performance on cognitive tasks.³¹ On a less invasive but also detrimental level, environmental noise has been shown to negatively influence evaluations of life quality due to increased annoyance and tension.³²

Though the literature of this period is strongly tied to cultural interests in “altered” states of consciousness and the detrimental effects of urban environments, it nonetheless invites comparison to the demands that contemporary performance makes on audiences, as well as to subjective experience of this demand. In particular, it calls for consideration of the ways in which conditions of high stimulation such as the “noisy” and chaotic scenes found in the latter part of many of Forsythe’s evening-length works might produce a spectacular performativity which overwhelms and *stuns* audiences. Though the scenes in question are brief, they occur at points in the works at which audience perception has already been highly aroused and sensitized by the contrasting and

³¹ See for example L. Gottschalk, J. Haer, and D. Bates, “Changes in social alienation, personal disorganization, and cognitive-intellectual impairment produced by sensory overload,” *Archives of General Psychiatry* 27 (1972): 451; L. Gottschalk, J. Haer, and D. Bates, “Effect of sensory overload on psychological state,” *Mental Health Digest* 5 (1973): 29-31; J. Haer, “Alterations in consciousness induced by sensory overload,” *Journal for the Study of Consciousness* 3 (1970): 161-169; J. Haer, “Field dependency in relation to altered states of consciousness produced by sensory overload,” *Perceptual and Motor Skills* 33, no. 1 (1971): 192-94; A. Ludwig, “‘Psychedelic’ effects produced by sensory overload,” *American Journal of Psychiatry* 128 (1972): 1294-1297; and Z. Lipowski, “Sensory information and overload: behavioral effects,” *Comprehensive Psychiatry* 16 (1975): 199-221.

³² See Jack Westerman and James Walters, “Noise and Stress: A Comprehensive Approach,” *Environmental Health Perspectives* 41 (1981): 291-309.

demanding informational and perceptual dynamics of prior scenes or acts. It is to this dynamic, which is found even more frequently in Forsythe's works than the scenes described above, that I now turn.

6.3.2 Lull: unsettling minimalism

In contrast to the overwhelming qualities of sound in the scenes described above, many other scenes in Forsythe's works or entire shorter works are underpinned by what is commonly termed "minimalist music." As Edward Strickland clarifies, in the 1970's this term, which was coined by composer and music critic Michael Nyman, became the designation favored over numerous others including "hypnotic music," "pulse music," "trance music," "process music," "modular music," and "systemic music."³³ The predominant characteristic of minimalist music is rhythmic, tonal, or timbral patterning that remains constant or transforms gradually over longer periods. Among the forms this relative stasis takes are reiterative musical figures such as *ostinati* (short melodic phrases or rhythmic patterns which persistently repeat at the same pitch and with the same instrumentation), pulses, sustained drones, and phase shifting (multiple performers varying tempo very slightly before "locking in" again on an individual tempo).

As the list of terms above shows, minimalist music is noted for its hypnotic, potentially trance-inducing qualities. These are also found in both traditional and "new age" music, in which long passages of chanting, vocal or instrumental drones, and repetitive figures are intended to produce relaxation or support meditative states.

³³ Edward Strickland, *Minimalism: Origins* (Bloomington: Indiana University Press, 2000), 17.

“Trance” music associated with rave culture also offers these and similar characteristics, albeit with more complex structure and at higher tempi and volume levels. However, whereas trance music tends to energize listeners, it too is noted for its ability to induce shifts of conscious experience. It is noteworthy that trance music is often presented in tandem with light shows whose brightness, complexity, and cross-modal coordination further support the occurrence of non-ordinary subjective experiences.

Under receptive conditions, repetitive sound patterns such as *ostinato* phrases, chants, pulses, and sustained static sound structures can lead to an attentional shift, first theorized by musicologist and *musique concrète* pioneer Pierre Schaeffer, called reduced listening (*écoute réduite*).³⁴ Typically, we process emergent features of sound streams as perceptual cues, aiming to establish associations between the sounds heard and sounds stored in memory. Because repeating sound patterns and static tones offer little new information or cues to the aural perceptual system, the focus of listening shifts away from comparative, memory-based activity and towards the sound’s intrinsic, molar aspects. In reduced listening, we essentially turn a new ear on sound, one which foregrounds fundamental qualities such as pitch, rhythm, timbre, and texture. The shift of attentional focus that occurs in reduced listening due to the reduced occurrence of new perceptual cues is likely to contribute to the hypnotic effect of both minimalist and “trance” music.

However, though such music relies for its effect on a slowing of the rate of occurrence of new information in order to shift attention to the molar level, it is never completely monotonous or repetitive. Instead, hypnotic sound typically features minor

³⁴ Schaeffer, *Traité des objets musicaux* (Paris: Seuil, 1966). See also Michel Chion, *Guide des objets sonores: Pierre Schaeffer et la recherche musicale* (Paris: Buchet/Chastel, 1994).

structural alterations in the form of shifts of pattern, volume, or density. As I will clarify below, such small details are a key mechanism through which Forsythe engenders and sustains a perceptual performativity in which, in contrast to that of the scenes of overwhelm described above, conditions of visuo-sonic *lull* are briefly and iteratively disrupted.

Several of Forsythe's works are either scored entirely to music with *ostinato* patterning or contain *ostinato* sections. Some earlier evening-length works feature *ostinato* passages of briefer phrase length, in which rhythms emerge by virtue of the higher frequency of repetition, the structures of the *ostinati* themselves, or both. During these rhythmic passages, Forsythe stages the performance of complex, often balletic canons by large numbers of dancers. For example, *ostinato* passages figure prominently in the opening and final acts of *Artifact*, whose piano score is comprised of Eva Crossman-Hecht's variations on the Bach *Chaconne* that accompanies the work's second act. Forsythe explains that *ostinato* patterns figure in *Artifact*'s engagement with ballet as a historical construct in that *ostinati*, like ballet, has figured in numerous musical epochs, including Baroque, minimalism, jazz, and popular music.³⁵ *Artifact*'s first act is comprised of fifteen mostly brief scenes, four of which are accompanied by *ostinato* motifs which last no more than six seconds, while its fourth act contains five *ostinato* passages out of a total of nine distinct musical scenes. The *ostinato* scenes, which Forsythe and the ensemble refer to by names like "Hypno" and "Herd," are the longest in the acts, ranging from just over one minute to almost seven minutes. All are marked by

³⁵ Forsythe, personal discussion with the author, March 9, 2010.

subtle melodic augmentations and slow *crescendi*. During four of the nine *ostinati*, repetitive interlocking clapping patterns provide an additional *ostinato* overlay.³⁶

During all of *Artifact*'s *ostinati*, large groups of dancers move through dim light or are silhouetted in stark backlighting as they perform dense, rhythmic, movement canons with occasional *unisono* dancing in formations reflecting the spatial patterns of *corps de ballet* dancing. The canon phrases are of different lengths than the *ostinato* phrases, producing constantly shifting relations between the repeating musical and visual motifs. Sharing the stage with the ensemble in these scenes are a silent, pale grey figure named in the program as the "Other Person" who emerges from under the stage to provide a visual counterpoint to the ensemble's gestures, and two speaking characters, a "Person in Historical Costume" and a "Person with Megaphone," who, among other things, enjoin us to "forget the dust, forget the sand, forget the dirt, forget the rocks."

Another rhythmic *ostinato* section with canon structurings and irregular lengths relative to the music also occurs in the evening-length *Eidos:Telos* (1995). During a slow, nine-minute *valse triste* scene, the "ranks of the dead" – a large *corps de ballet* of male and female dancers in long, bustled skirts – weave in lines through the stage space and around speaking characters, performing broad, sweeping *pas de valse* steps in complex canons. This scene, like many of those in *Artifact*, evokes the "white acts" of romantic and classical ballets through its use of steps from the classical codex. More recently, in *I don't believe in outer space* (2008), the members of the "Voodoo scene" *corps* move randomly about the stage to a quietly percussive, layered sample loop by Thom Willems,

³⁶ See also Salter, "Timbral architectures," 69-70.

executing one of three highly similar rhythmic stepping phrases while other performers produce an erratic vocal counterpoint to the rhythmic music score and movement.

In addition to these scenes within works, a number of Forsythe's later one-act works are staged entirely to *ostinati* with longer, less rhythmic phrases. The 1994 work *Quintett* is performed to Gavin Bryars' 1971 composition "Jesus' Blood Never Failed Me Yet," in which a 25-second long stanza of a hymn is repeated over 60 times while the instrumental accompaniment to the phrase becomes gradually denser with each repetition. *Pivot House* (1994) is performed to part of the 65-minute gamelan composition *Sirimpi (Provisions for Death)* by Kraton Surakarta, as is Part I of the two-part *Endless House* (1999).³⁷ The score of *Hypothetical Stream II* (1997) is a resonant wash of long, low tones and intermittent hush by Stuart Dempster (*Standing Waves* (1976)) and Ingram Marshall (*Fog Tropes* (1979)).

The slow or nonexistent metres and long phrases of the *ostinati* in these works provide little in the way of rhythmic support for the dancing. Instead, they create evocative space for dancing which proceeds relatively independent of the music, usually at markedly faster tempi and without continuous rhythmical structure. Because the longer repetitive scores also offer little in the way of temporal landmarks, various strategies are used to navigate them, including digital displays placed in the wings indicating the time in the score, or, in the case of *Quintett*, which count the repetitions of the sung phrase. In *Wolf Phrase* (2001), a languid, slightly irregular *ostinato* loop by Ekkehard Ehlers underscores spoken passages and duets in which the performers improvise on a lengthy

³⁷ See also Salter, *Unstable Events*, 91-3.

set phrase of choreography and specific improvisational modalities, offering and exchanging small fragments of movement. The improvisations, as well as the original phrase, proceed in turbulent, unpredictable swells that reflect the metaphor of ocean waves in Woolf's novel *Mrs. Dalloway*. Though the lengths of *Woolf Phrase*'s improvised passages are not anchored in any way, their durations are relatively fixed, and Forsythe will offer a correction if he feels that the dancers ended the sections too soon or made them too long.

As the descriptions above show, Forsythe's choices with regard to *ostinato* and choreographic structures fall into two distinct categories of musical reference, ensemble size, and aesthetic style, depending on the tempo and phrase length of the *ostinati*. To shorter, rhythmic *ostinati*, Forsythe sets large groups of dancers moving in unison canons of irregular lengths. In his earlier works, these canons strongly reflect the classical ballet codex. To the longer, slower *ostinato* phrases found in more recent works, Forsythe stages smaller groups of dancers moving at irregular and usually more rapid tempi. These two categories can be said to correspond to his earlier and later works, though they do overlap across his *oeuvre*.³⁸

In both of these cases, the reduction of novel information through repetition in the music, the steps, or both underpins the *ostinato* scenes' hypnotic qualities. However, against the lull of musical and choreographic repetition, Forsythe inevitably stages or includes elements that encroach perceptually on the flow of visual or sonic action.

³⁸ It is worth noting here that in many cases, the scores of Forsythe's works are composed or mixed during rehearsals in response to movement material being created or scenes being staged. In spite of the collaborative nature of the compositional process, though, Forsythe does have the final word regarding sound elements offered by his composers, sound designers, or dancers.

Musically, these include accents such as the shifts of motif and *sforzando* piano chords in *Artifact* and the *keprak* (wooden block) accents and brief shouted calls by male performers in the *Sirimpi*. In some cases, particularly the improvised compositions of Thom Willems,³⁹ Forsythe refers to these as “disturbers,”⁴⁰ musical gestures which occur unexpectedly against underlying motifs and thus stand out as figures against the musical background.

Referring to the music of Willems, who has composed over 80 works for Forsythe including *The Loss of Small Detail*, *Eidos:Telos*, and *I don't believe in outer space*, Eva Fischer notes the variety of forms these sonic overlays take and draws an explicit parallel to the encroaching noise of the postmodern world:

(W)e are dealing here with the ‘melody’ of today's urban life, as might be heard in Amsterdam, Tokyo, Hong Kong or New York. Harsh synthesizer blasts give the impression that someone living in a busy street has suddenly opened his double windows. And even when the windows, so to speak, are shut again, there remains, in the background of these passages - sometimes rarefied, sometimes rhythmically excited - a disturbing murmur that reminds one that there is a threatening world outside and leaves traces of sound (. . .) His music brings together extreme contrasts: the dry editing of action films and the crevices between two skyscrapers contrast their speed and vertiginous falls with carpets of sound that seem to make the background hum barely noticeable.⁴¹

In the works of Willems, Crossman-Hecht (*Artifact*), Ekkehard Ehlers (*Woolf Phrase*, with Thom Willems), and other composers, disruptions fleck the sonic “carpet” (in German: *Klangteppich*) of *ostinati*, evoking brief orienting returns of perception to associative processing of emergent figures before giving way again to the flow of the

³⁹ To clarify, when Willems plays live in Forsythe’s performances, he does not play “free” improvisations but augments preplanned sound structures (often underlying tone loops) with musical gestures or phrases in improvised response to the dance performance. See also Vass-Rhee, “Dancing Music, 74-90.

⁴⁰ Forsythe, in rehearsal with Thom Willems for *Whole in the Head*, November 16, 2010.

⁴¹ Fischer, “Thom Willems,” www.frankfurt-ballett.de/thom_willems.htm (accessed May 31, 2003).

background. In this regard, minimalist soundscapes featuring such interruptions function similarly to the scenes of *hush* described in the previous chapter, in which the depth of attention to sound is repeatedly shifted through dramatic changes in volume level.

Further, in contrast to Forsythe's cacophonous and chaotic scenes, which constitute "noisy" disruptions on a whole-work scale, the brief disruptive overlays to *ostinati* figure into Forsythe's choreography of attention on a finer-grained level. As such, Forsythe's works include this choreographic strategy in nested hierarchies of events and subevents.

In addition to musical interruptions, the majority of Forsythe's *ostinato* scenes are also marked by irregularly patterned disruptive events onstage which, critically for my analysis, are sonic as well as visual. In all but three of the fourteen *ostinato* sections in *Artifact*'s first and fourth acts, the two speaking characters generate interference by various means: in several scenes, the "Person in Historical Costume" speaks to the audience from downstage; in one, she claps counterpointed patterns with the ensemble; in another scene, the "Person with Megaphone" wanders among the women's *corps* periodically tapping the floor as if trying to locate the silent, ghostly "Other Person" beneath the stage; and in other scenes, both speaking characters cross the stage space while arguing with each other. In *Eidos:Telos*, a total of four speakers populate the "ranks of the dead" waltz, including a female performer on a cell phone arguing about a missing camera in the scene and a male performer who wanders through the ensemble bemoaning the fact that he is dead and delivering a juvenile tirade of highly graphic threats. *Outer Space*'s milling "voodoo" *corps* frames two speakers, a silent "percussionist," and a duet and quartet of rapidly twining dancers, two of whom emit crying noises in response to the

tasks of the quartet.⁴² Even *Quintett*, which is perhaps the quietest of the *ostinato* works, contains a brief duet passage of rhythmic, audible stamping.



Figure 6.1 Enemies in the figure: Kate Strong (Person in Historical Costume) and Nicholas Champion (Person with Megaphone) argue their way through one of *Artifact*'s balletic canons. Bavarian State Ballet. Photo Wilfried Hösl.

Similar dynamics of informational reduction and visuo-sonic disruption occur in scenes of Forsythe's works which are choreographed to musical drones, another characteristic form in minimalist music which shares the hypnotic perceptual qualities evoked by *ostinato* repetitions. In contrast to the roiling action staged to slower *ostinati* and the complex, rhythmic canons set to those with a faster, *marcato* tempo, the

⁴² In the original Frankfurt season of *I don't believe in outer space* in October 2008, which was performed on a wider stage than all subsequent performance series, this scene contained the two speakers and silent "percussionist," a danced quartet, trio, duet, solo, and the *corps*. The "Voodoo" step sequences have remained the same through all versions of the piece. This description refers to versions performed from 2009 onwards.

movement in drone scenes tends to be reduced in both scale and complexity. The 1991 version of *The Loss of Small Detail* opens with 10 minutes of a slowly building, increasingly discordant drone, during which dancers calmly reposition small stools and perform brief, unannounced solos of soft, disfocused movement. Over and over again, Dana Capsersen, who bends over a table onstage whispering text, is lifted smoothly away by a male performer before being released to return and resume whispering. In the original version of *7 to 10 Passages* (2000),⁴³ one of several Forsythe works whose dramaturgy is centered on the failed expedition of Robert Scott and its attendant ideas about technological prowess and human fallibility, a line of dancers moves slowly downstage to Thom Willem's texturally rich drone for the first 13 minutes of the work, selectively articulating minute sub-component motions of the "Tuna" phrase of choreography. Punctuating this section are two clocked freezes and texts spoken by four performers seated at tables.

Forsythe's use of drones often subverts the strategies of sonic overwhelm described above. As Salter comments on the third part of *Eidos: Telos*:

Here, Willems and (Joel) Ryan push *Eidos: Telos*'s sonic evolution to its (ironically) ultimate telos, building up thundering waves of sound based on the same multi-tap delay technique of mutating individual notes played by the trombones into drone-like lines and layering these drones into a wall of sound that has the sonic force of a tidal wave.⁴⁴

Similarly, during two scenes in *Decreation*, the ensemble blends their voices with the musical score to produce lush, hypnotic droning chords. The first of these, a relatively quiet chord which underlies a circular argument between characters, can be considered a

⁴³ A revised version of *7 to 10 Passages* was performed in Dresden in September, 2010.

⁴⁴ Salter, "Timbral architectures," 64.

precursor to the later climactic drone scene, during which David Morrow's keyboard and the combined voices of eleven singing dancers build a rich, resonant F major ninth chord which is sustained for over three and a half minutes. Five singing dancers first pace lightly forward and backward as two trios form at microphones downstage and upstage. As the chord reaches a sustained height, it is overcut visually and aurally by a series of events. The "husband" figure, seated in a chair at one side of the stage, first calls off-mic to another male performer seated downstage center, "Come here, I want to hold you." The stage begins to darken as the two men meet and bridge against each other, locked head to head, while another duo twines on the floor further upstage. Two soft spotlights pick out first one female vocalist and then another at microphones, the first bending almost double to produce a high, loonlike cry and the second writhing towards the front of the stage, silhouetted in the bright green light of a screen. Finally, three male performers intone lines of echoing text into a microphone held by a fourth. The stage then begins to brighten, the chord slowly dissipates, and the dancers transition to the next scene.

At the points described in the works above, the tempo of visual and sonic structuring undergoes an extreme slowing relative to other scenes in the works. The light, smooth, and often subtle movement Forsythe sets to drone passages support the suspended, lulling quality of the music through its limitations on broad gesture and sharp accents. *Decreation's* drone sustains an essentially static aural structure while the dance movement softens and simplifies, reducing to gentle loping and slow torquing. The effect



Figure 6.2 Ludicrous dust: the final scene of *The Loss of Small Detail*. Photo: Dominik Mentzos.

of softening is achieved by startling technical means in the discordant drone reprise finale of *The Loss of Small Detail*, in which the light, unstable solos and duets of the work's opening are replaced by jolting, jagged movement. The drone builds to an immense crescendo as waves of heavy stage snow – the “ludicrous dust” mentioned in a quote by

Yukio Mishima at the work's outset⁴⁵ – pulse down onto the stage, rhythmically engulfing the dancers and the voice of a male performer who, seated in a snowdrift, booms over and over in a foghorn-like, synthesized bass, “It’s snoooooowing.”

As shown in the previous chapter, Forsythe’s works involve a rhythmic *choreography of perception* that, by virtue of unexpected shifts in audio-visual form and dynamics, repeatedly unsettles and heightens attention. In the instances described in this section, these shifts are effected through the disruption of repetitive patterns, such as musical *ostinati*, drones, and visual canons, by unpredictable inclusions of novel sounds and movements. Though information is reduced through the use of both minimalist musical structures and repetitive dance movement patterns, the small irregular sonic details, together with the juxtaposition of different, shifting patterns that occur in the dancing, add an overlay of visual and sonic disturbance to established patterns. This compositional strategy is not limited to these works but is also found across Forsythe’s larger *oeuvre*, in which Forsythe typically stages manifold and counterpointed centers of visual interest that yield visual disruptions at the periphery of vision regardless of where one’s gaze is oriented. Coupling this strategy of polycentric visual action with repetitive canon structures, as is the case in the examples above, brings the attention-arousing effects of habituation and dishabituation into play. These visual dynamics find a parallel in the auditory strategy of pairing minimalist musical structures with interrupting overlays, creating repetitive, unanticipated alternations between lull and unsettling capture.

⁴⁵ Mishima, *Runaway Horses* (New York: Alfred A. Knopf, 1969).

I hold that critiques of Forsythe's sonic compositions such as those described in the previous section indicate more than just displeasure with Forsythe's use of cacophony and loud onstage speech. Instead, I argue that what they express is irritation at being repeatedly extracted from the NOSC of spectacular enchantment by Forsythe's use of what Ross Brown calls sonic "design through annoyance."⁴⁶ In all works involving *ostinati* and *drones*, Forsythe intensifies the affect of these scenes' hypnotic music as they proceed by increasing its volume and density, only to repeatedly disturb it through the means described above. The overlaying of irregularly timed disruptions on smooth, lulling flows of music and visual action causes a cyclic process of shift between figure and ground, in which viewer-auditors, awash in mesmerizing sounds and sights, are unexpectedly pulled from the pleasurable depths of spectacular experience back up to the surface level of recognition and association, before being released to settle back down into the wash of spectacularity. By contrast, the sustained, cacophonous scenes described earlier carry this disruptive pattern forward on a longer temporal scale, punctuating the full length of the works with scenes whose effect stems jointly from the overstimulation and the scenes' longer durations.

In tandem, I hold that sounds generated by performers onstage in Forsythe's works not only draw attention away from the underlying music but also focus audience attention on the individuals producing them, at the expense of attention to the massed bodies in motion. Sonic disruptions, particularly when they take the form of spoken text, are a highly effective means of capturing attention from the dancing due to our innate

⁴⁶ Brown, *Sound: A Reader in Theatre Practice* (New York: Palgrave Macmillan, 2010), 137.

proclivity to visually localize the sources of sounds and focus our vision as well as our audition on speech events.⁴⁷ The dancing, in essence, is alternately obscured and revealed by the presence and absence of disrupting noise, particularly speech. My view gains support from Forsythe's almost inevitable visual emphasis on sound events through lighting, spatial placement, or the simplification or slowing of ensemble movement, which literally "upstages" the moving ensemble and highlights or foregrounds vocalizers and others producing sound.

Whether the shifts between visual or sonic "music" and "noise" are of briefer duration, as in the repetitive overlays of minimalist musical structures and canons, or longer lasting, as in the visually and sonically chaotic scenes included in evening-length works, these alternations between spectacular transmission and occluding disturbance engender extractions from and re-submersions into the lulling, hypnotic state engendered by the spectacularity of hypnotic sound and movement. The spectator's confrontation with disruption in Forsythe's works is therefore simultaneously a confrontation with the desire to remain in a state of enchantment, swept away by order and harmony without being reminded of the noisy disorder of the real – to be left, as the "Person with Megaphone" says at *Artifact*'s outset, to "Forget the dust, forget the sand, forget the dirt, and forget the rocks."

⁴⁷ See for example Elizabeth Spelke, "Infants' Intermodal Perception of Events," *Cognitive Psychology* 8 (1976): 553-560. The power of the voice to capture attention is discussed more extensively in Chapter 8 of this dissertation.

6.4 Chapter conclusion

In this chapter, I have delineated two further types of spectacularity found in Forsythe's works and have described instances of these from across an over 25-year span of his *oeuvre*. I have analyzed conditions of audio-visual *overwhelm* and *lull*, accessing an interdisciplinary range of cognitive research to support my explanatory model and demonstrating how the choice of forms of visual and sonic information and their coordinations at these junctures in Forsythe's works engender dynamics of arousal in which shifts between hypnotic, seductive pattern and unexpected disruption have potent performative effects. The research referenced on the effects of these dynamics in music lend support to my claim that spectacular instances in performance events constitute forms of non-ordinary states of consciousness that have been neglected in cognitive studies in favor of other, more extreme manifestations. As in my previous chapter, where my grounding in cognitive research of dance practitioners' and theorists' observations on the effects of silence enables a more nuanced consideration of silence and its performative effects, this chapter's application of a cognitive lens to both Attali's views and public reception of Forsythe's works permits a finer-grained analysis of the music-noise dichotomy. This multiplicity of findings further demonstrates the productivity of cognitively grounded and multimodal piecemeal analyses of dance events. While the taxonomy of spectacular visuo-sonic engagements I have generated in these two chapters is far from complete, they frequently occur in the works of numerous other choreographers, offering avenues for further study and comparison.

The sustained periods of disharmonious, stunning perceptual overload in the scenes described in section 6.3.1 unexpectedly disrupt the relatively more harmonious patterning of larger works, confronting audiences with the limits of perceptual uptake and the non-normative experience of overstimulation. In contrast to melody-based music, in which the novel structuring of motifs draws attention to their unfolding and progression, the reduced information of the *ostinato* and “drone” scenes described in section 6.3.2 provides limited emergent detail, draws perception “downward” toward fundamental levels of sound perception and towards a hypnotic state. In parallel, the slowing and simplification of movement produces a relatively tranquil visual field that permits a relaxed vision that sweeps easily over the stage. However, the visual and sonic overlays in these scenes abruptly capture visual and aural attention, drawing it to specific individuals and the actions and sounds they make. The alternating states elicited by this irregular perceptual composition repeatedly lull and unsettle the spectator, first enabling spectacular pleasure and then withdrawing it by means of subtle but jarring disruption.

In this final chapter of sounding the spectacle, I have emphasized the privileged role of the voice in perception and in perceptual performativity. In the following two chapters, I focus on Forsythe’s more recent choreographic research in which he has refigured the voice of the dancer as an extension of both music and choreography. As I do so, I remain turned toward a breadth of diverse cognitive approaches and toward both the auditory and visual senses.

Chapter 7

Breath scores: synchrony, attention, and deception

7.1 Introduction

During the final years of the Ballett Frankfurt, and during the period of transition from the Ballett Frankfurt to The Forsythe Company, which began in 2002, Forsythe extended his consideration of the relation between dance and sound by investigating the performative potential of dance's own sounds. The ensemble's investigation of the sonic affordances of the dancing itself produced two principal sound-movement paradigms of what I term *visuo-sonic choreography*. This chapter is focused on the first of these modalities: what Forsythe calls "breath scores,"¹ which include not only breath gestures but also footfall, physical contact, and other sounds produced by bodies in motion. The second modality, improvisational paradigms in which the movement of dancing engenders fully vocalized sound, is the subject of the following chapter.

As shown in the review of discussions of Forsythe's work in chapter 2, sound is an aspect of Forsythe's work which has received limited critical attention since the beginning of his tenure in Frankfurt, with studies primarily considering the textual contents of earlier works. Few studies have considered Forsythe's works' non-textual sonorous aspects, and most studies that have referenced sound in Forsythe's work have done so either as a side note to the visual analysis or by investigating Forsythe's use of

¹ First quoted in Roslyn Sulcas, "The Force of Forsythe," interview with William Forsythe and Wendy Perron, *Dance Magazine* 80 (April 2006): 34-40.

music as accompaniment. Forsythe's investigation of the sonic potentials of dance movement, which has continued since the advent of The Forsythe Company in 2005, constitutes the most recent extension of his career-long investigation of ways that attentional and perceptual tendencies and limits can inform choreography and spectatorship. Choreographic strategies developed by the ensemble which link sound production to the action of dancing highlight the common cognitive ground shared by visual and auditory perception. The works described and analyzed in this and the following chapter reveal a focus on the perceptual propensity to merge sensory information across the senses of vision and audition. By interrogating this merging via visuo-sonic choreographic strategies, Forsythe deploys the aural channel – the perceptual channel through which textual significance usually reaches us – as a vector for a visceral, performative experience of corporeal significance.

The analyses presented in these two chapters are underpinned by two key emphases. Firstly, I show how Forsythe's choreographic deployments of performer-generated sound are grounded in intermodal perception across vision and audition. The structuring of the sonic components of the ensemble's recent works taps into proclivities of human event perception that also influence the production and coordination of speech and gesture. Secondly, my analysis reveals how choreographic interplay between sound and movement, with both visibly produced onstage, subserves Forsythe's broader choreographic strategy of heightening and dividing attention through a transgression of the sensory and physical boundaries that normally define the limits of dancing as a concept. In other words, Forsythe's performative merging of visual and sonic aspects of

dancing in choreographic processes relocates sound to the bodies of the performers, *re-visioning* a perceptual norm that has defined Western concert dance as a silent art practice with musical accompaniment. In doing so, Forsythe opens an arena in which to explore attention to and in performance from an intermodal perspective.

In this chapter, I analyze how breath scores influence attention to action onstage. I investigate this choreographic paradigm through the lens of research on intermodal perception, or the ways in which information from different sensory channels is cognitively merged into a coherent whole, as well as literature from the fields of neuroscience, film studies, developmental psychology, and gesture studies. Apart from showing the ways that the breath score affords both the heightening and dividing of both performer and audience attention, my analysis also aims to show how the breath score produces opportunities to exploit to performative ends the simultaneity of visual and aural perception.

As in previous chapters, my objective here is to approach the choreographic strategy at hand from a perspective that applies cognitive research to choreographic practice and performance. Examining Forsythe's work from a multisensory perspective grounded in empirical studies provides a twofold benefit: firstly, an innovative and highly informative theoretical perspective on dance, and secondly, an opportunity for dialogue with theories commonly brought to bear on the phenomenon.

The first section below (7.2) provides an overview of research on audio-visual intermodal perception. Following this background information, I describe the emergence of the breath score as a choreographic paradigm, detailing how amplification is deployed

during performances in order to heighten audience attention by optimizing the balance between visual and aural information in response to the emergent performance and to audience attention levels (Section 7.3.1). In the next section (7.3.2), I describe the breath score of part 1 of the currently performed version of the evening-length work *Three Atmospheric Studies*², which features a breath score as its only sonic element. In this section, I apply research on intermodality to show how the breath score supports this work's dramaturgy by appealing to contrasting attentional drives. In the following section (7.3.3), I reference research from gesture studies to focus on the deceptive potential of intermodal choreography.

7.2 Background

Humans are virtually the only species capable of synchronizing movements to accompanying sound such as music.³ The recent discovery of mirror neurons in primates⁴ and evidence that such a system may be present in speech-processing areas of the human brain⁵ offers support for the motor theory of speech and speech perception, according to

² The original version of *Three Atmospheric Studies*, which premiered in Frankfurt am Main in April 2005, consisted of two parts, the second of which became part 3 of the current version. *Clouds After Cranach*, which premiered in Frankfurt in November of the same year, consisted of the work's current parts 1 and 2 performed on two stages facing each other, with the audience relocating between the two sections. *Three Atmospheric Studies* was first performed as a three-part evening in Berlin in February 2006.

³ For a study of movement synchronization to music observed in a Sulphur-crested cockatoo (*Cacatua galerita eleanora*), see A.D. Patel, J.R. Iversen, M.R. Bregman, I. Schulz, and C. Schulz, "Investigating the human-specificity of synchronization to music," in *Proceedings of the 10th International Conference on Music Perception and Cognition*, August 2008, Sapporo, Japan.

⁴ Gallese et al., "Action recognition," and Rizzolatti et. al., "Premotor cortex."

⁵ M. Heiser, M. Iacoboni, F. Maeda, J. Marcus, and J.C. Mazziotta, "The essential role of Broca's area in imitation," *European Journal of Neuroscience* 17 (2003): 1123–8; S.H. Johnson-Frey, F.R. Maloof, R. Newman-Norlund, C. Farrer, S. Inati, and S.T. Grafton, "Actions or hand-object interactions? Human inferior frontal cortex and action observation," *Neuron* 39, no. 6 (2003): 1053–8; and D.R. Lametti, & A.A.G. Mattar, "Mirror neurons and the lateralization of human language. *Journal of Neuroscience* 26

which speech perception is facilitated through access to one's own embodied experience of the vocal gestures required to produce the sounds heard.⁶ These mechanisms may also underlie the coordination of gestures with musical qualities such as rhythm, pitch, and dynamics. Since the early 20th century, the connection between sonic gestures in music and physical motion has been explored from perspectives including movement theory,⁷ music theory,⁸ and film theory.⁹ As Daniel Levitin and Anna Tirovalas have recently observed,

Dance can be conceived as an extension or complementary correlate of the movements required to create music...the connection between music and dance can be thought of as an extension of the movements required for vocalizing simply applied to other body regions.¹⁰

Since the 1980's, research on infant perception has aimed to define the innate human cognitive abilities and proclivities that underpin adult perception. Much of this research has focused on perceptual behavior of infants, who have been shown to possess innate, abstract understanding of the physical and social reality of the world they live in. Though they cannot talk, infants robustly express their interest through measurable behaviors such as gaze and sucking rate. Much infant research has been based on visual

(2006): 6666-7.

⁶ See Alvin Liberman, "On finding that speech is special," *American Psychologist* 37, no. 1 (1982): 148-67; and Alvin Liberman and Ignatius Mattingly, "The motor theory of speech perception revised," *Cognition* 21, no. 1 (1985): 1-36.

⁷ See Émile Jaques-Dalcroze, *Rhythm, Music, and Education*, H.F. Rubenstein, transl. (London: The Dalcroze Society, 1921/1967).

⁸ See Eduard Sievers, *Ziele und Wege der Schallanalyse* (Heidelberg: Carl Winters Universitätsbuchhandlung, 1924); Gustav Becking, *Der musikalische Rhythmus als Erkenntnisquelle* (Augsburg: Benno Filser, 1928); and Alexander Truslit, *Gestaltung und Bewegung in der Musik* (Berlin-Lichterfelde: Chr. Friedrich Vieweg, 1938).

⁹ See Sergei Eisenstein, "A Dialectic Approach to Film Form," *Film Form: Essays in Film Theory*, transl. Jay Leyda (New York: Harcourt, 1949).

¹⁰ Daniel Levitin and Anna Tirovalas, "Current Advances in the Cognitive Neuroscience of Music," in *The Year in Cognitive Neuroscience 2009*, Michael Miller and Alan Kingstone, eds. (Oxford: Wiley-Blackwell, 2009), 218.

attention and employs the habituation-dishabituation paradigm, in which a research subject is accustomed to a stimulus through repetition and then presented with a stimulus containing some form of variation. This research has revealed that infants as young as three months possess the ability to discern variances and discrepancies in perceptual aspects including object constancy,¹¹ event causality,¹² and the expression of intention.¹³ This research stands in contrast to William James' claim that the infant experiences the world as "one great blooming buzzing confusion"¹⁴ and to that of Jean Piaget, who held that children do not understand the predictable nature of objects in the world until they are two years old.¹⁵

My approach in this chapter is informed in part by infant research on intermodal perception. In addition to being able to discern the perceptual aspects mentioned above, infants also demonstrate an understanding of the intermodal nature of perceptions. On one hand, infant attention is strongly drawn to anomalous perceptual phenomena, such as

¹¹ Foundational references include A. Slater, A. Mattock, & E. Brown, "Size constancy at birth: Newborn infants' responses to retinal and real size." *Journal of Experimental Child Psychology*, 49, no. 2 (1990): 314-22; R. Baillargeon, "Object permanence in 3.5- and 4.5-month old infants. *Developmental Psychology* 23 (1987): 655-64; R. Baillargeon and J. DeVos, "Object Permanence in Young Infants: Further Evidence," *Child Development* 62, no. 6 (1991): 1227-46; and A. Slater & V. Morison, "Shape constancy and slant perception at birth," *Perception*, 14, no. 3 (1985): 337-44.

¹² See for example W.A. Ball, "Perception of causality in the infant" paper presented to the Society for Research in Child Development, Philadelphia, PA, 1973; R.W. Borton "The perception of causality in infants" paper presented to the Society for Research in Child Development, San Francisco, CA, 1979; and A.M. Leslie, "The perception of causality in infants" *Perception* 11, no. 2 (1982): 173-86.

¹³ See for example A. Meltzoff, "Understanding the intentions of others: Reenactment of intended acts by 18-month-old children," *Developmental Psychology* 31, no. 5 (1995): 838-50; M. Tomasello, "Having intentions, understanding intentions, and understanding communicative intentions," in *Developing theories of intention: Social understanding and self control*, P.D. Zelazo & J.W. Astington, eds. (Mahwah, NJ: Lawrence Erlbaum Associates, 1999), 63-75; D.A. Baldwin, "Interpersonal understanding fuels knowledge acquisition," *Current Directions in Psychological Science* 9, no. 2 (2000): 40-5.

¹⁴ James, *The Principles of Psychology* 1 (New York: Dover Publications, 1950; originally published 1890), 488.

¹⁵ Piaget, *The Origins of Intelligence in Children* (New York: International Universities Press, 1952).

objects that appear to violate principles of physics.¹⁶ This reflects an innate cognitive imperative in humans to attempt to infer the structural coherence of complex intersensory events. However, in the overwhelming majority of naturally occurring events, perceptual information is *amodal*, or redundant across more than one sense modality, such as vision and sound or vision and tactility. The sonic qualities of knuckles knocking on a door, for example, bear direct and synchronous relation to the location, timing, and visually perceivable effort of the action of the knock. If offered a choice between an incongruent audio-visual stimulus and an amodal stimulus, infants will preferentially attend to the latter, indicating a preference for information that reflects “real world” perceptual events. In Elizabeth’s Spelke’s pioneering studies of intermodal perception, infants were presented with video images of two toy animals bouncing at different rates, accompanied by a recorded sound corresponding to the impacts of one of the animals but not the other. The infants tested preferentially looked at the toy whose impacts were in synchrony with the sound rather than the out-of-sync stimulus.¹⁷

Complex structured systems of co-occurring visual and sonic events offer themselves perceptually in terms of structural intention of potential patterns. Eleanor Gibson, who in the 1960’s applied James Gibson’s ecological theory of perception to the study of perceptual development in infants and toddlers, held that the perceptual learning of children, as well as adults, is characterized by a process of increasing ability to

¹⁶ See for example P.J. Kellman & E.S. Spelke, “Perception of partially occluded objects in infancy” *Cognitive Psychology* 15 (1983): 483-524.

¹⁷ Spelke, “Infants’ intermodal perception,” and Spelke “Perceiving bimodally specified events in infancy,” *Developmental Psychology* 15 (1979): 626-36.

differentiate more specified levels of stimulation.¹⁸ In other words, as we mature we progress from being able to perceive global, abstract qualities of information, such as amodality, to being able to discern more refined levels of information about objects and events. As Bahrick and Hollich point out, this principle reflects infants' early preference for amodal information common to multiple sense modalities and thus able to serve as a "framework" for later perception.¹⁹

Research on audio-visual intermodality thus reveals contrasting drives that influence attention to perceptual events. The high salience of amodal information persists into adulthood. However, because we also bear a biological imperative to notice and infer patterns in non-redundant intersensory information, our attention is also aroused by incongruities across differing sensory modes. By attending to the synchronous sight-sound relations of everyday perceptual events, infants reinforce their developing perception and scaffold further perceptual learning. In the years following infancy, the ability to perceive finer grained information increases, bringing with it perceptual possibilities that stand at odds with the innate preference for amodal stimuli. In what follows, I show how the breath score both broadens the range of modal options and enhances the intimacy of performance.

¹⁸ E. Gibson & A.D. Pick, *An ecological approach to perceptual learning and development* (New York: Oxford University Press 2000).

¹⁹ L.E. Bahrick & G. Hollich, "Intermodal perception," in *Encyclopedia of Infant and Early Childhood Development* 2, M. Haith & J. Benson, eds. (Amsterdam & London: Elsevier Ltd./Academic Press, 2008), 164-76.

7.3 Breath scores

7.3.1 The development of the breath score: *Duo*

The conscious experience, control, or emphasis of breathing is a fundamental principle of techniques of yoga, martial arts, and more recent somatic practices such as those developed by Frederick Matthias Alexander, Moshé Feldenkrais, Joseph Pilates, Lulu Sweigard, Irmgard Bartenieff and Irene Dowd.²⁰ In many modern and contemporary dance traditions, including Graham, Horton, Limon, and release techniques, the breath is used to support or instigate movement. Many of Forsythe's dancers, particularly those hired in Frankfurt, have had experience with these and similar movement techniques and somatic practices.

As noted in Chapter 2, Forsythe has facilitated performers' co-navigation through time in a variety of ways, including "clock time," verbal or gestural cues, and real-time visual or sonic cueing by the choreographer. In the late 1990's, Forsythe choreographed several works in near-silence that involve precise and distinctive "breath scores" consisting not solely of the breath sounds of the performers but also of their slides, footfall, slaps, falls, and other noises. The dancers in these works use these auditory cues to synchronize and connect their actions, navigating the choreography's space and time not by means of external accompaniment or solely through visual cues, but through a

²⁰ See for example Alexander, *Man's Supreme Inheritance*, (London, Methuen, 1910); Feldenkrais, *Awareness Through Movement: Health Exercises for Personal Growth* (New York and London, Harper & Row, 1972); Pilates, *Pilates' Return to Life through Contrology*, (Incline Village: Presentation dynamics, 1945); Sweigard, *Human Movement Potential: Its Ideokinetic Facilitation* (New York, Harper & Row, 1974); Bartenieff and Dori Lewis, *Body Movement: Coping with the environment* (New York, Gordon & Breach, 1980); Hackney, *Making Connections: Total Body Integration Through Bartenieff Fundamentals* (New York, Gordon & Breach, 1998); and Dowd, *Taking Root to Fly: articles on functional anatomy*, (New York, Dowd, 1981).

combination of the visual and aural cues generated onstage. As they move, in other words, the performers rely on onstage sound as well as movement in order to track each other's progress through the choreography's phrases and to temporally "hook up" to each other again at specified points.

As further noted in chapter 2, earlier Forsythe works tend to emphasize aural perception through techniques such as low sound volume thresholds or sonic overload. Dietrich Krüger, who together with Niels Lanz designs sound and video for The Forsythe Company, notes that in the mid-1990s, Forsythe began to produce more works that involved only minimal sound accompaniment. Thom Willems agrees that his compositions have become a less dominant factor during the last 15 years. He describes his more recent works for The Forsythe Company as having become "more objects and less progressions."²¹ Forsythe's shift away from dominant musical scores and tendency toward minimal or no accompaniment has rendered ambient stage noise – the sounds generated by the performers as they breathe and make contact with each other and the environment – more audible to both audiences and the performers themselves.

In 2003, Forsythe began amplifying the breath scores of some works as a result of a chance solution to an attentional problem. That June, the Ballett Frankfurt performed *The Room As It Was* and *(N.N.N.N.)*, which had been created the previous year, on tour in São Paulo, Brazil. Lanz and composer David Morrow recall that the premiere audience in São Paulo, unaccustomed to the extreme quiet of these pieces, both of which involve breath scores and quiet accompaniment, made so much noise that the works' musical

²¹ Interview with Thom Willems, April 20, 2008.

“fill-ins” were not audible. For the second performance, Forsythe decided to position directional “shotgun” microphones in the front wings to amplify the works’ sonic choreography. The scaling up of the performers’ breath gestures and the hushed sounds of limb against limb had the desired result: the second evening’s audience was quieter and more attentively focused. Amplification was retained in subsequent performances of these works in São Paulo and other venues and was also added to *Duo* (1996), a work in which two female performers phase in and out of synchrony and complex counterpoint relations accompanied only by occasional faint, shimmering interpolations by Willems.

Importantly for this analysis, Forsythe’s amplification of the ambient sounds of performance harnesses the sonority of dance’s physical gestures as a means of heightening and focusing the attention of the audience, while distributing it across the modalities of vision and audition. Visible action onstage is scaled up into audiences’ auditory awareness, passing an auditory threshold to generate attentive interest. A similar effect was achieved in a 2000 installation work by Hans Peter Kuhn titled *Aquarium*. Here, 32 speakers, which hung above the installation space, emitted abstract unidentifiable sounds that could only be heard when standing very close to a speaker. The installation’s mobile audience, their attention subconsciously drawn by the small “pools” of sound, moved erratically through the space, creating patterns like the fish in an aquarium which were viewed by other spectators seated in a gallery overlooking the installation space.²²

²² See Christa Brüstle, “Auf Klänge aufmerksam (gemacht) werden: Strategien der Klangkunst,” in *Wege der Wahrnehmung: Authentizität, Reflexivität und Aufmerksamkeit im zeitgenössischen Theater*, Erika

In spite of the amplification of Forsythe's breath scores, however, the auditory features of the breath score's sounds, coupled with the audience's view of their ongoing production, render the greater number of them localizable and recognizable as the hushed sounds of motion and exertion.²³ The breath score thus exploits the multimodality of human movement, the perceptual proclivity to discern the sources of sounds, and viewer knowledge of the sonority of corporeal gestures, to generate a heightened focus on the action onstage. It might be argued that the mediated qualities of the amplified sound – for example, the spatial attributes caused by speaker placement or the characteristic “tinniness” of amplified sound in performance venues – signal to the audience that the choreographer intends for them to be attended to. Though the sound technicians do distribute sound to speakers in the auditorium as well as onstage, the amplified sound is primarily “placed” forward of the audience in onstage speakers immediately flanking the stage. Further, unnatural amplification effects are reduced to a minimum through careful adjustment of tonal qualities. Thus, the amplified sound closely reflects the ambient sounds produced onstage, except for the subtle increase of level and “surround” effect.

An additional effect of accentuating the sounds of dancing is the foregrounding of the physical effort involved – a factor, incidentally, that is obscured to the maximum extent in classical ballet. Indeed, classical ballet performance is intended to be a silent performance with musical accompaniment, with corporeal sounds such as footfall,

Fishcher-Lichte, Barbara Gronau, Sabine Schouten, and Christel Weiler, eds. (Berlin: Theater der Zeit, 2006), 140-52.

²³ A subset of the performer-produced sounds, which includes certain floor slaps, the pounding two-foot stamps during a male performer's “pointing” solo I describe in following, and an overplayed toppling to the floor, are deliberately performed loudly. Most of these high-volume accents occur near or in the “finale” of part 1.

breathing, or noises arising from physical contact eliminated as much as possible. While sounds such as hand claps, toe taps, heel clicks, or tambourine jingles are included in some works for stylistic detail, these tend to occur in “character” dance sections, where they serve to mark lower status in terms of nationality or class.²⁴

Amplification of the breath score also enhances the intimacy of the performances. The roots of the word intimate (Latin *intimāre*, to put or bring into, to make known or make familiar, from *intimus*, innermost) suggest a knowing that transcends everyday acquaintance or experience and reflect the role that proximity plays in creating intimacy. Krüger’s comment that the amplification of spoken text in other Forsythe Company works “brings the voice closer” to the audience applies equally well to the amplification of the breath score.²⁵ The amplified sounds of the dancing bodies impinge on the ear as they would if one were in more immediate proximity – at an intimate distance – to the dancers. In *Duo*, which is performed in a narrow space downstage, the amplification of the women’s quiet, steady sweeps of breath and feet join with the performers’ placement near to the audience to create a sense of closeness. However, *Duo*’s tranquil proximity is performatively offset by the women’s costumes, which reveal their breasts through a sheer layer of black mesh. The “intimate” view of the women, which causes some audience members to react with visible or audible discomfort, thus gains performative support from this staged visuo-sonic intimacy.

²⁴ This distinction is quite clear in narrative ballets involving toasting onstage. Dancers portraying higher-class personae, for example the party guests in *The Nutcracker*, typically wrap their hands around their glasses and “clink knuckles” when toasting onstage rather than produce the sound of clinking glasses, while *Don Quixote*’s Spanish revelers robustly and loudly clank their cups together.

²⁵ Interview with the author, July 2, 2008,

In 2005, Forsythe produced the first version of *Three Atmospheric Studies*. The premiere version consisted of two parts, the second of which became part 3 of the current version. *Clouds After Cranach*, which premiered in November of the same year, consisted of two parts that were performed on two stages facing each other, with the audience turning around after the first part. The two parts of this work became parts 1 and 2 of the current version of *Three Atmospheric Studies*. The work was first performed as a three-part evening in Berlin in early 2006. Part 1, which is sometimes performed on its own under the title *The First Study*, has no musical accompaniment and features a complex breath score that, like those of the works cited above, is amplified in performance. In what follows, I describe the breath score and dramaturgy of *Atmo* part I, as it is known within the ensemble, analyzing the performative ends to which Forsythe applies the intermodality of the breath score.

7.3.2 The breath score of *Three Atmospheric Studies* part 1

Forsythe describes the approximately 23-minute first part of *Three Atmospheric Studies*, as “a very complex acoustic composition.” The work, which was inspired in part by the confused action and scattered gazes in press images of conflicts in the Middle East, stages a mother’s fragmented, incomplete memory of a traumatic event which occurred in the confusion resulting from a marketplace bombing. The mother’s story of her son’s “arrest,” which was written by Forsythe, is clarified in part 2, when it is revealed that her son was actually shot and killed by military forces. Within a large white rectangle of floor space under 6 ominously low-hanging HMI lights, twelve dancers cycle

and reverse through rapid-action sequence fragments and tableaux of the traumatic event.

As one reviewer reflects,

It's a *melée*, frightening in its desperate urgency, yet at the same time forensically precise. After a time you begin to pick out repeated gestures, defensive twists and feints, and other gestures that seem to tell more of the story: the sighting of something in the air, a desperate chase, an accidental death. What makes this so compelling is that its chronology is jumbled and all the elements of the story are visible at once, just as any traumatic event becomes compressed and confused in the memory of those who were there.²⁶

Atmo part 1 commences with an intricate sequence of set choreography approximately two minutes long that is first danced through and then danced backwards to its beginning before recommencing at a markedly quicker speed. The second time, the ensemble splits into two groups, one of which reverses the sequence again while the other continues onward through the choreography. Forsythe structured variations, solos, duets, and other ensemble passages from the resulting “collisions” between performers as they moved through the material. The dancers adopt the roles of characters described in the mother’s story (her son, daughter, and sister, the daughter’s friends, a male neighbor, policemen), some of them shifting among multiple or shared character identities and movement styles and tasks. As the work proceeds, the dancers move through set group sections that are interspersed with “scheduled” improvisational solos and passages with others.

Forsythe describes the structure of *Atmo* part 1 as “symphonic,” noting its oscillation between danced solos, counterpoints between groups, and fugues involving the entire ensemble. He extends this reference to the work’s breath score as well,

²⁶ Jenny Gilbert, review of *Three Atmospheric Studies*, *The Independent*, October 15, 2006.

encouraging audiences to hear it as a musical composition.²⁷ Like soloists in an orchestra, the performers are afforded a certain degree of leeway in determining their timings, as well as the timbre and specific content of their improvised passages. Similarly, the exact volume, timbre, and force of the breath score's elements emerge as a product of the choreography's timings and energy levels, which, due to the improvisational autonomy afforded the dancers, vary from performance to performance. These variances in execution, while affording decisional avenues for the response of other performers, also offer them the opportunity to enact a physical dramaturgy of potential deception. By "approaching" awaited cues in unpredictable ways, the dancers can supply confounding information about their intended timings. For example, in a passage which occurs twice in the first two run-throughs of the choreographic sequence described above, the dancers freezes in various positions as one of the male performers stumbles noisily out of a kick that another performer delivers to the back of his knee. In the silence, he makes a wide, swift walking arc to a position upstage, accentuating the strikes of his heels and producing a marked *decrescendo* and *rallentando* as he progresses. After reaching his position behind a cluster of dancers on the floor, he suddenly drops and makes a sharp, slicing slap to the floor that cues the rest of the ensemble back into action. The other performers, many of whom cannot see him, listen intently to his slowing and quieting walk, tracking his deceleration and position in order to predict when the slap will take place.

²⁷ William Forsythe in post-performance talk with Steve Valk and Michael Klien, Dublin, Ireland, April 7, 2008.

Shortly after the second run-through of the initial group sequence begins, the already audible breath score is amplified through a slow and subtle increase of the volume levels of two shotgun microphones positioned in the front wings and pad microphones²⁸ mounted in the floor. Throughout the rest of part 1, Lanz continuously balances the sound levels of the breath score against the intensity of the danced performance. Forsythe, who supervises the performance from the sound booth, requests further adjustments of volume if he deems them effective. As the piece continues and the dancers become more fatigued, the score's crisp accents are joined by ragged breathing, louder vocal punctuations of effort, and more dense masses of corporeally produced sound as the performers generate a dashing, twisting blur of action. A nervous, quiet visual canon near the end of the piece, marked by whirling stamps, swift, silent pointing gestures, and tense shifts of gaze, is followed by a final rushing *coda* that returns the dancers to a tableau from the work's outset.

As in the works described in the previous section, *Atmo* part I's breath score affords the performers a sonic device for temporally navigating the choreography. As they move through *Atmo* part 1's multi-centric choreographic structures and modalities, it is critical that they attend not only to visual cues but also to the sounds and silences of the breath score unfolding around them, watching and listening for cues that dictate the work's moving synchronies, tempi, and precise, photographic stops. Some of the breath score's elements result from relatively quiet and visually unobtrusive gestures which function "locally" for a limited number of dancers, for example when one of a trio of

²⁸ Pad floor microphones are typically only deemed necessary in larger venues and are thus not always used.

dancers grabs the wrist of another while producing a breath gesture. Other elements with a more “global” effect are larger and louder in scale, such the floor slap described above. Sonic gestures can also be “hidden” onstage from performers, audiences, or both by shunting visual attention away from the sound producer with movement elsewhere in the stage space. Forsythe, by suggesting that the dancers imagine the breath score’s sounds to be shots, bombs, ricocheting projectiles, or the shutter clicks of cameras, encourages an audio-visual dramaturgy while also encouraging sharp attention to the audible aspects of the performance.

In effect, *Atmo* part 1’s breath score perceptually snares spectators between the contrasting attentional draws of amodal events, which ratify the connectedness and causal linkages of information across the senses, and the visual mono-modality typical of dance performed to accompaniment. As the dancers run, collide, tangle, and collapse, any visible or audible gesture may motivate or interrupt one or more centers of action elsewhere, prompting spectator-auditors to make rapid attentional choices within an environment which, as in many other Forsythe works, complicates attempts at holistic perception through a surfeit of competing loci of perceptual information. Variation in the sonic and visual volume of gestures further enhances this complicating effect. Near the end of the work this strategy is made wryly explicit when a male performer, after maneuvering himself to downstage center in a contorted solo passage, cues the rest of the ensemble out of a freeze by executing a noisy, melodramatic collapse.

Crucially for the attentional equation of the work, however, not all of the visual or sonic gestures produced are cues. To the viewer unfamiliar with the choreography,

however, all sounds or gesture are potential cues to any number of performers. For example, late in the work, the ensemble freezes as one male performer (Fabrice Mazliah) executes an approximately 40-second solo that alternates sets of erratic, whirling countertorsions with passages of swift, rhythmic backward walks weaving between groups of standing or prone dancers. Each weaving passage begins with a loud, sharp two-footed stamp and contains several sustained pointing gestures. Mazliah is at liberty to break the alternating pattern of whirling steps and perambulations by inserting additional non-transitional stamps. None of the stamps or pointing gestures in this solo are cues except for the final one the performer delivers upon arriving at a specified location onstage. As the context of cueing through sharp sounds has been firmly established by this point in the work, the multiple stamps dishabituate the audience, confounding expectations for pronounced amodal gestures to cue further action. The final stamp, delivered with only one foot and a rather ironic sense of timing, returns the ensemble to the habituated pattern of cue response and breaks the audience out of the expectant “lull” that the solo’s conditions produced.

Atmo part 1’s breath score, like that of *Duo*, draws its audience into a more intimate perceptual experience with the action, but to different ends. Forsythe views *Atmo* part 1 as a choreography which presents the experience of war, an event that the majority of people only ever experience at a remove, through the distance of written reports, photographs, or film footage. The work’s visible and audible urgency, unpredictability, and exhaustion extend an experience of uncertainty and duress to the spectator who,

drawn closer to the action through the amplified sounds of scuffling, dodging, impact, and struggle, is viscerally confronted by the score's more aggressive elements.

In summary, *Atmo* part 1's audio-visual cueing system, which is embedded in the overall action structure of the work, is marked by variances in modality and exceptions to established structures. The breath score heightens the attention of both performers and audiences and affords unpredictable causalities that support the work's dramaturgy of tension and unpredictability. Amplification of the breath score divides attention more evenly across visual and sonic events, drawing the audience into a more intimate engagement with the action by scaling up into audience attention a complex, symphonic network of sounds of effort, haste, collision, and urgency. The presentation of familiar events, such as repeated positions or movement phrases and clearly effective cues, together with the presentation of deceptive false cues such as gestures which share the visual and/or sonic qualities of cues, produce a repeating dishabituatation that keeps audience attention active and focused. In the following section, I detail how the breath score offers further deceptive potential by freeing the gaze of the performers from necessary connections to visual action.

7.3.3 Attention and deception in *Three Atmospheric Studies* part 1

Research from the field of gesture studies on directed attention, which highlights how gestures of the hands, face, and other parts of the body are used to communicate thought and intention to others, offers a useful platform from which to examine the attentional affordances offered by the breath score. Within this field, gestures are studied

both alone and in tandem with either verbal or signed language, with a focus on the interface between linguistic and gestural communication.²⁹ A number of researchers have focused on ways in which manual gestures, postural shifts, and directed gaze are used as a means of directing attention.³⁰

Humans are attuned from an early age to deictic gestures, or gestures which are used to indicate other objects, locations, or time frames. These gestures, which can be physical, vocal, or both, fall into several categories including “pointing” gestures of the fingers, hands, chin, or other body parts; directed gaze; corporeally produced sounds such as tapping or clapping; and linguistic or paralinguistic vocal utterances (e.g. the word “this” or a gasp indicating an object or event). Patricia Zukow-Goldring, whose work analyzes the acquisition of communication skills from a Gibsonian perspective, focuses on the behavior of infant caregivers, who “educate” attention with especially emphatic and distinct attention-directing practices. Gestures and sounds like those listed above are elements of a complex intermodal network of what Zukow-Goldring refers to as *attention-gathering interactions*, which serve to draw the attention of others so that it can then be directed toward a target. These deictic actions allow others to “read” our minds to

²⁹ See for example P. Ekman, & W. Friesen, “The repertoire of nonverbal behavior: Categories, origins, usage, and coding,” *Semiotica* 1 (1969): 49–98; Roy L. Birdwhistell, *Kinesics and context* (Philadelphia: University of Pennsylvania Press, 1970); Adam Kendon, “Gesture,” *Annual Review of Anthropology* 26 (1997): 109-28; id., “Language and gesture: unity or duality?” in *Language and Gesture*, David McNeill, ed. (Cambridge, University of Cambridge Press, 2000), 47-63; David McNeill, *Gesture and Thought* (Chicago: University of Chicago Press, 2005); Susan Goldin-Meadow, *Hearing Gesture: How Our Hands Help Us Think* (Cambridge MA, Harvard University Press, 2005).

³⁰ See Charles Goodwin, “Gesture as a Resource for the Organization of Mutual Orientation,” *Semiotica* 62, no. 1-2 (1986): 29-49; C.L. Schmidt, “Adult understanding of spontaneous attention-directing events: What does gesture contribute?” *Ecological Psychology* 11 (1999): 139-74; Evelyn Z. McClave, “Linguistic functions of head movement in the context of speech,” *Journal of Pragmatics* 32 (2000): 855-78; and Sotaro Kita, *Pointing: Where Language, Culture, and Cognition Meet* (Mahwah, Lawrence Erlbaum Associates, 2003).

a certain degree by reflecting our attentional focus or our intentions for the focus of others.³¹



Figure 7.1 Attention and deception: The Forsythe Company in *Three Atmospheric Studies* part 1. Photo: Dominik Mentzos.

Whether physical or vocal, attention-gathering and attention-directing gestures are clearly a means of both influencing the behavior of others. As noted above, *Atmo* part 1's visual and sonic gestures jointly organize the performance across time while also constantly re-capturing and re-directing the attention of the viewing and listening

³¹ Patricia Zukow-Goldring, "A Social Ecological Realist Approach to the Emergence of the Lexicon: Educating Attention to Amodal Invariants in Gesture and Speech," in *Evolving Explanations of Development: Ecological Approaches to Organism-Environment Systems*, Cathy Dent-Read & Patricia Zukow-Goldring, eds. (Washington D.C.: American Psychological Association, 1997), 220-1, 227-8. See also P. Ricciardelli, E. Bricolo, S.M. Aglioti, and L. Chelazzi, "My eyes want to look where your eyes are looking: exploring the tendency to imitate another individual's gaze," *Neuroreport* 13, no. 17 (December 2002): 2259-64; and Simon Baron-Cohen, *Mindblindness: An Essay on Autism and Theory of Mind* (Cambridge: MIT Press/Bradford Books), 1995.

audience. However, the inclusion of sonic cueing also permits performers' gazes to be directed elsewhere than at cue-givers at strategic moments. Because performers can discern a sonic cue while looking elsewhere than at the cue giver, the gaze of the performer is freed to become a potentially deceptive indicator of attention. Throughout the work, the dancers' gazes are choreographed in complex patterns of "disattention" to focal events, such as soli or danced passages by small groups.³² An example from near the end of the work can be viewed as a direct choreographic address of the power of deictic gestures. In this section, several dancers mill nervously through the stage space, making sharp, sustained pointing gestures at random points on the floor or at other performers while producing shifting, intent gazes which do not necessarily correspond to the directions they are pointing. Their looks and gestures compete for audience attention with a duet that is simultaneously taking place, drawing it away and "scattering" it across their hands, eyes, and the various locations these are indicating.

Thus, the attention-gathering elements of the breath score support a visuo-sonic choreography of deictic gestures and sounds to produce a performance characterized by potentially deceptive action. Together with the rapid, unpredictable shifts of cue initiators and perceptual channels through which cues are given, this potential for deception further heightens the attentional demands on viewer-listeners already taxed by the choreography's multicentricity and speed. The result is a work that exploits the

³² Commenting on this choreography of gaze, Forsythe states that he wished to reflect the scattered gazes of people in the images which inspired the work, which include press photos of bombing scenes from the Middle East and paintings of the crucifixion by Cranach the Elder (post-performance talk, April 7, 2008). Several large-format renderings of these images are always displayed in a space between the auditorium and theater foyer when *Three Atmospheric Studies* is performed.

“education” of attention in order to generate an unsettling, visceral experience of uncertainty and reaction for its audience.

7.4 Chapter conclusion

In this chapter, I have described Forsythe’s ensemble’s development of the breath score and detailed its structure and performative effects in recent works. I have discussed the ramifications of breath score cueing with reference to the salience of amodal audio-visual perceptual events, arguing that these compete for attention with dance’s typical visual mono-modality in ways that Forsythe exploits choreographically. I have shown how the breath score of *Three Atmospheric Studies* part 1 functions not only to coordinate the dancing of the ensemble but also to heighten and performatively divide and confound audience attention through its differing modal possibilities and the deceptive potential of auditory cues. I have detailed how the breath score releases the gaze to be a potentially deceptive indicator of attention and intention. Together with the works’ gestures and gaze patterns, this deception engenders unpredictable and unreliable causalities that support the work’s dramaturgy.

Analyzing the deployment of breath scores from a cognitive perspective reveals how the inclusion of the breath score and its emphasis through amplification taps into the performative potentials of choreographing across the range of audio-visual possibilities. In tandem, it shows how the replacement of musical accompaniment with performer-produced breath scores maps the performance sound onto the field of vision and onto the bodies of the performers, where visible and audible gestures acquire the deictic potential

that enables them to gather and channel attention. In the following chapter, I examine Forsythe's further exploration of the performativity of intermodal choreography.

Chapter 8

Intermodal counterpoint: vocal choreography

8.1 Introduction

In this chapter, as in the previous chapter, I view a specific paradigm of The Forsythe Company's choreographic methods in light of research on intermodal perception, or perception across the senses. Whereas the previous chapter focuses on the co-occurrence of sound and movement in the relatively small vocal gestures of the breath score, the following chapter focuses on the choreographic reflection of movement through fully voiced contrapuntal performance, a visuo-sonic modality I refer to as *vocal choreography*. In following, I discuss Forsythe's conception of choreographic counterpoint, showing how translation between the kinetic action of dancing and the vocal action of sound performatively heightens and divides attention while eliding the textual content of speech. Referencing literature from the areas of cognitive linguistics and semiotics, gesture studies, art history, performance studies, comparative literature, music studies, and film theory, the chapter applies a broad cognitive perspective to address the debate in choreomusical literature on the existence of intermodal counterpoint and also opens questions about the analysis of vocal production in dance.

As in the previous chapter, the objective is to demonstrate a multisensory approach undertaken from a cognitive-interdisciplinary perspective and to show how it offers the aggregated benefit of providing a new and highly informative lens through which to view dance, while also permitting dialogue with theories of dance and

performance. Through a re-cognition of the body's vocal apparatus as contiguous with its dancing exterior, Forsythe extends the action of dancing past the body's inside-outside boundary, producing dancing that is both visible and audible. This choreographic modality opens a space for reconsideration of the ways that bodies mean and an interrogation of the role of text in discourses in and on dance. In this chapter, I bring dance and performance studies into dialogue with cognitive research to analyze this re-sounding dancing, to show congruencies across the disciplines in ideas about how aesthetic effect is generated, and to contribute to current debates and theoretical practices in dance studies.

This examination of vocal intermodality in Forsythe's recent choreography is divided into three main sections. Prior to presenting and analyzing the ensemble's techniques of producing vocal choreography, I describe the relationships of sound and movement expressed in common practices of describing object and event qualities through vocal gesture and synesthetic metaphor (Section 8.2). Next, I describe the ensemble's development of vocalized choreography in the works *Decreation*, created in 2003, and *You made me a monster*, from 2005 (Section 8.3.1). In this section I detail the physical and perceptual mechanics of the modality, highlighting how the voice in these works is both a product and an extension of improvised choreography, and I discuss the critical role that performer attention plays in the modality's performative affect and the dramaturgy of the works discussed. In the following section (8.3.2), I consider Forsythe's usage of the term "visual counterpoint" to describe structure in his works, arguing in favor of the term *intermodal counterpoint* as a more appropriate descriptor of the visuo-

sonic relationships produced between sound and dancing. I also address the debate among choreomusical scholars regarding the applicability of counterpoint as a concept across different sensing domains. After describing the vocal, visual, and kinetic counterpoint of the 2006 work *Heterotopia*, I stage an interdisciplinary dialogue on the role of simultaneity in postdramatic performance, noting parallels in literature from performance theory, literature studies and cognitive semiotics. In the concluding section of this chapter (8.4), I discuss the ramifications of visuo-sonic dance intermodality for dance studies, arguing that this engagement, which highlights the vocality of dancing bodies, makes a call for re-evaluation of dance research's almost exclusive focus on visuality and textuality.

8.2 Background

As noted in Chapter 2, Forsythe's choreographic methods are frequently based on iterative procedural translations of movement in which improvisations are structured by the application of movement or attentional constraints. Among these operations are tasks that set movement in contrapuntal relation to sound. Forsythe describes dance as "a kind of music – maybe a visual music," revealing an intuitive understanding of the common physiological and cognitive ground shared by visual and aural perception. He reminds his dancers that sound is fundamentally a product of movement: sound begins when vibrating objects set air molecules into motion, while sound perception begins when this moving air initiates a chain of motion in the organs of the ear.¹

¹ Forsythe, in conversation with the ensemble, March 13, 2008.

At work in the studio, Forsythe vocalizes constantly, generating aural images of his own or others' movement. In a "sing-through" produced for the project *Synchronous Objects*, Forsythe can be heard accompanying the choreography with sounds: "*Bah BO, bahhhh, ki-ka WUMMM...ya pahhh-um pahhh um, boom...*"² His vocalizations of gesture share a common pattern with those produced by many choreographers and performers of Western concert dance forms, describing movements into fixed positions with short, sharply articulated sounds (e.g. *ki-ka*), rising or falling gestures with corresponding tonal arcs (e.g. *DEE-yah*), or strong sweeping movements or arrival into positions (e.g. *WUMM*). Though the exact sounds dancers and choreographers produce to aurally represent movement vary from person to person and across different dance forms and cultural geographies, they reflect a conventional set of melodic, punctual, and timbral relations to the movements they are intended to represent. Vocal gestures that illustrate dance movement constitute instances of onomatopoeic or ideophonic reflection, a common human practice in which vocal sounds (e.g. *pow, zoom, bling*) are used to describe dimensions of object size, position, movement, or the temporal structure of events.

The translation into vocal gestures of actions observed or undertaken reflects the embodied nature of sound perception. Research on gestures in speech production shows that speakers unconsciously temporally correlate speech prosody (intonational patterns of melody, rhythm, and stress) with the hand and head movements and postures that

² Forsythe's sing-through of *One Flat Thing, reproduced* can be accessed by toggling the audio settings of the work's video score at the *Synchronous Objects for One Flat Thing, reproduced* project at www.synchronousobjects.osu.edu/content.html#/fullVideoScore (accessed June 7, 2009).

accompany it, such as emblematic or representative movements, deictic gestures such as pointing, or emphatic rhythmic “beats” of the hands.³ In a similar vein, we also make robust dimensional correspondences across percepts from differing sensory modes, such as the relative “brightness” of sounds, “warmth” of colors, or “sharpness” (also called “piquancy”) of flavors.⁴ In language and literature, these are reflected in synesthetic metaphors like a “loud” red, a “dark” voice, a “juicy” movement, or a dawn that “comes up like thunder.”

In the dance studio, vocal reflection of movement qualities serves a communicative purpose in the same manner as the gestures that orchestra conductors use to visually describe the temporal and tonal qualities desired from musicians. Performing artists commonly perform one or the other – either vocalization or movement – but not both simultaneously. Several of Forsythe’s recent works, however, explore the perceptual linkage of external-visible and internal-audible gestures from a choreographic perspective, featuring modalities in which dancers produce sound as a by-product of movement or produce movement as a reflection of sounds heard. In these works, they respond to gestures in one modality (visual or aural) either with gestures in the same modality, with gestures in the other modality, or simultaneously in both modalities. In

³ See for example U. Hadar, T.J. Steiner, E.C. Grant, and F.C. Rose, “The timing of shifts in head posture during conversation,” *Human Movement Science* 3 (1984): 237-45; F. Quek, D. McNeill, R. Ansari, X. Ma, R. Bryll, S. Duncan, and K.E. McCullough, “Gesture cues for conversational interaction in monocular video,” *ICCV99 Workshop on Recognition, Analysis, and Tracking of Faces and Gestures in Real-Time Systems* (1999): 64-9; and McNeill, *Gesture and Thought*.

⁴ See for example Lawrence Marks, “Bright Sneezes and Dark Coughs, Loud Sunlight and Soft Moonlight,” *Journal of Experimental Psychology: Human Perception and Performance* 8 (1982): 177-93; Ernst Gombrich, *Meditations on a Hobby Horse and Other Essays on the Theory of Art* (London: Phaidon, 1963); and V.S. Ramachandran, *A Brief Tour of Human Consciousness* (New York: Pi Press, 2004), 60-62. For comprehensive overviews of synesthesia, see Richard Cytowic, *The Man Who Tasted Shapes* (Cambridge MA: MIT Press, 2003) and Lawrence Rosenblum, *See What I’m Saying: The Extraordinary Powers of Our Five Senses* (New York: W.W. Norton & Company, 2010), 283-93.

what follows, I describe the development of this *vocal choreography* and its implementation in two works, highlighting the ramifications of intermodal perceptual theory for this paradigm.

8.3 Vocal choreography

8.3.1 The development of vocal-kinetic translation: *Decreation* and *You made me a monster*

Forsythe and his ensemble began exploring the vocal translation of movement in 2003 during the making of *Decreation*, a work based on Anne Carson's essay "Decreation: How Women Like Sappho, Marguerite Porete, and Simone Weil Tell God"⁵ and her book *The Beauty of the Husband*" *A Fictional Essay in 29 Tangos*.⁶ Carson's essay is an "opera" comparing the desire for personal negation of the jealous subject of Sappho's fragment 2,⁷ Marguerite Porete's struggle to understand God's will for her love of Him, and Simone Weil's desire to return the self back to God, while the female narrator of Carson's book analyzes the deterioration of her marriage to a needy, philandering husband. The thematics of self-annihilation and jealousy in these two works prompted Forsythe and his ensemble to a further elaboration of the counter-rotational dynamics and "disfocusing" perceptual effects of extrapolated *épaulement* with which the ensemble had begun working in 1991, while creating the second version of *The Loss of*

⁵ Carson, "Decreation: How Women Like Sappho, Marguerite Porete, and Simone Weil Tell God," *Common Knowledge* 8, no. 1 (2002): 188-201, reprinted in Carson, *Decreation: Poetry, Essays, Opera* (New York: Knopf, 2005).

⁶ Carson, *The Beauty of the Husband*" *A Fictional Essay in 29 Tangos* (Toronto: Vintage, 2002).

⁷ Theodor Bergk's numbering system.

Small Detail.⁸ Carson's analysis of Sappho's poem describes the visuo-sonic structure of attention between its subjects:

Sappho seems less interested in these characters as individuals than in the geometric figure that they form. This figure has three lines and three angles. One line connects the girl's voice and laughter to a man who listens close. A second connects the girl to Sappho. Between the eye of Sappho and the listening man runs a third. The figure is a triangle.⁹

For *Decreation*, the ensemble developed a radical, emotionally driven corporeal dramaturgy based on complex, wringing countertorsions of the entire body: limbs, spine, face, and eyes. During the rehearsal process, Forsythe observed that this operation, in addition to productively confounding proprioception, also de-forms and reshapes the vocal apparatus: mouth, trachea, larynx, and diaphragm. He asked the dancers, "What happens now when you exhale?" and observed that the result constituted a sonic rendering of the state of the body – a translation of movement into vocalized sound.¹⁰ Thus, in scenes in *Decreation* in which this modality is practiced, one is actually "hearing the dance," to quote Balanchine's famous edict. However, rather than reflecting an externally produced musical composition, the wringing, writhing bodies of the dancers become the loci of production of both dance movement and its spasmodic, allied sound. Motivated by Carson's triangular relationship structures between lovers and between women, the soul, and God, Forsythe distributed subtasks of this visual-aural translation across series of watching, listening, and responding performers in such a manner that movement or sound is only produced "through the actions of another" – in response to

⁸ Forsythe's refiguring of the gaze in *épaulement* can be traced further back to the work *Artifact* (1984). See Caspersen, "Decreation," 95-97.

⁹ Carson, *Decreation: Poetry, Essay, Opera*, 189.

¹⁰ *Decreation* post-performance talk, Haus der Berliner Festspiele, Berlin, January 21, 2009.

the actions of other performers onstage. In one of *Decreation*'s final scenes, for example, a female performer contorting in gouts of twisted movement is watched by another female performer who, seated with her back to the audience, translates the movement phrases into guttural passages of sound. The work's male protagonist completes the translatory triangle, slowly deciphering the phrase "This is the deal: you give me everything and I give you nothing."

The contiguous muscularity of this intermodal choreography controverts reifications of inside and outside boundaries of the body, extending the action of dancing to the body's sonorous interior and *re-presenting* visibly perceptible dance via the aural perceptual channel. As with many of Forsythe's improvisatory structures, this mode of visuo-sonic composition constitutes an innovative domain of not only the dancers' physical virtuosity, but also their perceptual virtuosity. This improvisational modality demands a manifold division of attention and action from its performers across the external-internal spaces and temporalities of the body and across their own and other performers' physical and sonic output.¹¹ Likewise for spectators – or more aptly, spectator-auditors – this dual output affords a radical and multiple division of attention across the visual and auditory modes of both production and reception.

In subsequent works, Forsythe's ensemble continued to elaborate the linkage of dance movement to vocalization by conceiving of the vocal apparatus as exquisitely responsive to movement generated virtually anywhere in the body and refracted across its

¹¹ It is ironic that *Decreation*'s visuo-sonic choreography is often interpreted in terms of physical or even mental disability. See for example Ryan Platt, "Forsythe's Box: On the Afterlife of Choreography," *Performing Arts Journal* 31, no.1 (Jan 2009): 1-15; and Debra Craine, review of *Decreation*, *The Times*, April 28, 2009, 16.

spaces. This system of internal isometry, says Forsythe, “takes a state of your whole body and connects it to your throat” such that “the sum of the body is in your windpipe.”¹² For example, raising a heel from the floor causes residual movement of the leg in space. Amplifying this residual movement results in displacement of the hips, which in turn shifts fasciae within the thorax and extends them differentially across the right and left ribs. Further projection of the amplified residual movement compresses the lower lung and mobilizes the diaphragm, steering breathing while trajecting and refracting further to influence motion of the tissues and bones of the neck, jaw, and lower face. This mobility reshapes the trachea, buccal cavity, and finally the lips. Activating the vocal chords during this process produces sound that provides a reflexive, self-generated accompaniment to the dancing.

In 2005, Forsythe coupled this extrapolation of vocal sound from movement with another improvisational modality, the translation of visual scores into movement, which the ensemble first elaborated in works such as *Limb's Theorem* (1990) and *ALIE/N A(C)TION* (1993). *You made me a monster*, an embodied study of love and grief created ten years after the premature death of Forsythe's wife Tracy-Kai Maier, begins with audience members being ushered into the performance space and asked to add pieces to the twisted sculptures of paper skeleton pieces on tables and the pencil tracings of the sculptures that form the visual score of the work. After a short period, two male performers invade the installation's darkening space, lurching and howling erratically as they “read” and respond to the detail of the sculptural objects. The skeleton sculptures

¹² Rehearsal, Frankfurt am Main, August 21, 2006.

provide the performers with daunting amounts of visual structure: not only can they be parsed linearly across the randomly connected pieces, they can also be read across their surfaces or by tunneling one's vision through their depths. After arriving at a stagelike area at one end of the room, a female performer replaces the two men for an interval, translating paper shadow tracings placed on three music stands into movement and sound. Her departure triggers a return to the intense action of the work's earlier part. She later returns to the stage area to perform a more delicately sound-scored "swan song" alone.¹³



Figure 8.1 Singing the bones: David Kern, Roberta Mosca, and Christopher Roman in *You made me a monster*. Photo: Julieta Cervantes.

¹³ *You made me a monster*'s improvisational tasks are also sometimes performed as an installation titled *Monster Partitur*. For this work, a large wooden wall covered with shadow tracings serves as the score.

In both tasks (score reading and intermodal translation), the performers radically divide their attention by simultaneously reading and translating multiple locations of the score elements into movement and sound. Forsythe instructs the performers to “keep your drawing all over your body” by distributing the translation of the score elements across different physical regions.¹⁴ The sonic environment of the room further divides performer and audience attention because the dancers’ vocal renderings, which already constitute an emergent stream of information to which the performers can respond, are joined by an additional aural rendering of their voices produced via a Max/MSP interface. The dancers’ vocalizations, breaths, and gestural sounds are picked up by head-mounted microphones they wear and altered, augmented, and fed back into the performance space in real time by composer-programmer Hubert Machnik. Through the manifold visuo-sonic array of movement and voices, *You made me a monster* enacts a wrenching, multisensory re-incarnation of a body lost to cancer, fleshing out the bones with muscle, sentience, movement, and lament. The performers, entrained with the environment by the high demands of attention and action and intentionally teetering at the edge of perceptual coherency, offer an image of the terror unleashed when terminal illness alters bodies and lives.

The dancers treat the Max/MSP programs as instruments that they play with their whole bodies as they read the visual scores of twisted paper bones and lines, dividing their attention across the multiple spaces, surfaces, and streams of sound. One of the

¹⁴ Rehearsal, Frankfurt am Main, October 10, 2007.

voice programs used in *monster* produces a delayed and “gated”¹⁵ overtone scale in response to varied sound qualities, with uptake and processing contingent on the point within the program’s temporal cycle at which they are uttered, while another program responds almost immediately to the sonority and volume of vowels, altering them and feeding them back in a shifting variety of echoing pitches and qualities. The specific characteristics of the three Max/MSP programs used in *monster* enable the programs to be “learned” and their responses to be predicted to a certain degree by the dancers. However, the cyclic nature of information uptake, Machnik’s real-time optimization of the programs during performance, and the visual and sonic input provided by the other moving, vocalizing performers together generate a level of unpredictability which requires the dancers to remain intensely aware and responsive to the aural environment. Machnik, along with technicians Krüger and Lanz, responds as well to the information in the room, watching and listening to the improvising dancers and their mobile audience and tempering the performance as it emerges. Thus, the improvisational feedback loop is open at both ends for all performers involved.

Forsythe emphasizes the performance of attention, both visual and aural, as critical to the work’s performative effect. The performers’ strong visual focus on the sculptures on the tables and the shadow tracings on music stands make them appear transfixed, overwhelmed by the masses of contorted paper bones, while their sounds and silences as they “read” and translate the soundscore evoke an incoherent horror. The intense visible attention of the performers provides vectors for audience members to seek

¹⁵ This program’s uptake of information is not constant but occurs cyclically, like a temporary “window” of time that permits sound to enter the system for processing.

linkages between the room's surfeits of visual and sonic information and performer actions at the boundary of intention and incoherence. Thundering, wailing, and chiming throughout the room, the feedback of the Max/MSP programs doubles the works' vocal component, offering the performers an exponentially larger set of musical voices to which to respond. In doing so, it increases the attentional demand on both performers and audience. The dark space, filled with sound, echoes with structure and vibrates with focused attention, threatening to overwhelm the senses.

As discussed in the previous chapter, theatrical attention, like all attention, is guided by manifold cognitive goals and strategies of which perceivers are not commonly consciously aware. Among these is the establishment of connection, pattern, and causality between percepts of different perceptual modalities. *You made me a monster* exploits the manifold and dynamic motivations of perceptual behavior to stage a radical division of audience attention between performers' movements and displacements, their live and mediated voices, the vectors of their visual and aural attention, and the labyrinthine sculptures and drawings on which they focus. The patterns of dancing and vocalizing, together with the strongly expressed visual and aural attention of the performers, indicate to audiences a choreography of linkages between the room's objects, movements, and sounds. These elements compel audience to search for what Lehmann refers to as "traces of connection"¹⁶ between the different percepts in the room. The intermodality and spatiality of this dance installation clearly demonstrates how the search for connection, along with performative experience, is rooted in the so-called "lower"

¹⁶ Lehmann, *Postdramatisches Theater*, 144.

level of sensory perception, the immediate sense perception of environment and action that precedes and underpins “higher” reflective cognition.

In summary, the visuo-sonic choreography developed by Forsythe and his ensemble in the performances *Decreation* and *You made me a monster* moves dancing across the perceptual boundary between visual and aural modalities by extending it into the vocalizing regions of the body. In doing so, it affords a new approach to the intermodal choreographic potentials of bodies in motion. The compounding of multimodal dancerly production with translatory methods of improvisation has offered Forsythe a new “technology” for engendering the perceptual states he has long found choreographically productive. *You made me a monster*’s intermodal performance at the brink of sensory coherency taps the affective manifestations of divided attention and action to support a dramaturgy of the incomprehensible terror and sorrow of terminal illness. The dangerous commingling of a mobile audience and dancers reeling in response to surfeits of information and action further enhances the impact of this perceptual performativity, which is a hallmark of Forsythe’s larger *oeuvre*.

8.3.2 (E)merge: intermodal counterpoint

Forsythe seeks to foreground the phenomenological and embodied moment of the experience of dancing over reflective elaboration of narrative or conceptual meaning. As noted in Chapter 4, one key means by which Forsythe accomplishes this focusing of attention on the moment of performance is by saturating environments with concurrent loci of action and co-occurring sounds. Lehmann, who delineates simultaneity as a

principle stylistic trait of postdramatic theatre and cites Forsythe's work as exemplary in its deployment, holds that the simultaneous presentation of multiplicities of signs causes an inevitable "parcelling of perception" that engenders two responses in the spectator. Through encouragement of a calm but rapid contemplation, simultaneity opens perception to the possibility of connections, relations, and the appearance of clues at any given moment. However, the simultaneity of theatrical events renders the viewer both unable to process the totality of information presented and perceptually overstrained by the effort to take in as much of it as possible. This overstrain elicits in observers an emotional response that is driven not by narrative content but instead by the spectator's reaction to the limitations on engagement with the informing performance environment itself.¹⁷ In Forsythe's works, informational saturation occurs at both the individual and ensemble level, with performers generating complex logical systems of relation across different parts of their own bodies while also moving in complex spatial and temporal relation to other performers.

Counterpoint is described in music theory as involving two distinct and simultaneous vectors – a "vertical" or harmonic relationship between components, and a "horizontal" or to some degree independent or dissonant relationship. Anne Holmes, analyzing the structure of Mallarmé's poem "L'Après-Midi d'un Faune" from a musical perspective in order to draw parallels between musical and literary form, points out that

...the listener to musical counterpoint is encouraged to 'listen horizontally,' that is, to hear two or more separate strands individually and, only when the

¹⁷ Ibid., 149-51.

distinctness of each has been registered by the mind, to consider their combined effect vertically.¹⁸

Similarly, Hilda Hollis, in her analysis of the counterpoint of rhythm and meaning in Gerard Manley Hopkins' poem "The Windhover," notes that, "The concept of counterpoint directs us to see contradiction rather than immanent meaning."¹⁹ These views highlight how counterpoint divides attention between perceptual units and differing means of parsing structure. Forsythe's vocal choreography enables perceptual dialogue between sonic and visual simultaneities, generating linkages, contrasts, and extrapolations that produce relational structures both within and across the two modalities.

Forsythe and his ensemble began investigating counterpoint dance structure early in the Ballett Frankfurt's second decade. He describes this key choreographic parameter as "one way of providing organization without narration,"²⁰ recognizing the principle of counterpoint, commonly associated almost exclusively with music, as fundamental across all forms of art and design.²¹ Forsythe is not alone in considering counterpoint a visual phenomenon. Robert Enggass, who analyzes instances of visual counterpoint in Venetian Barocchetto painting, notes how Tiepolo and other artists of the period, rather than "echoing" Baroque figural arrangements by placing them within Baroque architecture, instead combine Baroque arrangements of figures with classical architecture. In doing so, the work of the Barocchetto period "interweaves the two distinct rhythms (not unlike the

¹⁸ Holmes, "Counterpoint in Mallarmé's 'L'Après-Midi d'un Faune,'" *French Studies* 57, no. 1 (2003): n.6.

¹⁹ Hollis, "Another Bird? Counterpoint in 'The Windhover,'" *Victorian Poetry* 40, no. 4 (2002): 433-43.

²⁰ Quoted in Sulcas, "Kinetic Isometries," 9.

²¹ Discussion with *Synchronous Objects* team members and the author, May 16, 2007.

use of counterpoint or the combining of two different melodies in a musical composition) so as to achieve an effect that is made up of both.”²² In other words, by combining the diverse aesthetics of the two periods, painters of the Venetian Settecento created sets of contrasts that produce a contrapuntal blend of styles.

The ideas voiced by Enggass above are certainly applicable to the visual aspects of Forsythe’s earlier works, which could be said to have effected an inversion of the Barocchetto by framing classical dance form with “Baroque” architectures of extension and complexity. However, while the use of the term *visual counterpoint* provides an indication of the spatio-temporal nature of visual attention that is fully adequate to the perceptual experience of static visual arts such as painting and photography, I argue that Forsythe’s usage of the term with reference to dance fails to fully capture the dynamic and ephemeral aspect of the perception of dance and other “temporal” art forms such as music and literature. Furthermore, the monosensory limitations of the concept of *visual counterpoint* downplay the presence of the auditory in art forms such as dance and film. Russian film pioneer Sergei Eisenstein, who also referred to counterpoint in visual terms, posits it as a characteristic occurrence in cinema:

In the moving image (cinema) we have, so to speak, a synthesis of two counterpoints - the spatial counterpoint of graphic art, and the temporal counterpoint of music. Within cinema, and characterizing it, occurs what may be described as: visual counterpoint.²³

²² Enggass, “Visual Counterpoint in Venetian Settecento Painting,” *The Art Bulletin* 64, no. 1 (March 1982): 89-97,

²³ Eisenstein, “A Dialectic Approach to Film Form,” *Film Form: Essays in Film Theory*, transl. Jay Leyda (New York: Harcourt, 1949).

However, as the quote above shows, Eisenstein signals the importance of contrapuntality between visual image and sound for the development of new techniques of montage. In a landmark 1928 essay written in response to the advent of sound film, Eisenstein, together with Vsevolod Pudovkin and Grigori Alexandrov, states that

ONLY A CONTRAPUNTAL USE of sound in relation to the visual montage piece will afford a new potentiality of montage and perfection. THE FIRST EXPERIMENTAL WORK WITH SOUND MUST BE DIRECTED ALONG THE LINE OF ITS DISTINCT NONSYNCHRONIZATION WITH THE VISUAL IMAGES. And only such an attack will give the necessary palpability which will later lead to the creation of an ORCHESTRAL COUNTERPOINT of visual and aural images.²⁴

The counterpoint for which Eisenstein et al. argue is clearly intermodal rather than solely within the realm of the visual. The choice of the term *orchestral* to describe the asynchronous structuring of relationships between visual and auditory information indicates the musicality and “polyvocality” perceived by the authors between the two perceptual modalities. Forsythe’s description of dance as “a kind of music – maybe a visual music” similarly reflects perceptual linkages between kinetic events and musical structure. Thus, the term *intermodal counterpoint* offers a more applicable expression of the relational structures favored by both Forsythe and Eisenstein.

With the statement above, Eisenstein and his colleagues express an opinion on the practice of image-sound synchrony known as “mickey mousing,” which I describe in Chapter 3 along with the current choreomusical debate about the possibility of counterpoint across different perceptual modalities. As mentioned in my overview

²⁴ “A Statement,” signed by Sergei Eisenstein, Vsevolod Pudovkin, and Grigori Alexandrov (1928), in Eisenstein, *Film Form*.

(section 3.2.2), White argues that the use of the term counterpoint to describe relationships between different sensory streams poses problems:

Even in dance, where the phenomenon of live performance and the relatively more abstract use of materials is much more "musical" than the succession of frames in a film, the notion of counterpoint remains awkward. While there may be counterpoint within the dance or within the music, there can be no counterpoint *between* them, because counterpoint presumes voices or bodies interacting in the same plane.²⁵

Here, White agrees with film theorist Michel Chion, who argues that

If there exists something one can call audiovisual counterpoint, it occurs under conditions quite different from musical counterpoint. The latter exclusively uses notes – all the same raw material – while sound and image fall into different sensory categories. If there's any sense at all to the analogy, audiovisual counterpoint implies an "auditory voice" perceived horizontally in tandem with the visual track, a voice that possesses its own formal individuality.

What I wish to show is that films tend to exclude the possibility of such horizontal-contrapuntal dynamics. Quite to the contrary: in the cinema, harmonic and vertical relations... are generally more salient—i.e., the relations between a given sound and what is happening at that moment in the image. So to speak about counterpoint in the cinema is therefore to borrow a notion somewhat wrongheadedly, applying an intellectual speculation rather than a workable concept.²⁶

In reducing music to "notes," however, Chion neglects to recognize the wide range of relational possibilities within sound production itself, which include not only temporality but also dynamics, pitch, and timbre. It is precisely the perceptual linkages between these auditory qualities and their visual counterparts – the dimensional correspondences that are highlighted in intermodal perception and demonstrated in synesthetic metaphor – which underpin intermodal counterpoint and confirm its possibility.

²⁵ White, "'As If,'" 74.

²⁶ Michel Chion, *Audio-Vision: Sound on Screen*, transl. Claudia Gorbman (New York: Columbia University Press, 1994), 36.

The cognitive research described above lends support to the applicability of the concept of counterpoint across perceptual modalities. Both the gestural behavior that accompanies speech and the synesthetic metaphors we derive to describe object and event qualities demonstrate routine ways in which humans perform and perceive audio-visual correlations. In speech, visual and sonic gestures are calibrated to enhance communicative clarity and generate varieties of expressive affect. In choreographic structures such as those derived by Forsythe, the visual and sonic elements of communication are the raw materials for the production of compositional interplays that performatively merge the senses of vision and audition.

Forsythe's engagement with intermodal counterpoint dance structuring subsumes numerous aspects of his *re-viewing* and *re-presentation* of the conventions of classical ballet, including the form's prioritization of verticality, the rotation and codified configuration of limbs, the spatial organization of steps, and the relation of movement to music. However, the improvisational possibilities of differentially producing and coordinating the distinct mechanics, trajectories, and dynamics of simultaneous movement events inhere not only in ballet but all codified movement forms. In Forsythe's work, temporal, spatial, and dynamic linkages between movement events take the form of concurrent "hookups"²⁷ or of sequential relations occurring either within individual bodies or across those of ensemble members. In rehearsal, Forsythe tunes the relations between harmonic and dissonant relational possibilities, optimizing contrapuntal complexity by encouraging translatory variance in referential responses. Performers

²⁷ Forsythe's term.

attend to the form and dynamics of movements and the timing of structures resulting from specific task situations, localizing opportunities for action that, critically, exhibits varying degrees of non-congruent linkage to other single or multiple events. As they move, the performers take care to also afford others in the ensemble contrapuntal opportunities. Particular emphasis is given to inserting pauses in the flow of action, which not only provide others time to respond but which also create phrasal or “musical” structure in the flow of events (Forsythe notes that the critique he most frequently gives the ensemble is “Don’t forget to stop.”) Within the parameters of each improvisational task, the ensemble produces a range of balance between quasi-congruency and more pronounced difference, as well as between immediate and more delayed response – a zone of performance, constrained by tacit and shared knowledge of event perception, within which actions diverge parametrically from their referents while still affording the discernment of structural coherence.

The Forsythe Company has continued to explore the linkage of contrapuntal dance movement to movement vocalization practices in recent works in which the performers produce both sound score and movement score, structuring improvisational intermodal counterpoint both individually and as an ensemble immersed in complex arrays of visual and sonic information. The installation performance *Heterotopia*, created in 2006, is a virtuoso exercise in the generation of intermodal counterpoint. This work, which Forsythe has referred to both as concert and oratorio, is performed in a two-room space that effectively optimizes the performative affordances of combining the ensemble’s movement and sound production. The room through which the audience

enters contains a large square grid of 56 unevenly aligned tables whose placement renders a number of holes, small thrust spaces, and raised ridges. The performers move within and around this table constellation, dialoguing in a broad range of pseudo-speech, animal noises, and vocal punctuations that reflect movement, visual forms, or other sounds in the room. The first room's vocal and ambient sound is picked up by microphones on stands and in the tables and conveyed into the almost empty adjoining second room via a large bell speaker. Sound can also pass between the two rooms through a floor-to-ceiling screen barrier that separates them. The area beneath the tables in the first room, fitted in places with mirrors, constitutes a third, silent space of torpid, mechanical movement. Thom Willems adds an understated accompaniment of shimmering tones and intermittent synthesizer gestures.

The front "orchestra"²⁸ room visually displays the performers of *Heterotopia's* soundscore (with the exception of Willems) in an installation-like setting. Most members of the ensemble employ multiple vocal registers in the course of the performance; Jone San Martin, for example, produces nonce speech in both her normal register and a raspy, guttural timbre, while Roberta Mosca produces high, sustained whistles as well as a convincing but completely fake Russian dialect. The back room, by contrast, offers a more conventional theatrical arrangement of performers dancing to accompanying sound in a black-box setting before an audience seated on risers. Two of the three objects in this room – the bell-shaped speaker that broadcasts the front room's sounds and a piano which remains untouched throughout the evening – tacitly prompt consideration of the

²⁸ Forsythe's term.

work's sound score as music while also ironically evoking the distinction between live and mediated performance. The third object, a long ribbon coiled on the floor, becomes an audio-visual instrument that is "played" in an extended solo late in the performance.

Heterotopia's informational sources and improvisational tasks are concatenated and scattered in intricate networks of cause and effect across the installation's spaces, objects, and bodies. In one scene, for example, a dancer on the tabletops in the first room performs a silent improvised solo that visually "directs" a vocal-and-movement trio of performers standing in holes between the tables. Two of these three produce responsive contrapuntal sound while physically translating it into movement of the others' body. The trio's third member uses the overall vocal score to guide his selective danced/vocal reading of an alphabet of black letters, which another performer constantly moves into new pseudo-word formations. In another hole, an additional dancer performs a blind solo in which she tries to avoid moving simultaneously with the third trio member by focusing on his voice and attempting to derive his stops from it.²⁹ The sounds of this front-room scene – four voices linked by differing degrees of agency and counterpoint, the sounds of the performers' movements, and Willems' subtle music – issue from the bowl-shaped speaker in the back room, where they serve as accompaniment for a silent trio of performers there. The physically shifting, counterpointed action and sound, coupled with the audience's liberty to move about and between the performance's spaces, motivate attendees to optimize their visual and auditory perspectives, choosing between the two

²⁹ As with many of Forsythe's works, the exact parameters of *Heterotopia's* improvisational tasks have changed over the history of the works' performances. This task series was altered in 2008, two years after the work's premiere.

environments and among the multiple targets of monomodal and intermodal attention simultaneously available at any moment – including the gazes, postures, vocal and gestural responses, and perambulation of other spectators.



Figure 8.2 *Heterotopia*'s front "orchestra" room, with David Kern, Francesca Caroti, and Ander Zabala in the foreground. Photo: Stephan Burianek.

Simultaneity, which Lehmann posits as a key feature of postdramatic theater, is clearly pervasive in *Heterotopia*'s multiple spaces and centers of action. The work's intermodal counterpoint permits a reappraisal of Lehmann's evaluation of the concept. In the experiencing of theatrical simultaneity, he notes, "A systematic double-bind arises: we are meant to pay attention to the concrete particular and at the same time perceive the totality." The spectator is deliberately made aware of the fragmentary character of

perception that everyday conscious experience typically disavows. Confronted by an unavoidable apportionment of perception and in the absence of structuring narrative, spectators organize their experience through selective attention to events, generating their own structure from among the presented signs. However, as Lehmann explains, this organizing process “remains an aesthetic of ‘meaning in retreat’” since it requires the observer to focus on the individual sub-units of structure within the staging and to defer reflection on meaning to a later time.³⁰ Lehmann’s analysis agrees with those of Holmes and Hollis, who also note counterpoint structure’s encouragement of focus on immediate events and delaying of holistic processing of the larger event.

Cognitive semiotician and aesthetics scholar Per Aage Brandt proposes a model of the neuro-semantic economy of meaning construction departs in some important ways from Lehmann’s understanding of simultaneity in aesthetic perception. In Brandt’s model, which theorizes the production of aesthetic affect, meaning is simultaneously organized on five non-hierarchical strata to which we can attend selectively or simultaneously: the levels of sensation (qualia), perception (objects), apperception (situations), reflection (notions), and affect (emotions). The processes of organizing meaning thus do not constitute linear, integrative “assembly lines” that culminate over and over again at the level of abstract or reflective thinking. Instead, Brandt claims, mental construction is “sloppy,” involving overlays of attention that occur in nonstrict orders. Critically for aesthetic perception, this mental economy involves excesses of perceptual material produced at the input levels and remaining unelaborated and

³⁰ Lehmann, *Postdramatisches Theater*, 149-51. Translations of quoted material from Lehmann, *Postdramatic Theatre*.

unintegrated into higher-order strata. Brandt holds that this unintegrated material, which calls for completion by virtue of its unsubsumed status, is experienced as particularly salient within the aesthetic context.³¹ This notion of simultaneous organization of meaning across different levels of cognition complicates Lehmann's view of spectators' search for connections and inability to parse the totality of events. On the other hand, Brandt's emphasis on the salience of input-level information resonates with Holmes's and Hollis's notions of how counterpoint directs focus to the emergent, phenomenal structuring of events.

In Forsythe's intermodal translatory modality, counterpoint can be either *intramodal*, involving either purely visual or sonic linkages, or *intermodal*, with vocal gestures reflecting rhythmic, dynamic, structural qualities of movements, or vice versa. Importantly, our parsing of intermodal counterpoint involves two separate sensory channels – the visual and the aural – only one of which requires overt physical action. Due to the limited spatial scope of the visual apparatus, visual uptake is primarily an active serial process necessitating physical shifts and the relinquishment of one attentional target in favor of another. Our ears, by contrast, are fundamentally passive and global receivers, favoring “no particular ‘point of view.’”³² Intermodal visual-aural perception runs in parallel, integrating the covert and overt perception of differently sensing systems. Thus, while intermodal counterpoint does increase the complexity of perceptual information in the performance environment, the constant variance in the

³¹ Per Aage Brandt, “Form and Meaning in Art,” in *The Artful Mind: Cognitive Science and the Riddle of Human Creativity*, Mark Turner, ed. (Oxford: Oxford University Press, 2006), 171-88.

³² Marshall McLuhan and Quentin Fiore, *The Medium is the Message: An Inventory of Effects* (New York: Bantam Books, 1967), 111.

merging of the senses evokes procedural transitions and overlaps. As both intramodal and intermodal connections between signs are potentially possible, the counterpoint of *Heterotopia*'s front room thus creates a different kind of "double bind" in which intermodal perceptual uptake competes with the serial process of visual target selection. This simultaneous presence of multiple counterpoint modalities heightens perceptual awareness and contributes to the evocation of what Lehmann, referencing a term used by Freud, delineates as an "evenly hovering attention" (*gleichschwebender Aufmerksamkeit*) that remains open for the potential occurrence of connections from any source or along any dimension.³³ Finally, by staging a mobile and visible audience around four sides of the table grid and across the two rooms, *Heterotopia*, like *You made me a monster*, scales up audience attention from covert observation into overt action, making that performance of perception both visible and tangible. In doing so, it divides attention yet again between performer and audience action.

As shown here, the performativity of Forsythe's intermodal deployment of theatrical and choreographic simultaneity goes beyond simple strategies of perceptual overloading in which spectators are presented with more information than they can perceive due to its speed or complexity. In addition to dividing attention between atomistic and holistic qualities of presentation, Forsythe's intermodal counterpoint strategically intensifies both performer and audience attention, choreographically merging sensing within and across modes and inviting attention to both composition and the performance of perception. As such, it is both inherently reflexive and performative.

³³ Lehmann, *Postdramatisches Theater*, 148.

Intermodal counterpoint thus constitutes an extension of Forsythe's inquiry into the perceptual economies of postdramatic theater.

8.4 Chapter conclusion

In this chapter, I have applied a cognitive approach to analyze Forsythe's performative choreographic integration of vocality in recent works. I have described the development of *vocal choreography* and demonstrated its application in the works *Decreation*, *You made me a monster* and *Heterotopia*, showing how this instance of Forsythe's turn to the auditory, like his development and use of breath scores, effaces commonly accepted divisions between music and dancing, between the body's interior and exterior, and between vision and audition. Focusing on research on gesture in speech and synesthetic metaphor, and referencing discussions on counterpoint from visual studies, film studies, and literary theory, I have addressed the debate in choreomusical studies over the existence of visuo-sonic counterpoint, offering support to the view that counterpoint is indeed intermodal. Finally, I have interrogated Lehmann's observations on theatrical simultaneity in light of intermodal perception in Forsythe's vocal choreographies and through dialogue with Brandt's cognitive analysis of the organization of aesthetic meaning.

The Forsythe Company's development of intermodal choreographic strategies for performative coordination of ensemble action and for contrapuntal translation between movement and sound produce deconstructions of the musical and linguistic qualities of vocal utterances that invoke questions about ways that sound in dance is perceived and

ways in which bodies project meaning. The ensemble's vocal performance in the works described in this chapter offers critical commentary on the assumed communicative superiority of text. In these works, dance action is translated into sound that is lexically incoherent but which is nonetheless comprehensible as language by virtue of the nonverbal components of speech. These include gesture, prosody, temporal structure (length and rate of utterances and pauses), volume, pitch, timbre, and inflection, as well as paralinguistic – the culturally delineated repertoire of nonverbal vocal signals such as backchannel cues (for example, “mm-hm”), laughter, sighing, snorting, and coughing.³⁴ The nonverbal qualities of discourse offer up the muscular body in action – a body whose experience, intention, and effort we recognize in and through our own.

In addition to permitting reflection on the favoring of textual over embodied understanding, the vocalicity of Forsythe's intermodal choreographies also enables an examination of the translation of dance performance into textual theoretical perspectives such as those discussed in section 2.3. In particular, it encourages interrogation of the tendency of linguistically motivated models of dance studies to implicitly devalue perceptual experience -- which is corporeal experience -- in favor of language-based comprehension. The vocalicity of Forsythe's works asserts the communicative power of the moving body situated in dance performance while questioning dance's “readability.” While the metaphoric use of the term *reading* within the humanities delineates interpretive application of critical theories in order to uncover implicit meaning couched

³⁴ Gesture and proxemics are also considered to be paralinguistic components of communication. For a full consideration of paralinguistic, see for example Fernando Poyatos, *Nonverbal Communication Across Disciplines 2: Paralanguage, Kinesics, Silence, Personal and Environmental Interaction* (Amsterdam: John Benjamins Publishing Company, 2002).

in works and cultural phenomena, a perceptual approach invites a return to the “lower” level of sensory perception and a *re-viewing* of reading as an act of sensory-perceptual engagement with objects in the world.

Bordwell takes a staunch position against interpretive conventions in his 1989 essay titled “Why Not to Read a Film,” calling on critical analysts to pay more attention to films’ “surfaces.”³⁵ Though not highly influential at the time of its publication, Bordwell’s critique anticipated the “sensory turn” in humanistic studies and the current burgeoning of interest in cognitive approaches to the study of the arts and literature. Cognitive literary theorist Howard Mancing has recently carried Bordwell’s argument forward by drawing a firm distinction between the perception of events in the world and the reading of texts:

Perceiving and knowing something is simply not the same thing as reading and knowing something. Perceptual understanding, the primary cognitive mode in nature, is not at all linguistic, and by definition is cannot involve “reading.”³⁶

Mancing argues that the theoretical perspective of “reading” performances perpetuates the favoring of verbally expressed knowledge over the sensory, the affective, and the kinetic. He points out that while the reading of narrative text is an essentially diegetic experience in which readers creatively imagine as they read, theatre performances are embodied, multisensory events that are tangibly present for audiences. The experiencing of films or theatrical performances, in other words, fundamentally requires both vision and audition of physical phenomena in the moment of exposure. In the act of reading,

³⁵ Bordwell, *Making Meaning: Inference and Rhetoric in the Interpretation of Cinema* (Cambridge MA: Harvard University Press, 1989), 264.

³⁶ Mancing, Howard, “See the play, read the book,” in McConachie & Hart, *Performance and Cognition*, 189-94.

however, the eyes do not actually see events of the narrative, but rather, letters and words on a page. Similarly, any sounds evoked while reading occur via the creative imagination rather than via the aural perceptual channel.³⁷

Audiences of Forsythe's visually scored works do see and hear *performers* in the act of score-reading. Given that their readings result in vocal utterances, it seems logical to consider these modalities instances of oratory performance. However, Forsythe's voiced dancing in these works specifically elides the textual aspects of speech while retaining the bodied action of the voice. *Decreation's* counter-articulations and *You made me a monster's* visual and aural score translations give voice to physical states of bodies and produce visuo-sonic metaphors of internal turmoil. In *Heterotopia*, letters and nonce words scattered throughout the front room are "read" by the performers, who translate these, along with Willems' musical score and the sounds and movements produced by other performers, into streams of vocal sound and dance movement. However, none of the words or sounds produced as visual or sonic artifacts constitutes actual language. Nonetheless, *Heterotopia's* performers stage dialogues in which the structure and timbre of discourse are clear and concrete. The nonce words formed on the tables and the monologues and conversations constructed by the performers offer comprehension at the level of the embodied experience of speaking and moving. Importantly, in all of the works described here, comprehension occurs in the absence of true text. Forsythe essentially divorces textual content from its assumed critical role in the oratory function

³⁷ Ibid.

by demonstrating how the action of the body and the nonverbal parameters of speech are capable of producing and sustaining discourse in its absence.

The sounds produced by the dancers in these works are thus more aptly understood as vocalizations rather than orations. Paul Zumthor offers a useful distinction between orality, “the functioning of the voice as the bearer of language,” and vocality, “the whole of the activities and values that belong to the voice as such, *independently of language*” (italics mine).³⁸ Julia Kristeva’s similar distinction is shared by Roland Barthes, who distinguishes between the singer’s pheno-song (contentive speech components), and geno-song (sonorous dictional qualities). For Barthes, the qualities of the *grain* of the voice evoke in the listener a sensual engagement with the body of the singer:

The ‘grain’ is the body in the voice as it sings, the hand as it writes, the limb as it performs. If I perceive the ‘grain’ in a piece of music and accord this ‘grain’ a theoretical value (the emergence of text in the work), I inevitably set up a new scheme of evaluation which will certainly be individual – I am determined to listen to my relation with the body of the man or woman singing or playing and that relation is erotic – but in no way ‘subjective’ (it is not the psychological ‘subject’ in me who is listening; the climactic pleasure hoped for is not going to reinforce – to express – that subject but, on the contrary, to lose it) [...] leaving aside the voice, the ‘grain’ – or the lack of it – persists in instrumental music; if the latter no longer has language to lay open *significance* in all its volume, at least there is the performer’s body which again forces me to evaluation.³⁹

Forsythe’s intermodal choreographies are *dancing music* that extends dance into the other, inner spaces of the body, translating the “grain” across the senses of vision and audition. Through performative linkages of visual and sonic action, the performers

³⁸ Zumthor, preface to Corrado Bologna, *Flatus vocis: Metafisica e antropologia della voce* (Bologna: Il Mulino, 2000), vii.

³⁹ Barthes, “The Grain of the Voice,” in *Image, Music, Text* (New York: Hill and Wang, 1977), 188.

visibly and audibly express the lived experience of their dancing. The body, so often silent in performance, is enabled to “speak for itself,” and does so on its own terms, asserting its role in the construction of meaning and inverting the hierarchy of language and perceptual experience. Such dancing voices demand consideration within discourses about the works; they also call for analysis that proceeds across sensory modalities.

Chapter 9

Conclusion

This dissertation has focused on the works and working methods of choreographer William Forsythe and his ensemble. In particular, this study has analyzed Forsythe's staging practices and choreographic processes from a visuo-sonic perspective. I have advanced a twofold argument, calling for amplified attention to the role of sound in the performativity of dance and for an approach in which visuo-sonic analysis is supported by a cognitive approach understood as a broad plurality of theoretical paradigms and research practices. The study has developed and applied the concept of *perceptual performativity* to capture ways in which Forsythe taps the limits and proclivities of auditory and visual perception in order to activate awareness of *the performance of perception* itself in both audiences and performers. A selection of sound categories and their instantiations in Forsythe's works was chosen to illuminate the visuo-sonic underpinnings of perceptual performativity in Forsythe's works and choreographic practices.

This chapter opens with a brief review of the aims and motivations of this study and a summary of its theoretical and methodological approach. This is followed by a summary of the study's general and specific findings, evaluation of the implications of the analysis, and discussion of its limitations. The chapter closes by suggesting possibilities for future research.

9.1 Summary of aims and motivations

This study analyzed the visuo-sonic underpinnings of the performativity of Forsythe's staging practices and choreographic processes by applying a range of cognitive approaches. The motivations of the research, identified and discussed in Chapter 1, included:

- (i) my interest in dance's perceptual performativity – i.e., the role played by sensory perception in performative choreographic and staging practices
- (ii) the pervasiveness and audio-visuality of performativity in Forsythe's works and choreographic methods
- (iii) the potential of cognitive studies to illuminate performativity and contribute to discourses in dance studies.

As also explained in Chapter 1, my research is underpinned by four related objectives:

- (i) to illuminate perception as a key factor in Forsythe's choreographic and directorial practice
- (ii) to highlight dance practice and performance as implicating and choreographing the performance of perception across the differing but merged sensory modalities of vision and audition
- (iii) to demonstrate the productivity of a broad and plural cognitive approach for the study of dance making and dance reception
- (iv) to show the potential of this approach for intra- and interdisciplinary dialogue – i.e., with both extant dance and performance theory discourses and cognitive psychology.

To pursue these aims, the study followed two recent turns in humanistic study, taking a cognitive approach and multimodal perspective to Forsythe's work. As noted in Chapter 3, humanistic cognitive research is characterized by naturalistic explanation, reduced-scope inquiry, and a diversity of theoretical and practical perspectives. As the literature reviewed in Chapter 3 shows, the extant body of cognitive dance research, like cognitive humanistic studies in general, employs an array of theoretical paradigms and manifests a range of research methods. In applying a cognitive approach understood as a broad plurality of potential engagements with cognitive research, and by contributing the concept of perceptual performativity, the study augments cognitive dance studies in general and research on Forsythe's works and choreographic practices in particular, while also seeking to promote dialogue within and across the disciplines of cognitive psychology, dance studies, and other areas of humanistic study.

By broadening the scope of this study to include auditory as well as visual analysis of choreographic instances and practices, this study critiques both empirical paradigms that study the individual senses in isolation and the inherited ocularcentrism of humanistic studies. In doing so, the study foregrounds dance as an inherently visuo-sonic phenomenon whose production and reception is profoundly influenced by the merged and mutually influential nature of sensory perception. As argued in Chapter 3, choreomusical studies have limited applicability to the study of contemporary dance due to the array of sound included in contemporary dance soundscores, the genre's employment of choreographic and sonic improvisation, and performative strategies of combining dance and sound. My analyses in Chapters 5 – 8, which are framed by specific categories of

soundscore elements found in Forsythe's works, demonstrate the efficacy of combining these two approaches.

The study was also informed by the concept of perceptual performativity elaborated in Chapter 4. Rather than focusing on the power of events to constitute subjects as gendered, raced, or classed, or to subversively highlight constitutive norms of subjective identity, the concept of perceptual performativity instead reveals how performatively composed theatrical events or movement modalities serve to constitute subjects as perceiving agents by illuminating the limitations and proclivities of perception and the sensorial norms of theatrical presentation and practice. As shown in this chapter, perceptual performativity is not limited to contemporary dance but also figures in prior genres such as Romantic ballet. In Chapters 5 – 8, I show that perceptual performativity is a pervasive factor in Forsythe's work, manifesting in the ensembles' choreographies and improvisational modalities and involving the senses of both vision and audition in a continuously extending program of choreographic research.

9.2 Summary of findings

This study focused specifically on exploring the visuo-sonority of Forsythe's works and choreographic methods. By investigating sound and its roles in staging and choreographic processes, I focused on aspects of Forsythe's works and choreographic methods which tend to be under-analyzed or underemphasized in studies of Forsythe's work. A central aim of the investigation was to illuminate the aural and visual underpinnings of performativity in Forsythe's work and the ways in which the merging of

the senses affords the ensemble complementary and augmentative possibilities for structuring choreographic modalities and staging practices. The range of findings in Chapters 5 – 8 offers support to the overall findings of this dissertation, which are:

- (i) Forsythe's works and choreographic practices are underpinned by a performativity that is perceptual in nature and which involves not only visual but also sonic compositional strategies
- (ii) This perceptual performativity can be productively analyzed through a cognitive and audio-visual approach.

Chapters 5 and 6 focused on approaching the concept of spectacle from a cognitive and visuo-sonic perspective. To frame the discussions in these two chapters and establish the level of phenomena analyzed in this study, I drew a distinction between the analysis of performance as a category of event and the analysis of individual instances within performances which are perceived of as spectacular, *moving* moments. In Chapter 5, I examined two categories of reduced sound: significant periods of *hush* in which sound volume is abruptly shifted, and profound, lengthy silences which, as I indicated, are reflected in audience response to such scenes. As I noted, *hush* in Forsythe's repertory takes two forms: unaccompanied works or work sections punctuated by sound, and accompanied works with abrupt sonic cessations. In this chapter, I illuminated both contrasting views on the effects of silence in dance performance and the tendency to regard dance without musical accompaniment as "silent" in spite of the presence of performer-generated or ambient sounds. As I discussed, both the absence of expected music and the inclusion of musical caesura have the performative effects of increasing

attention to soundscapes and heightening audience arousal and suspense. Research on the orienting reflex, which supports this finding, complicates the view espoused by Humphrey that silence “rests” the ear and facilitates increased visual perception. As sonic caesura are not matched with visual stillnesses in Forsythe’s works, I argue that Forsythe isolates and taps reflexive attentional tendencies to performatively enhance and sustain the experience of visuo-sonic spectacularity. In the case of sustained onstage silences, I reveal a differing performative dynamic which involves two strategies: a counterpointing of changing informational level on one sensory channel against a continuous level on the other, and a full cessation of both visual and auditory stimulus. As I argue, these silences repeatedly evoke and extend audience anticipation of coming events without shifting aural attention to the ambient soundscape. These findings support my concluding view that silence, which is commonly deployed as a control condition in empirical studies of sound, warrants consideration and study as a category of sonic event in its own right.

Chapter 6 took up two additional and contrasting categories of *enchanted* spectacular visuo-sonic structures I term *overwhelm* and *lull*. In this chapter, I argue that scenes of *overwhelm*, or seemingly unorganized and stressing excesses of sonic and visual “noise,” produce a stunning overload that engenders altered experiences that, as I hold, approach the sublime. By contrast, long, lulling passages of building minimalistic musical structures and hypnotic repetitive movement patterns punctuated by “disturbing” visuo-sonic interruptions unsettle audiences through the production and sustainment of an unpredictable rhythm of alternation between reduced novel information and attention-capturing disruption. I conclude by linking cognitive studies of non-ordinary states of

consciousness (NOSCs) to Attali's views on the ideological functions of music and noise. My analysis, which highlights a lack of cognitive research on "milder" forms of NOSC, such as spectatorial experience in theatre, offers two potential categories of event upon which empirical studies could be focused. Together, Chapters 5 and 6 demonstrate that Forsythe's approach to spectacularity is visuo-sonic in nature and performatively grounded in alternations between the presentation of spectacular conditions and their interruption.

In Chapters 7 and 8, my analysis turned to the most recent extension of Forsythe's dance-sound research, which I term *visuo-sonic choreography*. In this choreographic paradigm, establishing the bodies of the performers as sounding elements and linking their sounds to the actions of dancing highlights the common cognitive ground shared by visual and auditory perception and, in doing so, opens new possibilities for the study of dance from an intermodal perspective. As I show, by tapping the common perceptual ground between vision and audition, Forsythe also deploys the aural channel in these modes of choreographic practice as a vector for performative experience by the performers. Chapter 7 explored the first of two categories, "breath scores" consisting of breath gestures and other sounds produced by moving dancers. In this chapter, I showed how this choreographic strategy not only increases the intimacy of performances but also heightens and focuses the attention of both audiences and performers by exploiting the multimodality of movement and the perceptual proclivity to discern the sources of sounds. I also revealed how in Forsythe's *Three Atmospheric Studies* part 1, the breath

score serves performative ends by affording potentially deceptive cueing and by freeing the gaze of the performers from a necessary connection to action onstage.

Chapter 8 highlighted how Forsythe's re-cognition of the vocal tract's muscular contiguity with the body's visual surface led to improvisational strategies in which dance movement is reflected in fully voiced vocal performance or in which vocalized or other sounds provide impetus for improvisational movement. In this chapter, I offered a refinement of both Lehmann's views on simultaneity and Forsythe's idea of visual counterpoint by discussing and exemplifying counterpoint as an intermodal phenomenon that provides the options of both intra- and crossmodal counterpoint structure. In this chapter's conclusion, I argue that the non-textual nature of vocalizations in this choreographic modality, together with the cognitive analytic approach taken, problematize text-based theoretical perspectives on dance by throwing into question the assumed critical role of textual content in oratory.

9.3 Implications of the study

As indicated in Chapter 2, the objectives of my study are indebted to observations and insights proposed in scholarly studies of Forsythe's works, including Sulcas (1991, 1995a, 1995b, 1996, 1999, 2001), Siegmund (2002a 2002b, 2004a, 2004b, 2006), Baudoin & Gilpin (1989), Gilpin (1993, 1995), Spier (2005, 2011), Huschka (2001, 2004), Marr (2005), Berger (2006), and Midgette (2000). By focusing on both sonic and visual aspects of Forsythe's choreography, staging, and dance making practices, my study further extends and develops these studies' interpretations and observations.

Taking a cognitive and visuo-sonic approach to Forsythe's work meant gaining a new perspective on – or as one could say, listening with a fresh ear to – the authors above. As noted, the language of these authors' analyses repeatedly indicates the rootedness of the performativity of Forsythe's works and choreographic practices in *the performance of perception*. The inhering tendencies and limitations of this performance, which is executed by both audiences and performers, are the foundation upon which Forsythe and the ensemble develop and elaborate choreographic and staging strategies. In a very real sense, the work of Forsythe and his ensemble constitutes perceptual research in which, to adopt an idea from neurobiologist and neuroesthetics pioneer Semir Zeki, the artists study perception with techniques unique to their practice.¹ In this study, I have followed both Forsythe's research and that of the authors cited above, turning to the auditory and the cognitive in order to emphasize that “many senses guide the mind” and to illuminate the role of this sensory merge in choreographic practice. Thus, this study makes an important contribution to the existing body of critical work on Forsythe and his ensemble – one, it is hoped, that will foster and deepen continued inquiry.

By offering a visuo-sonic analysis of dance works and choreographic practices and a new theoretical paradigm for the study of performative affect, this study also extends the burgeoning field of cognitive humanistic studies. My investigation is indebted to a range of cognitive studies from other humanistic disciplines, including film studies from Bordwell (1989, 1996), Carroll (1996a, 1996b), Smith (2009), Tuck (2008), and Chion (1994), the music studies of Schaeffer (1966), cognitive literary studies from

¹ Zeki, *Inner Vision: An Exploration of Art and the Brain* (Oxford, Oxford University Press, 1999), 10.

Mancing (2006), Richardson & Steen (2002), and Spolsky (2003), theatre studies from McConachie & Hart and others (2006), and the oral cultural history programs of Ong (1962, 1967, 1977) and Serres (1985/2008). My discussion is also indebted to prior studies in dance and theatre that adopt cognitive approaches, including Hagendoorn (2003a, 2003b, 2004, 2005a, 2005b, 2011) and particularly Fogelsanger & Afandour (2006). These studies demonstrate the viability of applying cognitive research in analytical studies of dance. In its methodology, the current study also demonstrated the applicability of a naturalizing approach informed by Bordwell's concept of middle-level research and Carroll's piecemeal theorizing approach by approaching Forsythe's choreographies at the level of instances within works and grounding analyses of these in cognitive research. In addition, this study exemplified the views of Carroll, Spolsky, and McConachie & Hart on the potential for differing interdisciplinary perspectives to provide opportunities for critique and refinement of hypotheses. In Chapter 3 of this study, I carried out this critique by drawing a contrast between perceptual performativity and predominant humanistic orders such as textual and identity-based concepts of performativity. In Chapter 5, I indicated the need for cognitive research on silence as a category of sonic event, while in Chapter 6, I suggest spectatorial experience of performance as a "milder" category of non-ordinary state of consciousness warranting study. Finally, In Chapter 8, I critiqued the viability of textual paradigms of dance analysis in light of performance that provides neither coherent narrative nor textual content. Together, these analyses demonstrate the critical productivity of the interdisciplinary approach applied in this study.

This study has also drawn on empirical research from a variety of sub-disciplines of cognitive psychology, including studies in developmental psychology by Spelke (1976, 1979), gesture studies by Zukow-Goldring (1997), cognitive semiotics by Brandt (2006), zoology by Dethier (1987), and environmental psychology by Wohlwill (1974). The studies cited here inform my analyses in Chapters 5 – 8 of various categories of soundscore and choreographic practice. The range of cognitive studies on which this investigation has drawn indicates the breadth of applications that cognitive research can offer to dance studies. In parallel, choreography and spectatorship stand as registers of event that can inform studies in these cognitive disciplines as well as many others. Recent interdisciplinary research initiatives cited in Chapter 3, such as *Choreography and Cognition*, which was initiated by Scott deLahunta and Wayne McGregor, and the three multi-year research projects of Shirley McKechnie, Robin Groves, and Kate Stevens, as well as *Motion Bank*, a research platform sponsored by The Forsythe Company, have fostered and continue to promote such investigation by facilitating dance research from a wide range of cognitive sub-disciplines.²

In taking the concept of perceptual performativity derived in Chapter 4 as its theoretical point of departure, and in advancing a visuo-sonic perspective, this study also extends the field of performance research, specifically the study of performativity in contemporary dance and “sensuous” studies of culture and performance. My investigation also extends Lehmann’s analysis of postdramatic theatre’s increased

² The *Motion Bank* project recently sponsored the first of a set of workshops titled “Dance Engaging Science.” The workgroup for these workshops includes researchers from the fields of biomechanics, neuroscience, interactive cognition, cognitive anthropology, cognitive philosophy, and auditory cognition. See <http://motionbank.org/en/research-2/> (accessed August 25, 2011).

musicalization and physicality, its independent auditory semiotics, and its specific attentional demands (1999) by highlighting the perceptual nature of performativity in Forsythe's work and grounding its analysis in cognitive research. With regard to this facet, my study is specifically indebted to Huschka's (2004) delineation of Forsythe's choreographic processes as "perceptual technologies." In addition, this study extends dialogue on the concept of counterpoint in dance by revealing the intermodality of counterpoint in Forsythe's works and his recent exploration of the performative potentials of intermodal choreography. Here, my investigation is indebted to the choreomusical studies of Jordan (1993, 1996, 2000, 2002, 2007) and analyses of "mickey mousing" and counterpoint by White (2006). Finally, my analysis of scenes from *Giselle* in Chapter 4 also demonstrated that the concept of perceptual performativity is applicable beyond the study of contemporary dance. This study thus offers a variety of contributions to dance and performance studies.

In Chapter 3, I pointed out research in the field of cognitive literary studies that has exemplified Bordwell and Carroll's vision of robust plurality. Another question which must be asked is whether an interdisciplinary plurality including cognitive approaches is desirable, and for whom. As Carroll comments, "There are sound sociological reasons for believing that scholars who are already deeply invested in a paradigm are unlikely to surrender it."³ Though pessimistic regarding the willingness of

³ Carroll, "Prospects," 67-8. With regard to this volume, Bordwell and Carroll point out that though its collected essays are aligned in their turning away from psychoanalytic paradigms, the volume is not restricted to cognitive approaches alone but also includes essays focused on historical and economic issues. Furthermore, they point out that a large number of the cognitive essays in their volume are fundamentally at odds with one another. The authors view this variety of theoretical positions as a healthy and desirable disciplinary state and one that reflects the field of cognitive studies itself (xv-xvi).

scholars to “change their spots,” Carroll emphasizes that critical debate is a key element in any theoretical enterprise and encourages a serious consideration of the potential of cognitive approaches, as well as all other approaches that may offer meaningful contributions.⁴ Similarly, Massumi calls for an “expanded empirical field,” envisioning a process line that is “a broad sweep from philosophy to art, through a middle region that is shared, in passing, with science” and faulting the discipline of cultural studies with a lack of audacity to fully cover the distance between nature and culture.⁵

Though academic dance programs currently address cognitive issues through somatically-based theoretical and practical coursework, it is remarkable, given the key role of visual and auditory perception in dance practice and reception, that these do not figure more substantially in curricula. Writing with reference to the field of visual studies, James Elkins comments that while various visual competencies are central aspects of study in the sciences and in engineering, the study of perceptual processes has found little place within the humanities. I echo Elkins by holding that rather than providing elementary overviews of sensory anatomy and function, which tend to imply that subjects like perception and attention are simply grasped and thoroughly understood, students would derive greater benefit from a more demanding but also more rewarding direct and rigorous engagement with empirical and analytic perceptual studies relevant to the field.⁶ In turn, cognitive researchers with interests in dance will profit from collaborative research with performers and from continued consideration of dance

⁴ Ibid.

⁵ Massumi, *Parables*, 252-3, 255.

⁶ Elkins, “Ten Ways to Make Visual Studies More Difficult,” in *Visual Studies: A skeptical introduction* (London, Routledge, 2003), 87-9.

production and reception as distinct and uniquely specified registers of human perceptual activity.

9.4 Limitations of the study

As noted in Chapter 1, this study has necessarily used a limited data set. Instances and choreographic modalities were selected to exemplify specific categories of visuo-sonic composition and demonstrate the pervasiveness of perceptual performativity in Forsythe's work. The limitations of data selection were therefore deliberate in nature. My survey of sonic categories and visuo-sonic engagements is not intended to stand as a full representation of performativity, perceptual or otherwise, in Forsythe's works or choreographic methods.

As further noted, in giving limited consideration to works and sections of works in which the order of steps and accompanying music are strictly delimited and set, this study is not a choreomusical analysis in the sense of Hodgins' or Jordan's research. Further, this study did not exhaustively survey Forsythe's improvisationally based works or improvisational methods. Lastly, in the interest of focusing on demonstrating the efficacy and productivity of the theoretical and methodological approach developed, this study did not pursue all avenues of metacritique made possible by the analyses. In the above respects, this study is limited and selective in its focus. However, the contributions of this investigation have been to develop the concept of perceptual performativity, illuminate the role played by merged audio-visual perception in its manifestation, and demonstrate the efficacy of a linkage of cognitive and visuo-sonic approaches.

9.5 Future research

There are a number of possibilities for future development of the approaches taken in this study. In addition to extending this research by focusing on Forsythe works not included in my analyses, works and choreographic practices of other choreographers might be considered from this perspective. As the soundscore categories selected for this analysis figure in many other dance forms, and as other visuo-sonic compositional strategies also engender perceptually performative experience, such study can profitably take as its subject not only other exemplars of Western contemporary dance but also works from other periods and other dance or performance traditions.

Additionally, though the current study has promoted the value of a visuo-sonic focus, other sensory mergings can also be explored. Contemporary choreographic and theatrical practice currently reflects strong interest in exploring the sensuous boundaries of performance, exploring not only visual and sonic elements but also the potentials of the so-called “lower senses” of tactility, olfaction, or gustation.⁷ There is also a specific need to study the ways in which Forsythe has tapped the merging of visual and somatosensory perception in modalities such as “disfocus,” which I briefly discussed in Chapter 3.

This study’s cognitive approach, which, as I note above, is indebted to scholarship from cognitive studies in film, literature, music, and dance, can be further extended

⁷ Multisensory performance, however, has been a subject of interest and experimentation since the late Renaissance, with Giuseppe Arcimboldo (1527-1593) and Louis Bertrand Castel (1688-1757) producing the first “color organs” by coding musical pitch to chromatic hues. Better known later examples are Alexander Scriabin’s (1872-1915) planned synesthetic composition *Mysterium* and Kandinsky’s engagement with synesthetic dissonance in his “color-tone drama” *Der Gelbe Klang* (*The Yellow Sound*), which was conceived in 1909 but not performed during his lifetime.

through additional consideration of the topics considered here and others which are applicable to the study of dynamic, temporally unfolding biological events. These include attention, pattern recognition, categorization, memory, concept formation, learning, and gesture perception. It is further hoped that the analyses in this study will increase and broaden already present interest in dance within the field of cognitive psychology through the development of empirical studies that take as their stimuli dance performance instances and specific choreographic modalities.

Jola & Mast, noting the paucity of cognitive dance studies in 2005, include among their reasons the historical exclusion of dance from interdisciplinary scientific explanations of art, the difficulty of studying dance using rigorous scientific methods, and the persistent tendency to consider the body and mind separately in research on the embodied experience of dance.⁸ Though the authors note that dance studies commonly focus on philosophical, historical, aesthetic, and therapeutic issues, they do not address the specific lack of cognitive research that focuses on processes that are not related to therapeutic concerns. Their claim that “Much less is known about the mental processes associated with dance”⁹ might be refined to read “Much less is known about *non-therapeutic issues* of mental processes associated with dance.” The field of dance psychology, which is often also referred to as dance science, is viable and established, with clearly beneficial applications and, hence, good prospects for research support in the form of both funding and research community. As I have argued elsewhere, however, “dance science,” with its focus on the improvement of dancers’ physical and mental

⁸ Jola & Mast, “Dance images,” 216-17.

⁹ Ibid., 216.

health and performance, is practically synonymous with “dance medicine.”¹⁰ The cognitive dance studies described in this dissertation explore a different set of questions which are tied not to therapeutic solutions – how the dancer can work better – but rather are focused on the nature and processes of dancing minds, dance-viewing minds, and on “how the dance works” itself. Further, because cognitive dance studies are typically not based on the psychoanalytic paradigms that underpin poststructuralist dance theory, this research currently has less resonance – and in many cases even dissonance – with extant dance studies.

Finally, the dialogic potential of this study’s perspective warrants further research. In this study, I have shown the pervasiveness of perceptual concepts in writings on Forsythe’s work and have suggested that the same is true of dance studies at large. I have also demonstrated the metacritical potentials afforded by discourse between the approach developed here and extant approaches to understanding dance. It is hoped that further theoretical and empirical studies will extend this disciplinary dialogue in order to increase and refine thinking about perception in dance studies.

¹⁰ Vass-Rhee, “Integrating Dance and Cognitive Science: Toward Emancipatory Research.” *Proceedings of the 38th Conference of the Congress on Research in Dance* Tempe, Arizona, November 2-5, 2006 (Congress on Research in Dance, 2007): 150.

Bibliography

- Aldridge, David, and Jörg Fachner. *Music and Altered States: Consciousness, Transcendence, Therapy and Addiction*. London: Jessica Kingsley Publishers, 2009.
- Alexander, Frederick Matthias. *Man's Supreme Inheritance*. London: Methuen, 1910. Revised and enlarged version published New York: Octavo, 1918.
- Anderson, Joseph. *The Reality of Illusion: An Ecological Approach to Cognitive Film Theory*. Carbondale & Edwardsville: Southern Illinois University Press, 1996.
- Ando, Yoko. "Yoko Ando on Budo." Accessed June 9, 2011. <http://art-budo.hino-budo.com/art-budo/Contact-between-Budo-and-dance.htm>.
- Aristotle. *Metaphysics* (350 B.C.) Translated by W.D. Ross. Oxford: Clarendon Press, 1924.
- . *Poetics* (355 B.C.) Translated by Samuel Henry Butcher. Mineola NY: Dover, 1997.
- Arnheim, Rudolf. *Visual Thinking*. Berkeley: University of California Press, 1969/2004.
- Attali, Jaques. *Noise: The Political Economy of Music*. Minneapolis: University of Minnesota Press, 1985. Originally published as *Bruits: essai sur l'économie politique de la musique*. Paris: Presses Universitaire de France, 1977.
- Austin, James L. *How to do Things with Words: The William James Lectures delivered at Harvard University in 1955*. Edited by J. O. Urmson. Oxford: Clarendon, 1962.

- Bacci, Francesca, and David Melcher, eds. *Art & the Senses*. Oxford: Oxford University Press, 2011.
- Bachmann-Medick, Doris. *Cultural Turns: Neuorientierungen in den Kulturwissenschaften* (New Orientations in Cultural Studies). Reinbek/Hamburg: Rohwolt Taschenbuch Verlag, 2006.
- Bahrick, L.E. & Hollich, G. "Intermodal perception." In *Encyclopedia of Infant and Early Childhood Development 2*, edited by M. Haith & J. Benson, 164-76. Amsterdam & London: Elsevier Ltd./Academic Press, 2008.
- Baillargeon, R. "Object permanence in 3.5- and 4.5-month old infants." *Developmental Psychology* 23 (1987): 655-64.
- Baillargeon, R. and DeVos, J. "Object Permanence in Young Infants: Further Evidence." *Child Development* 62, no. 6 (1991): 1227-46.
- Baldwin, D. A. "Interpersonal understanding fuels knowledge acquisition." *Current Directions in Psychological Science* 9, no. 2 (2000): 40-45.
- Ball, W.A. "Perception of causality in the infant." Paper presented to the Society for Research in Child Development, Philadelphia, 1973.
- Banes, Sally, and André Lepecki, eds. *The Senses in Performance*. New York & London: Routledge, 2007.
- Banes, Sally, and Noël Carroll. "Cunningham and Duchamp." In *Writing Dancing in the age of postmodernism*, edited by Banes, 109-18. Middletown: Wesleyan University Press, 1994.

- Banes, Sally. "Yvonne Rainer: The Aesthetics of Denial." In *Terpsichore in Sneakers: Post-Modern Dance*, 41-53. Middletown: Wesleyan University Press, 1987. First published in 1977 by Houghton Mifflin.
- . *Dancing Women: Female Bodies on Stage*. London & New York: Routledge, 1998.
- Baron-Cohen, Simon. *Mindblindness: An Essay on Autism and Theory of Mind*. Cambridge: MIT Press / Bradford Books, 1995.
- Bartenieff, Irmgard, and Dori Lewis. *Body Movement: Coping with the environment*. New York: Gordon & Breach, 1980.
- Barthes, Roland. "The Grain of the Voice." In *Image, Music, Text*, 179-89. New York: Hill and Wang, 1977.
- . "The World of Wrestling." In *Mythologies*, 15-25. St. Albans: Paladin, 1976.
- Bartlett, D.L. "Physiological reactions to music and acoustic stimuli." In *Handbook of music psychology*, 2nd edition, edited by Donald Hodges, 343-85. San Antonio TX: IMR Press, 1996.
- Bateson, Gregory, and Margaret Mead. *Trance and Dance in Bali*. Motion picture. New York: University Film Library, 1951.
- Baudoin, Patricia, and Heidi Gilpin. "Proliferation and Perfect Disorder: William Forsythe and the Architecture of Disappearance." In *Il Disegno che Non Fa il Ritratto: Danza, Architettura, Notazioni II*, edited by Marinella Guatterini. Reggio Emilia: Teatri di Reggio Emilia, 1989. Also published in *Parallax* evening program. Frankfurt am Main: Ballett Frankfurt, 1989.

Baudry, Jean-Louis. "The Ideological Effects of the Basic Cinematographic Apparatus."

Film Quarterly 28, no. 2, (Winter 1974-75): 139-47.

Becker, Judith. "Music and Trance." *Leonardo: Journal of the International Society for the Arts, Sciences and Technology* 4 (1994): 41-51.

———. *Deep listeners: Music, emotion, and trancing*. Bloomington & Indianapolis: Indiana University Press, 2004.

Becking, Gustav. *Der musikalische Rhythmus als Erkenntnisquelle*. Augsburg: Benno Filser, 1928.

Benveniste, Émile. *Problems in General Linguistics* (1966). Translated by Mary Meek. Coral Gables: University of Miami Press, 1971.

Berger, Christiane. *Körper denken in Bewegung: Zur Wahrnehmung tänzerischen Sinns bei William Forsythe und Saburo Teshigawara*. Bielefeld: transcript Verlag, 2006.

Berger, John. *Ways of Seeing*. London: Penguin, 1977.

Bernstein, Alvin. "The orienting response as novelty *and* significance detector." *Psychophysiology* 16, no. 3 (1979): 263-73.

———. "To what does the orienting response respond?" *Psychophysiology* 6, no. 3 (1969): 338-50.

Birdwhistell, Roy L. *Kinesics and context*. Philadelphia: University of Pennsylvania Press, 1970.

Bleeker, Maaïke. "Do You See What I Mean? *Artifact* and the Genesis of Vision on Stage." *VISIO: The Journal of the International Association for Visual Semiotics* 5, no. 2 (2000): 41-56.

- Blood, Anne, & Robert Zatorre. "Intensely pleasurable responses to music correlate with activity in brain regions implicated in reward and emotion." *Proceedings of the National Academy of Sciences USA* 98, no. 20 (2001): 1818–23.
- Blood, Anne, Robert Zatorre, Patrick Bermudez & Alan Evans. "Emotional responses to pleasant and unpleasant music correlate with activity in paralimbic brain regions." *Nature Neuroscience* 2, no. 4 (1999): 382–87.
- Boden, Margaret. *Mind as Machine: A History of Cognitive Science*. New York: Oxford University Press, 2006.
- Boenisch, Peter. "Decreation Inc.: William Forsythe's equations of 'bodies before the name.'" *Contemporary Theatre Review* 17, no. 2 (April 2007): 15-27.
- Bordwell, David. "A Case for Cognitivism." *Iris* 9 (Spring 1989): 11-16.
- . "Contemporary Film Studies and the Vicissitudes of Grand Theory." In *Post-Theory: Reconstructing Film Studies*, edited by Bordwell and Noël Carroll, 26-30. Madison: University of Wisconsin Press, 1996.
- . "Slavoj Žižek: Say Anything." Accessed February 22, 2007.
<http://www.davidbordwell.net/essays/zizek.php>
- . *Making Meaning: Inference and Rhetoric in the Interpretation of Cinema*. Cambridge, MA: Harvard University Press, 1989, 264.
- . *The Way Hollywood Tells It: Story and Style in Modern Movies*. Berkeley: University of California Press, 2006.
- Borton, R.W. "The perception of causality in infants." Paper presented to the Society for Research in Child Development, San Francisco, CA, 1979.

- Bourdieu, Pierre. *Language & Symbolic Power*. Translated by Gino Raymond and Matthew Adamson. Cambridge: Polity Press/Blackwell, 1991. Original essays published in French, 1977-1984.
- Brandl, R. "Musik und veränderte Bewusstseinszustände." In *Musikpsychologie: Ein Handbuch*, edited by H. Bruhn, R. Oerter and H. Rösing, 599–610. Reinbek: Rowohlt Verlag, 1993.
- Brandstetter, Gabriele. "Choreography As a Cenotaph: The Memory of Movement." In *ReMembering the Body*, edited by Gabriele Brandstetter and Hortensia Volckers, 102-34. Ostfildern: Cantz Verlag, 2000.
- . "Defigurative Choreography: From Marcel Duchamp to William Forsythe." *The Drama Review* 42, no. 4 (Winter, 1998): 37-55.
- Brandt, Per Aage. "Form and Meaning in Art." In *The Artful Mind: Cognitive Science and the Riddle of Human Creativity*, edited by Mark Turner, 171-188. Oxford: Oxford University Press, 2006.
- Bremner, J. Gavin, and Alan Fogel, eds. *Blackwell handbook of infant development*. Hoboken: Wiley-Blackwell, 2002.
- Briginshaw, Valerie. "Architectural spaces in the choreography of William Forsythe and De Keersmaeker's *Rosas Danst Rosas*." In *Dance, space and subjectivity*, 183-203. Hampshire: Palgrave, 2001.
- Brown, Ross. *Sound: A Reader in Theatre Practice*. New York: Palgrave Macmillan, 2010.

- Brown, S., M. Martinez, and L. Parsons. "The neural basis of human dance." *Cerebral Cortex* 16 (2006): 1157-67.
- Brownlow, Sheila, Amy Dixon, Carrie Egbert, and Rebecca Radcliffe. "Perception of movement and dancer characteristics from point-light displays of dance." *The Psychological Record* 47, no. 3 (1997): 411-21.
- Brüstle, Christa. "Auf Klänge aufmerksam (gemacht) werden: Strategien der Klangkunst." In *Wege der Wahrnehmung: Authentizität, Reflexivität und Aufmerksamkeit im zeitgenössischen Theater*, edited by Erika Fishcher-Lichte, Barbara Gronau, Sabine Schouten, and Christel Weiler, 140-52. Berlin: Theater der Zeit, 2006.
- Buckland, Warren. *The Cognitive Semiotics of Film*. Cambridge: Cambridge University Press, 2000.
- Bull, Cynthia Jean Cohen. "Sense, Meaning, and Perception in Three Dance Cultures." In *Meaning in motion: new cultural studies of dance*, edited by Jane Desmond, 269-88. Durham: Duke University Press, 1997.
- Bull, Michael, and Les Back, eds. *The Auditory Culture Reader*. Oxford: Berg Publishers, 2004.
- Burrows, Jonathan. *A Choreographer's Handbook*. London & New York: Routledge, 2010.
- Burt, Ramsay. *The male dancer: Bodies, Spectacle, and Sexuality*. London & New York: Routledge, 1995.

- Butler, Judith. "Performative Agency." *Journal of Cultural Economy* 3, no. 2 (2010): 139-46.
- . *Gender Trouble: Feminism and the Subversion of Identity*. New York: Routledge, 1990.
- Cage John. "Indeterminacy." *Die Reihe* no. 5. Accessed August 23, 2010.
<http://www.lcdf.org/indeterminacy/s.cgi?n=6&var=dr>
- . *Silence: Lectures and Writings*. Middletown: Wesleyan University Press, 1961.
- Callon, Michel. "Performativity, Misfires, and Politics." *Journal of Cultural Economy* 3, no. 2 (2010): 163-9.
- . "The embeddedness of economic markets in economics." In *The Laws of the Markets*, edited by Michel Callon, 1-57. Oxford: Blackwell Publishers/The Sociological Review, 1998.
- Calvo-Merino, Beatriz, Cosimo Urgesi, Guido Orgs, Salvatore M. Aglioti, and Patrick Haggard. "Extrastriate body area underlies aesthetic evaluation of body stimuli." *Experimental Brain Research* 204 (2010): 447-56.
- Calvo-Merino, Beatriz, Daniel Glaser, Julie Grèzes, Richard Passingham, and Patrick Haggard. "Action Observation and Acquired Motor Skills: An fMRI Study with Expert Dancers." *Cerebral Cortex* 15 (August 2005): 1243-49.
- Calvo-Merino, Beatriz, Julie Grèzes, Daniel Glaser, Richard Passingham, and Patrick Haggard. "Seeing or doing? Influence of visual and motor familiarity in action observation." *Current Biology* 16, no. 19 (2006): 1905-10.

- Carroll, Noël (1996a). "Prospects for Film Theory: A Personal Assessment." In *Post-Theory: Reconstructing Film Studies*, edited by David Bordwell and Noël Carroll, 37-68. Madison: University of Wisconsin Press, 1996.
- (1996b). *Theorizing the Moving Image*. Cambridge: Cambridge University Press, 1996.
- Carson, Anne. "Decreation: How Women Like Sappho, Marguerite Porete, and Simone Weil Tell God." *Common Knowledge* 8, no. 1 (2002): 188-201. Reprinted in Carson, Anne. *Decreation: Poetry Essays, Opera*. New York: Knopf, 2005.
- . *The Beauty of the Husband: A Fictional Essay in 29 Tangos*. Toronto: Vintage, 2002.
- Caspersen, Dana. "Decreation: Fragmentation and continuity." In *William Forsythe and the Practice of Choreography: It Starts From Any Point*, edited by Steven Spier, 93-100. London and New York: Routledge, 2011.
- . "It Starts From Any Point: Bill and the Frankfurt Ballet." In *William Forsythe. Choreography and Dance* 5, no. 3, 25-39. Chur: Harwood Academic Publishers, 2000.
- . Cited as Kaspersen, Dana. "L'inverse du mouvement." In *Interprètes, inventeurs, Cahiers du renard* 11/12, edited by Patrick Bossatti (1992): 73-75.
- . "Methodologies: Bill Forsythe and the Ballett Frankfurt." Walker Art Center. Accessed May 13, 2008. <http://blogs.walkerart.org/performingarts/2007/03/09/methodologies-bill-forsythe-and-the-ballett-frankfurt-by-dana-caspersen/>

- . “The Body is Thinking.” Walker Art Center. Accessed May 13, 2008.
<http://blogs.walkerart.org/performingarts/2007/03/09/the-body-is-thinking-the-body-is-thinking-by-dana-caspersen/> Earlier version: “Der Körper denkt: Form, Sehen, Disziplin und Tanzen.” In *William Forsythe: Denken in Bewegung*, edited by Gerald Siegmund, 107-116. Berlin: Henschel Verlag, 2004.
- Cave, Kyle, William Bush, and Thalia Taylor. “Split Attention as Part of a Flexible Attentional System for Complex Scenes: Comment on Jans, Peters, and De Weerd.” *Psychological Review* 117, no. 2 (2010): 685-95.
- Chion, Michel. *Audio-Vision: Sound on Screen*. Translated by Claudia Gorbman. New York: Columbia University Press, 1994.
- Choreography and Cognition* project. Accessed August 25, 2011.
<http://www.choreocog.net/>
- Cohen, Annabel J. “Film Music: Perspectives from Cognitive Psychology.” In *Music and Cinema*, edited by J. Buhler, C. Flynn, and D. Neumeyer, 360-77. Middletown: Wesleyan University, 2000.
- Cone, Edward. “Stravinsky: The Progress of a Method.” *Perspectives of New Music* 1, no. 1 (1962): 18-26.
- Connor, Steven. *Dumbstruck: A Cultural History of Ventriloquism*. New York: Oxford University Press, 2000.
- Copeland, Roger. “Merce Cunningham and the Politics of Perception.” In *What is Dance? Readings in Theory and Criticism*, edited by Roger Copeland and Marshall Cohen, 307-24. Oxford: Oxford University Press, 1983.

- Crary, Jonathan. "Eclipse of the Spectacle." In *Art After Modernism: Rethinking Representation*, edited by Brian Wallis, 282-94. New York: The New Museum of Contemporary Art, 1984.
- . *Suspensions of Perception: Attention, Spectacle, and Modern Culture*. Cambridge, MA: MIT Press, 1999.
- Cross, Emily, A. Hamilton, & S. Grafton. "Building a motor simulation de novo: Observation of dance by dancers." *Neuroimage* 31, no. 3 (2006): 1257–67.
- Cytowic, Richard. *The Man Who Tasted Shapes*. Cambridge, MA: MIT Press, 2003.
- Czikszentmihalyi, Mihalyi. *Beyond Boredom and Anxiety: Experiencing Flow in Work and Play*. San Francisco: Jossey-Bass, 1975.
- . *Flow: The Psychology of Optimal Experience*. New York: Harper and Row, 1990.
- Daly, Ann. "Feminist Theory Across the Millennial Divide." *Dance Research Journal* 32, no. 1 (Summer 2000): 39-42.
- . "The Balanchine Woman: Of Hummingbirds and Channel Swimmers." *The Drama Review/TDR* 31, no. 1 (Spring 1987): 8-21.
- Damasio, Antonio. *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*. New York: Houghton Mifflin Harcourt, 1999.
- Damsholt, Inger. "Mark Morris, Mickey, Mouse, and the Choreomusical Polemic." *The Opera Quarterly* 22, no. 1 (2007) 4-21.
- de Man, Paul. *Allegories of Reading: Figural Language in Rousseau, Nietzsche, Rilke, and Proust*. New Haven: Yale University Press, 1979.

- de Spain, Kent. "A Moving Decision: Notes on the Improvising Mind." *Contact quarterly* 20, no. 1 (1995). 48-50.
- . "Dance Improvisation: Creating Chaos." *Contact quarterly* 18, no. 1 (1993): 21-27.
- . "More Thoughts on Science and the Improvising Mind." *Contact quarterly* 19, no. 1 (1994): 58-63.
- . "The Cutting Edge of Awareness: Reports from the Inside of Improvisation." In *Taken by Surprise: A Dance Improvisation Reader*, edited by Ann Cooper Albright and David Gere, 27-38. Middletown: Wesleyan University Press, 2003.
- Debord, Guy. *The Society of the Spectacle* (1967). Translated by Donald Nicholson-Smith. Detroit: Black & Red, 2000.
- deLahunta, Scott. "Augmenting choreography: insights and inspirations from science." In *Contemporary Choreography: A Critical Reader*, edited by Jo Betterworth and Liesbeth Wildschut, 431-448. London & New York, Routledge, 2009.
- Derksen, Paul. "Forsythe's Image Breaking, 2/2." *Mediamatic* (9. 4). Accessed April 8, 2001. http://www.mediamatic.nl/magazine/9_4/derksen_forsythe/derksen_2gb.html
- Derrida, Jacques. "Signature Event Context" (1972). Translated by Alan Bass. In *Margins of Philosophy*. 307-330. Chicago: University of Chicago Press, 1982.
- Descartes, René (1637). *Discourse on Method, Optics, Geometry, and Meteorology*. Translated by Paul Olscamp. Indianapolis: Bobbs-Merrill, 1965.
- Dethier, Vincent. "Sniff, Flick, and Pulse: An Appreciation of Interruption." *Proceedings of the American Philosophical Society* 131, no. 2 (1987): 159-76.

- Donders, Karl. "On the speed of mental processes" (1869). *Acta Psychologica* 30 (1969): 412–31.
- Dowd, Irene. *Taking Root to Fly: articles on functional anatomy*. New York: Dowd, 1981.
- Driver, Senta, ed. *William Forsythe. Choreography and Dance* 5, no. 3. Chur: Harwood Academic Publishers, 2000.
- du Gay, Paul. "Performativities: Butler, Callon, and the Moment of Theory." *Journal of Cultural Economy* 3, no. 2 (2010): 171-79.
- Eisenstein, Sergei, Vsevolod Pudovkin, and Grigori Alexandrov. "A Statement" (1928). In *Film Form: Essays in Film Theory*, Translated by Jay Leyda, New York: Harcourt, 1949.
- Ekman, P. and Friesen, W. "The repertoire of nonverbal behavior: Categories, origins, usage, and coding." *Semiotica* 1 (1969): 49–98.
- Elkins, James. "Ten Ways to Make Visual Studies More Difficult." In *Visual Studies: A skeptical introduction*, 87-89. London, Routledge, 2003.
- Enggass, Robert. "Visual Counterpoint in Venetian Settecento Painting." *The Art Bulletin* 64, no. 1 (March 1982): 89-97.
- Eriksen, C., and J. St James. "Visual attention within and around the field of focal attention: A zoom lens model." *Perception & Psychophysics* 40, no. 4 (1986): 225–40.

- Evert, Kerstin. "Choreographie als Hypertext: William Forsythe." in *DanceLab: Zeitgenössischer Tanz und Neue Technologien*, 117-55. Würzburg: Königshausen & Neumann, 2003.
- . "Filmschnitt und Hypertextur: Medientechnologische Analogien im choreografischen Prozess bei Merce Cunningham und William Forsythe." In *William Forsythe: Denken in Bewegung*, edited by Gerald Siegmund, 145-57. Berlin: Henschel Verlag, 2004.
- . *DanceLab. Zeitgenössischer Tanz und Neue Technologie*. Würzburg, Königshausen & Neumann, 2003.
- Fachner, Jörg. "Wanderer between worlds: Anthropological perspectives on healing rituals and music." *Music Therapy Today* 8, no. 2 (2007): 166-95.
- Feldenkrais, Moshé. *Awareness Through Movement: Health Exercises for Personal Growth*. New York and London: Harper & Row 1972. Originally published as *Improving the Ability to Perform*, 1967.
- Ferraris, Maurizio. *History of Hermeneutics*. Amherst NY, Prometheus Books, 1996. (Originally published in Italian, 1988).
- Finke, Ronald, and Jonathan Bettle. *Chaotic cognition: principles and applications*. Mahwah: Lawrence Erlbaum, 1996.
- Fischer-Lichte, Erika, Barbara Gronau, Sabine Schouten, and Christel Weiler, eds. *Wege der Wahrnehmung: Authentizität, Reflexivität, und Aufmerksamkeit im Zeitgenössischen Theater* (Recherchen 33). Berlin: Theater der Zeit, 2006.

- Fischer, Eva-Elizabeth. "Thom Willems." Ballett Frankfurt website. Accessed May 31, 2003. www.frankfurt-ballett.de/thom_willems.htm
- Fish, Stanley. "Speech-Act Theory, Literary Criticism, and Coriolanus." *Centrum* 3, no. 2 (1975): 107-11.
- Fogelsanger, Allen. "Music Composition for Dance in the Twenty-First Century: Questions about the Dance/Music Relationship." Paper presented at the conference of the International Guild of Musicians in Dance, Stockholm, 1998.
- Fogelsanger, Allen, and Kathleya Afandour. "Parameters Of Perception: Vision, Audition, and Twentieth-Century Music and Dance." in *Continuing Dance Culture Dialogues: Southwest Borders and Beyond*. Proceedings of the 38th International Conference of the Congress on Research in Dance, Tempe, AZ, November 2-5, 2006, 56-65. Congress on Research in Dance, 2007.
- Foley, Kathy. "The Dancer and the Danced: Trance Dance and Theatrical Performance in West Java." *Asian Theatre Journal* 2, no. 1 (1985): 28-49.
- Forsythe, William, and The Ohio State University. *Synchronous Objects for One Flat Thing, reproduced*. The Ohio State University. Accessed April 10, 2009. <http://synchronousobjects.osu.edu/>
- Forsythe, William, and ZKM Karlsruhe. *Improvisation Technologies: A Tool for the Analytical Dance Eye*. CD-ROM. Ostfildern: Hatje Cantz Verlag, 1999.

- . “Choreographic Objects.” In *William Forsythe and the Practice of Choreography: It Starts From Any Point*, edited by Steven Spier, 90-92. London & New York: Routledge, 2011. Earlier version: Wexner Center for the Arts. Accessed January 28, 2009. <http://wexarts.org/ex/forsythe/>
- . “Der Tanzende Philosoph.” Interview with Sandra Luzina. *Tagesspiegel*. Oct. 27, 2000.
- . “Did Forsythe Invent the Modern Ballerina?” Interview with Roslyn Sulcas. *The Informer* online magazine, Classical TV, 2009. Accessed Oct 13, 2009. <http://www.classicaltv.com/the-informer/did-william-forsythe-invent-the-modern-ballerina>
- . “William Forsythe In the Middle.” Interview with Julie Copeland. Accessed May 27, 2005. <http://www.abc.net.au/arts/default.htm>
- . Interviewed by John Tusa. BBC Radio 3, February 2, 2003. Accessed March 12, 2003. http://www.bbc.co.uk/radio3/johntusainterview/forsythe_transcript.shtml.
- Foucault, Michel. *Fearless Speech* (collected essays from 1983), Edited by Joseph Pearson. Los Angeles: Semiotext, 2001.
- Fouilhoux, Biliana Vassileva. *L'Improvisation chez William Forsythe: une approche Singulière*. Dissertation. Université Paris III - Sorbonne Nouvelle, 2007.
- Fraleigh, Sondra Horton, and Penelope Hanstein. *Researching Dance: Evolving Modes of Inquiry*. Pittsburgh: Pittsburgh University Press, 1999.
- Francis, Sandra. “Exploring Dance as a Concept: Contributions from Cognitive Science.” *Dance Research Journal*, 28 (Spring 1996): 51-66.

- Frank, Michael C. "Imaginary Geography as a Travelling Concept: Foucault, Said, and the spatial turn." *European Journal of English Studies* 13, no. 1 (April 2009): 61-77.
- Gallagher, Shaun. *How the Body Shapes the Mind*. Oxford: Oxford University Press, 2005.
- Gallese, V., L. Fadiga, L. Fogassi, & G. Rizzolatti. "Action recognition in the premotor cortex." *Brain* 119, part 2 (1996): 593-609.
- Gardner, Howard. *The Mind's New Science: A History of the Cognitive Revolution*. New edition. New York: Basic Books, 1987.
- Gell, Alfred. *Art and Agency: An Anthropological Theory*. Oxford: Clarendon Press, 1998.
- Gibson, E. and A.D. Pick. *An ecological approach to perceptual learning and development*. New York: Oxford University Press 2000.
- Gibson, James J. *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin, 1979.
- . *The Senses Considered as Perceptual Systems*. Westport: Greenwood Press, 1966.
- Gilpin, Heidi. "Aberrations of gravity." *ANY: Architecture New York*, no. 5 (1994): 50-5. Reprinted in *William Forsythe and the Practice of Choreography: It Starts From Any Point*, edited by Steven Spier, 112-127. London and New York: Routledge, 2011.
- . "William Forsythe. Where Balance Is Lost and the Unfinished Begins." *Parkett* 45 (1995): 6-11.

- . *Failure, repetition, amputation, and disappearance: Issues of composition in contemporary European movement performance*. Dissertation. Harvard University, 1993.
- Glass, Renee. "Observer Response to Contemporary Dance." In *Thinking in Four Dimensions: Creativity and Cognition in Contemporary Dance*, edited by Robin Grove, Catherine Stevens, and Shirley McKechnie, 107-21. Melbourne: Melbourne University Press, 2005.
- Goffman, Erving. *Frame Analysis*. New York: Harper & Rowe, 1974.
- . *Interaction Ritual: Essays in Face-to-Face Behavior*. Chicago: Aldine Publishing, 1967.
- Goguin, Joseph, and Erik Myin. "Art and the Brain III." *Journal of Consciousness Studies* 11, nos. 3-4 (2004).
- Goguin, Joseph. "Art and the Brain." *Journal of Consciousness Studies* 6, nos. 6-7 (1999).
- . "Art and the Brain II." *Journal of Consciousness Studies* 7, nos. 8-9 (2000).
- Goh, Joshua, and Denise Park. "Culture sculpts the perceptual brain." In *Cultural neuroscience: cultural influences on brain function (Progress in Brain Research 178)*, edited by Joan Chiao, 95-111. Amsterdam: Elsevier, 2009.
- Goldin-Meadow, Susan. *Hearing Gesture: How Our Hands Help Us Think*. Cambridge, MA: Harvard University Press, 2005.
- Goldstein, A. "Thrills in response to music and other stimuli." *Physiological Psychology* 8, no. 1 (1980): 126-9.

Gombrich, Ernst. *Meditations on a Hobby Horse and Other Essays on the Theory of Art*.

London: Phaidon, 1963.

Goodwin, Charles. "Gesture as a Resource for the Organization of Mutual Orientation."

Semiotica 62, no. 1-2 (1986): 29-49.

Gottschalk, L., J. Haer, and D. Bates. "Changes in social alienation, personal

disorganization, and cognitive-intellectual impairment produced by sensory

overload." *Archives of General Psychiatry* 27 (1972): 451-7.

———. "Effect of sensory overload on psychological state." *Mental Health Digest* 5

(1973): 29-31.

Greeno, James. "Gibson's affordances." *Psychological Review* 101, no. 2 (1994): 336-42.

Grof, Stanislav. *The Adventure of Self Discovery*. Albany: State University of New York

Press, 1988.

Groot, C., F. Ortega, and F.S. Beltran. "Thumb rule of visual angle: a new confirmation."

Perceptual and motor skills 78, no. 1 (1994): 232-4.

Grove, Robin, Catherine Stevens, and Shirley McKechnie. *Thinking in Four Dimensions:*

Creativity and Cognition in Contemporary Dance. Melbourne: Melbourne

University Press, 2005.

Guatterini, Marinella, ed. *Forsythe: ieri, oggi, domani*. Reggio Emilia: Fondazione i

Teatri di Reggio Emilia, 2005.

Guatterini, Marinella. "Forsythe postmoderno, il rizoma coreografico." In Guatterini

2005, 59-77.

- Hackney, Peggy. *Making Connections: Total Body Integration Through Bartenieff Fundamentals*. New York: Gordon & Breach, 1998.
- Hadar, U., T.J. Steiner, E.C. Grant, and F.C. Rose. "The timing of shifts in head posture during conversation." *Human Movement Science* 3 (1984): 237-45.
- Haer, J. "Alterations in consciousness induced by sensory overload." *Journal for the Study of Consciousness* 3 (1970): 161-9.
- . "Field dependency in relation to altered states of consciousness produced by sensory overload." *Perceptual and Motor Skills* 33, no. 1 (1971): 192-4.
- Haffner, Nik. "Der Tänzer als Medium." *ballett international/tanz aktuell* (August-September 1997): 11-12.
- . "Forsythe und die Medien." *tanzdrama* 511, no. 2 (2000): 30-35. English version: "Forsythe and the media." Accessed May 31, 2003. www.frankfurt-ballett.de/nikmedia-english.html
- . "Zeit erkennen." In *William Forsythe: Denken in Bewegung*, edited by Gerald Siegmund, 133-144. Berlin: Henschel Verlag, 2004.
- Hagendoorn, Ivar (2003a). "Cognitive dance improvisation. How study of the motor system can inspire dance (and vice versa)." *Leonardo* 36, no. 3 (2003): 221-7.
- (2003b). "The dancing brain." *Cerebrum* 5, no. 2 (2003): 19-34.
- (2004a). "Some speculative hypotheses about the nature and perception of dance and choreography." *Journal of Consciousness Studies* 11, no. 3/4 (2004): 79-110.
- (2004b). "Towards a neurocritique of dance." *BalletTanz Yearbook*, 2004, 62-7.

- (2005a). “Dance Perception and the Brain.” In *Thinking in Four Dimensions: Creativity and Cognition in Contemporary Dance*, edited by Robin Grove, Catherine Stevens, and Shirley McKechnie, 137-48. Melbourne: Melbourne University Press, 2005.
- (2005b). “Einige methodologische Bemerkungen zu einer künftigen Neurokritik des Tanzes.” in *Tanz im Kopf/Dance and Cognition (Jahrbuch Tanzforschung 15)*, edited by Johannes Birringer and Josefine Fenger, 233-240. Münster, LIT Verlag, 2005.
- . “Dance, Choreography and the Brain.” In *Art and the Senses*, edited by Francesca Bacci and David Melcher, 513-28. Oxford: Oxford University Press, 2011.
- Hansen, Pil. “Perceptual Dramaturgy: *Swimmer (68)*.” *Journal of Dramatic Theater and Criticism* 26, no. 1 (Spring 2011): 1-18.
- Hartewig, Wibke. *Kinästhetische Konfrontationen: Lesearten der Bewegungstexte William Forsythes*. Munich: epodium Verlag, 2007.
- Hartmann, Annette. “Mit dem Körper memorieren: Betrachtung des Körpergedächtnisses im Tanz aus neurowissenschaftlicher Perspektive.” In *Tanz im Kopf/Dance and Cognition (Jahrbuch Tanzforschung 15)*, edited by Johannes Birringer and Josefine Fenger, 185-99. Münster, LIT Verlag, 2005.
- Heiser, M., M. Iacoboni, F. Maeda, J. Marcus, and J.C. Mazziotta. “The essential role of Broca’s area in imitation.” *European Journal of Neuroscience* 17 (2003): 1123–8.

- Henderson, Greig, and Christopher Brown. "Glossary of Literary Theory." University of Toronto. Accessed September 24, 2011. <http://www.library.utoronto.ca/utel/glossary/Metacriticism.html>
- Hodgins, Paul. *Relationships Between Score and Choreography and Twentieth-Century Dance: Music, Movement, and Metaphor*. Lewiston, NY: Edwin Mellen Press, 1992.
- Hollis, Hilda. "Another Bird? Counterpoint in 'The Windhover.'" *Victorian Poetry* 40, no. 4 (2002): 433-43.
- Holmes, Anne. "Counterpoint in Mallarmé's 'L'Après-Midi d'un Faune.'" *French Studies* 57, no. 1 (2003): 27-37.
- Howes, David, ed. *Empire of the Senses: The Sensual Culture Reader*. New York & Oxford: Berg, 2004.
- Humphrey, Doris. *The Art of Making Dances*. Princeton: Princeton Book Company, 1959.
- Huschka, Sabine. "Der Tanz als Inschrift: Die Bewegungsästhetik von William Forsythe." *tanzdrama* 61 (2001): 26-30.
- . "Hinter den Spiegel sich wendend. Die vergängliche Ballettkunst von William Forsythe." In *Diskurse des Theatralen (Theatralität 7)*, edited by Erika Fischer-Lichte, Matthias Warstat, and Christian Horn, 65-88. Basel: Francke Verlag, 2005.

- . “Media-bodies. Choreographierte Körper als Wissensmedium bei William Forsythe.” In *Theater und Medien / Theatre and the Media*, edited by Henri Schoenmakers, Stefan Bläske, Kay Kirchmann, and Jens Ruchatz, 309-18. Bielefeld: transcript Verlag, 2008. English version: “Media-Bodies: Choreography as Intermedial Thinking Through in the Work of William Forsythe.” *Dance Research Journal*, 42, no. 1 (2010): 61-72.
- . “Verlöschen als ästhetischer Fluchtpunkt oder ‘Du musst dich selbst wahrnehmend machen.’” In *William Forsythe: Denken in Bewegung*, edited by Gerald Siegmund, 95-106. Berlin: Henschel Verlag, 2004.
- Husemann, Pirkko. *Choreografie als kritische Praxis*. Bielefeld: transcript Verlag, 2009.
- Hutchins, Edwin. *Cognition in the Wild*. Cambridge, MA: The MIT Press, 1995.
- Ihde, Don. *Expanding Hermeneutics: Visualism in Science*. Evanston: Northwestern University Press, 1999.
- . *Listening and Voice: A Phenomenology of Sound*. Athens: Ohio University Press, 1976. Reprinted by SUNY Press, 2007.
- Ingold, Tim. *The Perception of the Environment: Essays in Livelihood, Dwelling, and Skill*. London: Routledge, 2000.
- Jackson, Jennifer. “Dancing Latin: William Forsythe’s Challenge to Balletic Text.” In *Dancing Text: Intertextuality and Interpretation*, 104-29. London: Dance Books, 1999.

Jacques-Dalcroze, Émile. "Music and the Dancer." In *Rhythm, Music, and Education*.

Translated by H.F. Rubenstein, 286-305. London: The Dalcroze Society,
1921/1967.

James, William. *The Principles of Psychology* (1890). New York: Dover Publications,
1950.

Jans, Bert, Judith Peters, and Peter De Weerd. "Visual spatial attention to multiple
locations at once: The jury is still out." *Psychological Review* 117, no. 2 (2010):
637-82.

Jay, Martin. "Scopic Regimes of Modernity." In *Vision and Visuality*, edited by Hal
Foster, 3-27. Seattle: Bay Press, 1988.

———. *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought*.
Berkeley: University of California Press, 1993.

Jilek, Wolfgang. "Therapeutic use of altered states of consciousness in contemporary
North American Indian dance ceremonies." In *Altered States of Consciousness
and Mental Health: A Cross-cultural Perspective*, edited by C. Ward, 167-185.
Newbury Park, CA: Sage, 1989.

Johnson-Frey, S.H., F.R. Maloof, R. Newman-Norlund, C. Farrer, S. Inati, and S.T.

Grafton. "Actions or hand-object interactions? Human inferior frontal cortex and
action observation." *Neuron* 39, no. 6 (2003): 1053-58.

Jola, Corinne, and Fred Mast. "Dance images. Mental imagery processes in dance. In
Tanz im Kopf/Dance and Cognition (Jahrbuch *Tanzforschung* 15), edited by
Johannes Birringer and Josefine Fenger, 211-32. Münster: LIT Verlag, 2005.

- Jordan, Stephanie. "Agon: A Musical/Choreographical Analysis." *Dance Research Journal* 25, no. 2 (1993): 1-12.
- . "Musical Discourse: Method, Music, Theory and Meaning." in *Moving Words: Re-Writing Dance*, edited by Gay Morris, 15-28. London: Routledge, 1996.
- . *Moving music: dialogues with music in twentieth-century ballet*. London: Dance Books, 2000.
- . *Music Dances: Balanchine Choreographs Stravinsky*. Videotape lecture-demonstration. New York: The George Balanchine Foundation, 2002.
- . *Stravinsky Dances: Re-Visions Across a Century*, Hampshire: Dance Books, 2007.
- Juslin, Patrik, & John Sloboda, eds. *Music and Emotion: Theory and Research*. Oxford: Oxford University Press, 2001.
- Juslin, Patrik, & Petri Laukka. "Expression, perception, and induction of musical emotions: A review and a questionnaire study of everyday listening." *Journal of New Music Research* 33 (2004): 217–38.
- Kaiser, Paul. "Dance Geometry: William Forsythe in dialogue with Paul Kaiser." *Performance Research* 4, no. 2 (1999): 64-71.
- Kellman, P.J. & E.S. Spelke. "Perception of partially occluded objects in infancy." *Cognitive Psychology* 15 (1983): 483-524.
- Kellner, Douglas. *Media Culture*. London and New York: Routledge, 1995.
- Kendon, Adam. "Gesture." *Annual Review of Anthropology* 26 (1997): 109-28.
- . "Language and gesture: unity or duality?" In *Language and Gesture*, edited by David McNeill, 47-63. Cambridge: University of Cambridge Press, 2000.

- Kershaw, Baz. "Spectacles of performance: excesses of power." in *Theatre Ecology: environments and Performance*, 206-38. New York & Cambridge: Cambridge University Press, 2007.
- Kim, Jaegwon. "What is Naturalized Epistemology?" *Philosophical Perspectives* 2 (1988): 381-405.
- King, Geoff. *Spectacular narratives. Hollywood in the age of the blockbuster*. London and New York: I.B. Taurus, 2000.
- Kirsh, David. "How marking in dance constitutes thinking with the body." *Proceedings of the 2nd International Conference on Computational Creativity*, 2011.
- Kita, Sotaro. *Pointing: Where Language, Culture, and Cognition Meet*. Mahwah: Lawrence Erlbaum Associates, 2003.
- Klosty, James. *Merce Cunningham*. New York: Saturday Review Press (1975): 24.
- Knight, Deborah. Review of David Bordwell and Noël Carroll, eds., *Post-Theory: Reconstructing Film Studies*. *Journal of Aesthetic Education* 32, no. 2 (Summer 1998): 109-12.
- Koelsch, Stefan, Thomas Fritz, D. Yves von Cramon, Karsten Müller, and Angela Friederici. "Investigating emotion with music: An fMRI study." *Human Brain Mapping* 27 (2006): 239–50.
- Koertge, Norette, ed. *A House Built on Sand: Exposing Postmodernist Myths About Science*. Oxford: Oxford University Press, 2000.

- Konečni, V., R. Wanic, and A. Brown. "Emotion and aesthetic antecedents and consequences of music-induced thrills." *American Journal of Psychology* 120, no. 4 (2007): 619-43.
- Kornblith, H., ed. *Naturalizing Epistemology*. Cambridge, MIT Press, 1985.
- LaBerge, David. "Attentional Processing in Musical Listening: A Cognitive Neuroscience Approach." *Psychomusicology* 14 (1995): 20-34.
- Lakoff, George, and Mark Johnson. *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books, 1999.
- Lametti, D. R., and Mattar, A.A.G. "Mirror neurons and the lateralization of human language." *Journal of Neuroscience* 26 (2006): 6666-7.
- Lampert, Frederike. "Tanzimprovisation auf der Bühne: Entdeckung von Nicht-Choreografierbarem." In *Tanz, Theorie Text* (Jahrbuch *Tanzforschung* 12), edited by Gabriele Klein and Christa Zipprich, 445-56. Münster: LIT Verlag, 2002.
- . *Tanzimprovisation: Geschichte, Theorie, Verfahren, Vermittlung*. Bielefeld: transcript Verlag, 2007.
- Lang, Peter, Robert Simons, and Marie Balaban, eds. *Attention and Orienting: Sensory and Motivational Processes*. Mahwah: Psychology Press, 1997.
- Lang, Prue. "Denken, Bewegung, und Sprache." In *William Forsythe and the Practice of Choreography: It Starts From Any Point*, edited by Steven Spier, 125-32. London and New York: Routledge, 2011.

- Latto, Richard. "The Brain of the Beholder." In *The Artful Eye*, edited by Richard Gregory, John Harris, Priscilla Heard, and David Rose, 66-94. Oxford: Oxford University Press, 1995.
- Lavik, Erlend. "The battle for the blockbuster: discourses of spectacle and excess." *New Review of Film and Television Studies* 6, no. 2 (August 2008): 169-87.
- Lee, D.N., and E. Aronsen. "Visual proprioceptive control of standing in human infants." *Perception and Psychophysics* 15 (1974): 529-32.
- Lehrer, Jonah. *Proust Was a Neuroscientist*. Boston: Houghton Mifflin, 2007.
- Lepecki, André. "Inscribing Dance." In *Of the Presence of the Body: Essays on Dance and Performance Theory*, 124-39. New York & London: Routledge, 2004.
- . "Introduction." in *Of the Presence of the Body: Essays on Dance and Performance Theory*, 1-9. New York & London, Routledge, 2004.
- Leslie, A.M. "The perception of causality in infants." *Perception* 11, no. 2 (1982): 173-86.
- Levin, David. *Modernity and the hegemony of vision*. London: Routledge, 1993.
- Levitin, Daniel, and Anna Tirovalas. "Current Advances in the Cognitive Neuroscience of Music." In *The Year in Cognitive Neuroscience 2009*, edited by Michael Miller and Alan Kingstone, 211-31. Oxford: Wiley-Blackwell, 2009.
- Liberman, Alvin, and Ignatius Mattingly. "The motor theory of speech perception revised." *Cognition* 21, no. 1 (1985): 1-36.
- Liberman, Alvin. "On finding that speech is special." *American Psychologist* 37, no. 1 (1982): 148-67.

- Licoppe, Christian. "The 'Performative Turn' in Science and Technology Studies." *Journal of Cultural Economy* 3, no. 2 (2010): 181-8.
- Lipowski, Z. "Sensory information and overload: behavioral effects." *Comprehensive Psychiatry* 16 (1975): 199-221.
- Ludwig, Arnold. "'Psychedelic' effects produced by sensory overload." *American Journal of Psychiatry* 128 (1972): 1294-7.
- . "Altered States of Consciousness." *Archives of General Psychiatry* 15, no. 3 (1966): 225-34.
- Lundqvist, L.-O., F. Carlsson, P. Hilmersson, & P. Juslin. "Emotional responses to music: Experience, expression, and physiology." *Psychology of Music* 37, no. 1 (2009): 61-90.
- Lyotard, Jean-Francois. *The Postmodern Condition: A Report on Knowledge*. Minneapolis: University of Minnesota Press, 1984.
- Maas, Georg. "Filmmusik." In *Musikpsychologie. Ein Handbuch*, edited by Herbert Bruhn, 203-8. Reinbek: Rowohlt, 1993.
- Mach, Ernst. "Untersuchungen über den Zeitsinn des Ohres." *Sitzungsberichte der mathematisch-naturwissenschaftlichen Classe der Kaiserlichen Akademie der Wissenschaften* 51 (1865): 133-55.
- Mack, A. and I. Rock. *Inattentional Blindness*. Cambridge, MA: MIT Press, 1998.
- Mackenzie, Donald. "Is economics performative? Option theory and the construction of derivatives markets." *Journal of the History of Economic Thought* 28, no. 1 (2006): 29-55.

- . “The big, bad wolf and the rational market: portfolio insurance, the 1987 crash and the performativity of economics.” *Economy and Society* 33 (2004): 303-34.
- Maltzman, Irving. “Orienting reflexes and significance: a reply to O’Gorman.” *Psychophysiology* 16, no. 3 (1979): 274-82.
- Mancing, Howard. “See the play, read the book.” In *Performance and Cognition: Theatre studies and the cognitive turn*, edited by Bruce McConachie and Evelyn Hart, 189-94. London & New York: Routledge, 2006.
- Manning, Susan. “The female dancer and the male gaze: Feminist Critiques of early Modern Dance.” In *Meaning in Motion*, edited by Jane Desmond, 153-66. Durham, NC: Duke University Press, 1997.
- MARCS Auditory Laboratories. “Researching Dance and Cognitive Science, 1999-2009.” Accessed 26 April 2011. <http://marcs.uws.edu.au/?q=research/researching-dance-and-cognitive-science>
- Marcuse, Herbert. *Eros and Civilization*. Boston: Beacon Press, 1966.
- Marks, Lawrence. “Bright Sneezes and Dark Coughs, Loud Sunlight and Soft Moonlight.” *Journal of Experimental Psychology: Human Perception and Performance*, 8 (1982): 177-93.
- Marr, Kirsten. “Forsythes Konzepte des imaginären Raums.” in *Tanz im Kopf: Dance and cognition*, edited by Johannes Birringer and Josephine Fenger, 99-112. Münster: LIT Verlag, 2005.
- Maslow, A.H. “Lessons from peak experiences.” *Journal of Humanistic Psychology* 2, no. 2 (1962): 9-18.

- Massumi, Brian. *Parables for the Virtual: Movement, Affect, Sensation*. Durham: Duke University Press, 2002.
- Mattingly, Kate. "Deconstructivists Frank Gehry and William Forsythe: De-Signs of the Times." *Dance Research Journal* 31, no. 1 (1999): 20-28.
- Maturana, Humberto, and Francisco Varela. *Autopoiesis and Cognition: the Realization of the Living* (1973). Dordrecht: D. Reidel Publishing Co., 1980.
- . *The tree of knowledge: The biological roots of human understanding*. Boston: Shambala Publications, 1987.
- McCarthy, Rosaleen, Alan Blackwell, Scott deLahunta, Alan Wing, Kristen Hollands, Philip Barnard, Ian Nimmo-Smith, and Anthony Marcel. "Bodies Meet Minds: Choreography and Cognition." *Leonardo* 39, no. 9 (October 2006): 475-8.
- McClave, Evelyn Z. "Linguistic functions of head movement in the context of speech." *Journal of Pragmatics* 32 (2000): 855-78.
- McConachie, Bruce, and Evelyn Hart, eds. *Performance and Cognition: Theatre studies and the cognitive turn*. London & New York: Routledge, 2006.
- . "Cognitive studies and epistemic competence in cultural history: moving beyond Freud and Lacan." In *Performance and Cognition: Theatre studies and the cognitive turn*, edited by Bruce McConachie and Evelyn Hart, 52-75. London & New York: Routledge, 2006.
- McGurk, Harry, and John MacDonald. "Hearing Lips and Seeing Voices." *Nature* 264 (1976): 746-8.

- McLuhan, Marshall, and Quentin Fiore. *The Medium is the Message: An Inventory of Effects*. New York: Bantam Books, 1967.
- . “The Playboy Interview: Marshall McLuhan.” Accessed April 20, 2011.
<http://www.nextnature.net/2009/12/the-playboy-interview-marshall-mcluhan/>
- . *Understanding Media: The Extensions of Man*. New York: Signet, 1964.
- McManus, Thomas. “Enemy from Within.” In *William Forsythe: Denken in Bewegung*, edited by Gerald Siegmund, 81-8. Berlin: Henschel Verlag, 2004.
- McNeill, David. *Gesture and Thought*. Chicago: University of Chicago Press, 2005.
- Meltzoff, A. “Understanding the intentions of others: Reenactment of intended acts by 18-month-old children.” *Developmental Psychology* 31, no. 5 (1995): 838-50.
- Menon, Vinod, & Daniel Levitin. “The rewards of music listening: Response and physiological connectivity of the mesolimbic system.” *NeuroImage* 28, no. 1 (2005): 175-84.
- Metachoreology* project. Laban Centre. Accessed November 6, 2005.
<http://www.metachoreology.com/read/Index>
- Meyer, Petra Maria, ed. *Acoustic Turn*. Munich: Wilhelm Fink Verlag, 2008.
- Michel Chion. *Guide des objets sonores: Pierre Schaeffer et la recherche musicale*. Paris: Buchet/Chastel, 1994.
- Midgette, Anne. “Sound Ideas: The Music of Ballett Frankfurt.” In *William Forsythe. Choreography and Dance* 5, no. 3, edited by Senta Driver, 79-85. Chur: Harwood Academic Publishers, 2000.
- Miller, J. Hillis. “The Critic as Host.” *Critical Inquiry* 3, no. 3 (Spring 1977): 439-47.

- Mishima, Yukio. *Runaway Horses*. New York: Alfred A Knopf, 1969.
- Mitchell, W.J.T. *Picture Theory: Essays on Verbal and Visual Representation*. Chicago: University of Chicago Press, 1995.
- Morrison, Steven, and Steven Demorest. "Cultural constraints on music perception and cognition." In *Cultural neuroscience: cultural influences on brain function (Progress in Brain Research 178)*, edited by Joan Chiao, 67-77. Amsterdam: Elsevier, 2009.
- Motion Bank* project. The Forsythe Company. Accessed August 25, 2011.
<http://motionbank.org/en/research-2/>
- Mulvey, Laura. "Afterthoughts on 'Visual Pleasure and Narrative Cinema,' inspired by King Vidor's *Duel in the Sun* (1981)." In *Visual And Other Pleasures*, 29-37. London: Macmillan, 1989.
- . "Visual Pleasure and Narrative Cinema." *Screen* 16, no. 13 (Autumn 1975): 6-18.
- Näätänen, R. *Attention and Brain Function*. Hillsdale: Lawrence Erlbaum, 1992.
- Neisser, Ulric. "The control of information pickup in selective looking." In *Perception and its development: A tribute to Eleanor J. Gibson*, edited by A.D. Pick, 201-219. Hillsdale: Lawrence Erlbaum, 1979.
- Nietzsche, Friedrich, and Bernard Williams, ed. *The Gay Science* (1882). Translated by Josefine Nauckhoff. Cambridge: Cambridge University Press, 2001.
- Nolin, Jan. "What's in a turn?" *Information Research* 12, no. 4 (2007). Accessed Feb. 20 2011. <http://informationo.net/ir/12-4/colis/colis.html>

- Nugent, Ann. "William Forsythe and the Lost Stuttgart Ballets." *Dance Chronicle* 29 (2006): 17-48.
- . "William Forsythe and the Model Viewer." Paper presented at "Dance and Spectacle." 31st Annual Conference of the Society of Dance History Scholars, University of Surrey, July 9-11, 2010.
- . "William Forsythe, *Eidos:Telos*, and Intertextual Criticism." *Dance Research Journal* 39, no. 1 (2007): 25-48.
- . *The Architexts of Eidos:Telos: A critical study through intertextuality of the dance text conceived by William Forsythe*. Dissertation. University of Surrey, 2000.
- Nykliček, I., J.F. Thayer, & L.J Van Doornen. "Cardiorespiratory differentiation of musically-induced emotions." *Journal of Psychophysiology* 11 (1997): 304-21.
- O'Callaghan, Casey. *Sounds*. Oxford: Oxford University Press, 2007.
- O'Shea, R.P. "Thumb's rule tested: visual angle of thumb's width is about 2 deg." *Perception* 20, no. 3 (1991): 415-8.
- Öhman, A. *The Orienting Response, Attention and Learning: An information-processing perspective*. Mahwah: Lawrence Erlbaum Associates, 1979.
- Ong, Walter J. "'I See What You Say:' Sense Analogues for Intellect." In *Interfaces of the word: Studies in the evolution of consciousness and culture*, 121-44. Ithaca and London: Cornell University Press, 1977.
- . "System, space, and intellect in Renaissance symbolism." in *The Barbarian Within and other fugitive essays*, 68-87. New York: The Macmillan Company, 1962.

- . *The Presence of the Word: Some Prolegomena for Cultural and Religious History*. 2nd ed. Binghamton: Global Publications, 2000.
- Orgs, Guido, J. Dombrowski, M. Heil, and P. Jansen-Osmann. “Expertise in dance modulates alpha/beta event-related desynchronization during action observation.” *The European Journal of Neuroscience* 27, no. 12 (2008): 3380-4.
- Pallasmaa, Juhani. *The Eyes of the Skin: Architecture of the Senses*. Chichester: Wiley-Academy, 2005.
- Pasler, Jann. “Music and Spectacle in *Petrushka* and *The Rite of Spring*, in *Confronting Stravinsky: man, musician, and modernist*, 53-81. Berkeley: University of California Press, 1988.
- Patel, A.D., J.R. Iversen, M.R. Bregman, I. Schulz, and C. Schulz. “Investigating the human-specificity of synchronization to music.” In *Proceedings of the 10th International Conference on Music Perception and Cognition*, August 2008, Sapporo, Japan.
- Pavlov, I. *Conditioned Reflexes: An Investigation of the Physiological Activity of the Cerebral Cortex*. Translated by G.V. Anrep. London: Oxford University Press, 1927.
- Phillips, William. “Cross-Cultural Differences in Visual Perception of Color, Illusions, Depth, and Pictures.” In *Cross-Cultural Psychology: Themes and Perspectives*, edited by Kenneth Keith, 160-80. Hoboken: Wiley Blackwell, 2010.
- Piaget, Jean. *The Origins of Intelligence in Children*. New York: International Universities Press, 1952.

- Pike, Alfred. "A phenomenological analysis of emotional experience in music," *Journal of Research in Music Education* 20 (1972): 262–6.
- Pilates, Joseph. *Pilates' Return to Life through Contrology*. Incline Village: Presentation Dynamics, 1945.
- Plantinga, Carl. "Cognitive Film Theory: An Insider's Appraisal." *Journal of Film Studies* 12, no. 2 (2002): 15-37.
- . "Cognitive Theory in Film Studies: Three Recent Books." *College Literature* 33, no. 1 (Winter 2006): 215-24.
- Plato. *Republic* (380 B.C.) Translated by Robin Waterfield. Oxford: Oxford University Press, 1993.
- . *Timaeus* (360 B.C.) Translated by Benjamin Jowett. Englewood Cliffs, NJ: Pearson, 1959.
- Platt, Ryan. "Forsythe's Box: On the Afterlife of Choreography." *Performing Arts Journal* 31, no. 1 (Jan 2009): 1-15.
- Port, Robert, and Tim van Geldner, eds. *Mind as motion: explorations in the dynamics of cognition*. Cambridge, MA: The MIT Press, 1995.
- Poyatos, Fernando. *Nonverbal Communication Across Disciplines 2: Paralanguage, Kinesics, Silence, Personal and Environmental Interaction*. Amsterdam: John Benjamins Publishing Company, 2002.
- Prévost, Edwin. *No Sound is Innocent*. Harlow, Essex: Copula, 1995.

Quek, F., D. McNeill, R. Ansari, X. Ma, R. Bryll, S. Duncan, and K.E. McCullough.

“Gesture cues for conversational interaction in monocular video.” *ICCV99*

Workshop on Recognition, Analysis, and Tracking of Faces and Gestures in Real-Time Systems (1999): 64-9.

Quine, W.V. “Epistemology naturalized.” In *Ontological Relativity and Other Essays*, 69-90. New York: Columbia University Press, 1969.

Rainer, Yvonne. “‘No’ to spectacle.” *Tulane Drama Review* 10, no. 2 (1965): 178.

Ramachandran, V.S. “The Science of Art: A Neurological Theory of Aesthetic experience.” In *Journal of Consciousness Studies* 6, nos. 6-7 (1999): 15-35.

———. *A Brief Tour of Human Consciousness*. New York: Pi Press, 2004.

Ranciere, Jacques. *Le spectateur émancipé*. Paris: La Fabrique, 2008.

Reason, Matthew, and Dee Reynolds. “Kinesthesia, Empathy, and Related Pleasures: An Inquiry into Audience Experiences of Watching Dance.” *Dance Research Journal* 42, no. 2 (Winter 2010): 49-75.

Renner, Karen. “Repeat Viewings Revisited: Emotions, Memory, and *Memento*.” *Film Studies* 8 (2006), 106-15.

Ricciardelli, P., E. Bricolo, S.M. Aglioti, and L. Chelazzi. “My eyes want to look where your eyes are looking: exploring the tendency to imitate another individual’s gaze.” *Neuroreport* 13, no. 17 (December 2002): 2259-64.

Richardson, Alan and Francis F. Steen. “Reframing the Adjustment: A Response to Adler and Gross.” *Poetics Today* 24, no. 2 (2003): 151-9.

- Ricoeur, Paul. *The Conflict of Interpretations: Essays in Hermeneutics*. Evanston: Northwestern University Press, 1974.
- Rizzi, Anthony. "Die Bühne als der Ort, an dem ich mit mir im Reinen bin." In *William Forsythe: Denken in Bewegung*, edited by Gerald Siegmund, 89-94. Berlin: Henschel Verlag, 2004.
- Rizzolatti, G., L. Fadiga, V. Gallese, & L. Fogassi. "Premotor cortex and the recognition of motor actions." *Brain Research: Cognitive Brain Research* 3, no. 2 (1996): 131-41.
- Roche, S.M., and K.M. McConkey. "Absorption: Nature, assessment, and correlates." In *Music and Mind*. London: Harper Collins, 1990.
- Ropa, Eugenia Casini. "Di Laban oggi. Riflessioni sulle teorie labaniane in Forsythe." In *Forsythe: ieri, oggi, domani*, edited by Marinella Guatterini, 108-16. Reggio Emilia: Fondazione i Teatri di Reggio Emilia, 2005.
- Rorty, Richard, ed. *The Linguistic Turn: Recent Essays in Philosophical Method*. Chicago and London: The University of Chicago Press, 1967.
- Rosenblum, Lawrence. *See What I'm Saying: The Extraordinary Powers of Our Five Senses*. New York: W.W. Norton & Company, 2010.
- Russell, Bertrand. "On Scientific Method in Philosophy." *Mysticism and Logic and Other Essays*. New York: Longmans, Green and Co., 1918.
- Salter, Chris. *Entangled: Technology and the Transformation of Performance*. Cambridge MA: MIT Press, 2010.

- . “Timbral architectures, aurality’s force: sound and music.” In *William Forsythe and the Practice of Choreography: It Starts From Any Point*, edited by Steven Spier, 54-72. London and New York: Routledge, 2011.
- . *Unstable Events: Theater at the Verge of Complexity*. Dissertation. Stanford University, 1997.
- San Miguel, I., D. Linden, and C. Escera. “Attention capture by novel sounds: Distraction versus facilitation.” *European Journal of Cognitive Psychology* 22, no. 4 (2010): 481-515.
- Schaeffer, Pierre. *Traité des objets musicaux*. Paris: Seuil, 1966.
- Schafer, R. Murray. *The Tuning of the World*. New York: Alfred Knopf, 1977.
- Schmidt, C.L. “Adult understanding of spontaneous attention-directing events: What does gesture contribute?” *Ecological Psychology* 11 (1999): 139-74.
- Schulze, Janine. *Dancing Bodies Dancing Gender: Tanz im 20. Jahrhundert aus der Perspektive der Gender-Theorie*. Berlin: Edition Ebersbach, 1999.
- Scott, Ariel Osterweis. *Body Impossible: Dynamics of Race, Sexuality, and Virtuosity in the Dance of Desmond Richardson*. Dissertation. University of California, Berkeley, forthcoming.
- Searle, John R. *Speech acts: An essay in the philosophy of language*. Cambridge: Cambridge University Press, 1969.
- Sense and Sensations: On the Performativity of Perception*, annual conference of Sonderforschungsbereich “Cultures of Performativity.” Humboldt Universität zu Berlin, November 11-13, 2004. Accessed July 25, 2005. [http://www.literatur.hu-](http://www.literatur.hu-berlin.de/~sonderforschungsbereich/)

berlin.de/s&s/

- Serres, Michel. *The Five Senses: A Philosophy of Mingled Bodies*. Translated by Margaret Sankey and Peter Crowley. London & New York: Continuum, 2008.
- Original: *Les Cinq Sens*. Paris: Editions Grasset et Fasquelle, 1985.
- Servos, Norbert. "Laban meets ballet: Formprinzipien bei William Forsythe." *tanzdrama* 40 (1998): 4-9.
- Siegmund, Gerald, ed. *William Forsythe: Denken in Bewegung*. Berlin: Henschel Verlag, 2004.
- . "Der Forsythe-Komplex." In *tanz.de. Zeitgenössischer Tanz in Deutschland – Strukturen im Wandel – Eine neue Wissenschaft*, edited by Johannes Odenthal, 54-61. Berlin: Verlag Theater der Zeit, 2005.
- (2002a). "Echos und Schatten: William Forsythes Ballette." *tanzdrama* 62, no. 1 (2002): 13-17.
- (2002b). "Gedächtnisraum: Die Ballette William Forsythes." In *Tanz Theorie Text*, edited by Gabriele Klein and Christa Zipprich, *Jahrbuch Tanzforschung* 12, 397-411. Hamburg: LIT Verlag, 2002.
- . "Of Monsters and Puppets: After the 'Robert Scott Complex.'" In *William Forsythe and the Practice of Choreography: It Starts From Any Point*, edited by Steven Spier, 20-37. London: Routledge, 2011.
- . "Räume eröffnen, in denen das Denken sich ereignen kann." In *William Forsythe: Denken in Bewegung*, 9-72. Berlin: Henschel Verlag, 2004.

- . *Abwesenheit: Eine performative Ästhetik des Tanzes. William Forsythe, Jérôme Bel, Xavier Le Roy, Meg Stuart*. Bielefeld: transcript Verlag, 2006.
- . “Recht als Dis-Tanz. Choreographie und Gesetz in William Forsythes ‘Human Writes.’” *Forum Modernes Theater* 22, no. 1, 75-93. Gunter Narr Verlag, 2007.
- Sievers, Eduard. *Ziele und Wege der Schallanalyse*. Heidelberg: Carl Winters Universitätsbuchhandlung, 1924.
- Slater, A., and V. Morison. “Shape constancy and slant perception at birth.” *Perception* 14, no. 3 (1985): 337-344.
- Slater, A., A. Mattock, and E. Brown. “Size constancy at birth: Newborn infants' responses to retinal and real size.” *Journal of Experimental Child Psychology* 49, no. 2 (1990): 314-22.
- Sloboda, J.A. “Musical structure and emotional response: Some empirical findings.” *Psychology of Music* 19 (1991): 110-20.
- Smith, Jeff. “Music.” In *The Routledge Companion to Philosophy and Film*, edited by Paisley Livingston and Carl Plantinga, 184-95. London & New York, Routledge, 2009.
- Smith, Marian. *Ballet and opera in the age of Giselle*. Princeton, NJ: Princeton University Press, 2000.
- Snell-Hornby, Mary. “Linguistic transcoding or cultural transfer. A critique of translation theory in Germany.” In *Translation, history and culture*, edited by S. Bassnett and A. Lefevere, 79-86. London: Pinter 1990.

- Sobchack, Vivian. *Screening Space: The America Science Fiction Film*. 2nd edition. New York: Unger, 1993.
- Soja, Edward. "Taking space seriously." In *The Spatial Turn: Interdisciplinary perspectives*, edited by Barney Warf and Santa Arias, 11-35. London and New York: Routledge, 2009.
- Sokal, Alan, and Jean Bricmont, *Fashionable Nonsense: Postmodern Intellectuals' Abuse of Science*. New York: Picador, 1998. Published in UK as *Intellectual Impostures*. London: Profile Books, 1998.
- Sokal, Alan. *Beyond the Hoax: Science, Philosophy, and Culture*. Oxford: Oxford University Press, 2008.
- Sokolov, E. "Higher Nervous Functions: The Orienting Reflex." *Annual Review of Psychology* 25 (1963): 545-80.
- Sorenson, Roy. *Seeing Dark Things: The Philosophy of Shadows*. Oxford & New York: Oxford University Press USA, 2008.
- Spelke, Elizabeth. "Infants' intermodal perception of events." *Cognitive Psychology* 8 (1976): 533-60.
- . "Perceiving bimodally specified events in infancy." *Developmental Psychology* 15 (1979): 626-36.
- Spier, Steven, ed. *William Forsythe and the Practice of Choreography: It Starts From Any Point*. London and New York: Routledge, 2011.
- Spier, Steven. "Dancing and drawing, choreography and architecture." *The Journal of Architecture* 10, no. 4 (2005): 349-64.

- . “Engendering and composing movement: William Forsythe and the Ballett Frankfurt.” *The Journal of Architecture* 3, no. 2 (1998): 135-46.
- Spolsky, Ellen. “Cognitive Literary Historicism: A Response to Adler and Gross.” *Poetics Today* 24, no. 2 (2003): 177-8.
- Stafford, Barbara Maria. “Nothing Fails Like Success.” *Deconstructive Criticism: Directions (Society for Critical Exchange Reports #8)* (1980): 7-16.
- . *Echo Objects: The Cognitive Work of Images*. Chicago: University of Chicago Press, 2007.
- Stevens, Catherine, E. Schubert, S. Wang, C. Kroos, and S. Halovic. “Moving with and without music: scaling and lapsing in time in the performance of contemporary dance.” *Music Perception* 26, no. 5 (2009): 451-64.
- Stevens, Catherine, Heather Winskel, Clare Howell, Lyne-Marine Vidal, Cyril Latimer, and Josephine Milne-Home. “Perceiving dance: schematic expectations guide experts’ scanning of a contemporary dance film.” *Journal of Dance Medicine & Science* 14, no. 1 (2010): 19-25.
- Stoller, Paul. *Sensuous Scholarship*. Philadelphia: University of Pennsylvania Press, 1997.
- Strickland, Edward. *Minimalism: Origins*. Bloomington: Indiana University Press, 2000.
- Sulcas, Roslyn. “Both a New World and the Old Made Explicit.” Booklet accompanying William Forsythe and ZKM, *Improvisation Technologies: A Tool for the Analytical Dance Eye*, 29-46. Ostfildern: Hatje Cantz Verlag, 1999. Revised and reprinted in 2011.

- (1995a). “Channels for the Desire to Dance.” *Dance Magazine* (Sept 1995): 52-9.
- (1995b). “Kinetic Isometries.” Interview with William Forsythe. *Dance International* (Summer 1995): 4-9.
- . “The Force of Forsythe.” Interview with William Forsythe and Wendy Perron. *Dance Magazine* 80 (April 2006): 34-40.
- . “Theorems and Counterpoints.” *Dance Now* 5, no. 2 (1996): 9-14.
- . “Using Forms Ingrained in Ballet to Help the Body Move Beyond It.” *The New York Times*, December 9, 2001.
- . “William Forsythe: The poetry of disappearance and the great tradition.” *Dance Theatre Journal* 9, no.1 (Summer 1991): 4-7 and 32-33.
- Sweigard, Lulu. *Human Movement Potential: Its Ideokinetic Facilitation*. New York: Harper & Row, 1974.
- Swettenham, Neal. “Categories and catcalls: cognitive dissonance in *The Playboy of the Western World*.” In *Performance and Cognition: Theatre studies and the cognitive turn*, edited by Bruce McConachie and Evelyn Hart, 207-222. London & New York: Routledge, 2006.
- Synnott, Anthony. *The Body Social: Symbolism, Self, and Society*. London: Routledge, 1993.
- Tart, Charles, ed. *Altered states of consciousness: a book of readings*. New York: John Wiley, 1969.

- Tellegen, A., and G. Atkinson. "Openness to absorbing and self-altering experiences, ('Absorption'), a trait related to hypnotic activity." *Journal of Abnormal Psychology* 83, no. 3 (1974): 268-77.
- Tomasello, M. "Having intentions, understanding intentions, and understanding communicative intentions." In *Developing theories of intention: Social understanding and self control*, edited by P.D. Zelazo & J.W. Astington, 63–75. Mahwah, NJ: Lawrence Erlbaum Associates, 1999.
- Truslit, Alesander. *Gestaltung und Bewegung in der Musik*. Berlin-Lichterfelde: Chr. Friedrich Vieweg, 1938.
- Tuck, Greg. "When more is less: CGI, spectacle, and the capitalist sublime." *Science Fiction and Television* 2, no. 2 (Autumn 2008): 249-73.
- Varela, Francisco, Evan Thompson, and Eleanor Rosch. *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge, MA: The MIT Press, 1992.
- Vass-Rhee, Freya. "Dancing music: the intermodality of The Forsythe Company." In *William Forsythe and the Practice of Choreography: It Starts From Any Point*, edited by Steven Spier, 73-89. London and New York: Routledge, 2011.
- . "Integrating Dance and Cognitive Science: Toward Emancipatory Research." In *Continuing Dance Culture Dialogues: Southwest Borders and Beyond*. Proceedings of the 38th International Conference of the Congress on Research in Dance, Tempe, AZ, November 2-5, 2006, 149-155. Congress on Research in Dance, 2007.

- . “Motion / Perception: William Forsythe’s Spectatorial Shifts.” In *Choreographies of Migration*. Proceedings of the 39th Conference of the Congress on Research in Dance, Barnard College, New York, November 8-11, 2007, 206-11. Congress on Research in Dance, 2008.
- . “Turning the Tables: William Forsythe’s Antipodes I/II.” In *Theater ohne Fluchtpunkt/Theatre without Vanishing Points: Das Erbe Adolphe Appias: Szenographie und Choreographie im zeitgenössischen Theater/The Legacy of Adolphe Appia: Scenography and Chorography in Contemporary Theatre*, edited by Gabriele Brandstetter and Birgit Wiens, 293-301. Berlin/Köln: Alexander Verlag, 2010.
- von Baer, Karl Ernst. “Welche Auffassung der lebenden Natur ist die richtige?.” In *Reden in St. Petersburg*, edited by H. Schmitzdor, 237-84. St. Petersburg: Verlag der kaiserlichen Hofbuchhandlung, 1864.
- von Jagow, Bettina. “Ironische Dekomposition und dekonstruktive Defiguration der Geschlechterrollen im klassischen Tanz – Hans van Manen und William Forsythe.” In *Körperproduktionen. Zur Artifizialität der Geschlechter*, edited by Alexandra Karentzos, Birgit Käufer, and Katharina Sykora, 68-78. Marburg: Jonas Verlag, 2002.
- von Rauner, Gaby, ed., *William Forsythe – Tanz und Sprache*. Frankfurt am Main: Brandes und Apsel, 1993.

- Walker, Deborah. "Re-Reading the Femme Fatale in Film Noir: an evolutionary perspective." *Journal of Moving Image Studies* 5 (2006). Accessed Feb 17, 2011. <http://www.avila.edu/journal/vol4/Fatale%20evolutionary%20reading%20DW%20final2.pdf>
- Wallsdorf, Hanna. "Minutage und Mickey Mousing. Über das Verhältnis von Ballett- und Filmmusik am Beispiel von Disney's Fantasia (1940)." *Kieler Beiträge zur Filmmusikforschung* 3, 2009. Accessed October 28, 2009. <http://www.filmmusik.uni-kiel.de/beitraege.htm>
- Ward, Lawrence. *Dynamical Cognitive Science*. Cambridge, MA: The MIT Press, 2001.
- Waterhouse, Elizabeth. "Dancing Amidst The Forsythe Company. Space, Enactment, and Living Repertory." In *Theater ohne Fluchtpunkt. Das Erbe Appias: Szenographie und Choreographie im zeitgenössischen Theater*, edited by Gabriele Brandstetter and Birgit Wiens, 153-181. Berlin, Alexander Verlag, 2010.
- Welsch, Wolfgang. "On the Way to an Auditive Culture?" *Undoing Aesthetics*, London, Sage Publications, 1997, 150-167. Revised version of original publication "Auf dem Weg zu einer Kultur des Hörens?" in *Der Klang der Dinge*, edited by Arnica-Verena Langemaier, 86-111. Munich: Silke Schreiber, 1993.
- Westerman, Jack, and James Walters. "Noise and Stress: A Comprehensive Approach." *Environmental Health Perspectives* 41 (1981): 291-309.
- White, Barbara. "'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 (2006): 65-89.

- Wilson, Margaret. "Six Views of Embodied Cognition." *Psychonomic Bulletin and Review* 9, no. 4 (2002): 625-36.
- Witmore, Christopher. "Vision, Media, Noise and the Percolation of Time: Symmetrical Approaches to the Mediation of the Material World." *Journal of Material Culture* 11, no. 3 (2006): 267-92.
- Witvliet, Charlotte, & Scott Vrana, "Play it again Sam: Repeated exposure to emotionally evocative music polarises liking and smiling responses, and influences other affective reports, facial EMG, and heart rate." *Cognition and Emotion* 21 (2007): 3-25.
- Wohlwill, Joachim. "Human Adaptation to Levels of Environmental Stimulation." *Human Ecology* 2 no. 2 (1974): 127-47.
- Zeki, Semir. 1999. *Inner Vision: An Exploration of Art and the Brain*. New York: Oxford University Press.
- Žižek, Slavoj. "The supposed subjects of ideology." *Critical Quarterly* 39, no. 2, (1997): 39-59.
- . *The Fright of Real Tears: Krzysztof Kiesłowski Between Theory and Post-Theory*. London: British Film Institute, 2001.
- . *The Parallax View*. Cambridge, MA: The MIT Press, 2005.
- Zukow-Goldring, Patricia. "A Social Ecological Realist Approach to the Emergence of the Lexicon: Educating Attention to Amodal Invariants in Gesture and Speech." In *Evolving Explanations of Development: Ecological Approaches to Organism-*

Environment Systems, edited by Cathy Dent-Read & Patricia Zukow-Goldring, 199-250. Washington D.C.: American Psychological Association, 1997.

Zumthor, Paul, preface to Corrado Bologna, *Flatus vocis: Metafisica e antropologia della voce*, vii-x. Bologna: Il Mulino, 2000.

Reviews and editorials referenced

Kisselgoff, Anna. "The Sound and the Flurry of William Forsythe" *The New York Times*, July 19, 1987.

"Das Subjekt will kein Objekt sein: Frankfurts Ballett distanziert sich von einem Buch über William Forsythe," *Frankfurter Rundschau*, Kultur, March 25, 1993.

Boxberger, Edith. "Forsythe distanziert sich von Publikation." *Rhein-Main Zeitung*, March 26, 1993.

Bai, Anjuli (Sheila Orysiek). Review of Ballett Frankfurt mixed bill, June 12, 2004, Orange County Performing Arts Center, Costa Mesa CA. Accessed September 12 2010. http://www.ballet.co.uk/magazines/yr_04/jul04/ab_rev_ballett_frankfurt_0604.htm

Gilbert, Jenny. Review of *Three Atmospheric Studies*, *The Independent*, 15 October 2006.

Craine, Debra. Review of *Decreation*, *The Times*, April 28, 2009.

Public talks by William Forsythe referenced

Three Atmospheric Studies post-performance talk with Steve Valk and Michael Klien,
Dublin, April 7, 2008.

Decreation post-performance talk, Haus der Berliner Festspiele, Berlin, January 21, 2009.

The Returns post-performance talk with the author, Dresden, July 1, 2009.

Interviews by the author referenced

Thoms McManus, August 24, 2006.

Jodie Gates, March 12, 2007.

Thom Willems, April 20, 2008.

Dietrich Krüger, July 2, 2008.

Appendix

Chronological list of works with soundscore catalogue

Note to this catalogue:

In this chronology and soundscore catalogue of William Forsythe's works, the category of *music* has been replaced by *soundscore* to reflect the variety of sounds included in Forsythe's performances. It will be noted that Forsythe's earlier works primarily feature primarily musical compositions, while later works reveal an increasingly diverse range of sonic elements. The following 13 categories of sound have been indicated and, where pertinent, special conditions have been noted:

Silences – intentional extended full absences of sound; see Chapter 5

Spoken text

Sung text

Non-textual singing

Audible text cues – individual cue words (e.g. "go")

Breath score – performer-generated coordinating score; see Chapter 7

Vocal choreography – translatory vocal gestures; see Chapter 8

Corporeal gestures – audible elements such as slaps, stamps, or shoe squeaks; distinct from breath score

Vocal gestures – backchannel cues (e.g. "hmm") and paralinguistic sounds such as coughing, snorting, or screaming; distinct from breath score and vocal choreography

Animal sounds – produced by performers with voices or devices

Onstage instruments – instruments, props, scenery, or costume elements played in a musical manner in full or partial view of the audience

Prop or scenery element sounds – non-compositional sounds, e.g. falling scenery elements. Here, an artificial distinction has admittedly been made between this and the prior category.

Recorded ambient soundtracks

Electronic transposition (digital signal processing) has been indicated where applicable for spoken text, sung text, non-textual singing, prop or scenery element sounds, and onstage instruments.

Two factors complicate this catalogue. Firstly, some of the categorized sonic elements also occur in the compositions produced by musicians or sound designers (e.g. sound samples of dogs barking in *Behind the China Dogs* and *Woolf Phrase*). As this study focuses on the overall visuo-sonority of Forsythe's works rather than analysis of the musicians' and sound designers' compositions, and as the sounds in those compositions are frequently altered to such an extent that they are difficult to identify with certainty, I have not attempted to catalogue the sounds included in these compositions, beyond a few exceptional instances. However, recordings of isolated ambient or environmental sounds have been included as a category. Secondly, as Forsythe frequently changes works over time, soundscore inclusions have also changed in some cases. This list reflects inasmuch as possible the "canonical" or most common versions of the works' soundscores.

In addition, this catalogue includes only selected performance installations and does not include Forsythe's film projects. For a comprehensive listing of installation works through early 2011, see Spier (2011), which provides the basis for this catalogue.

As noted in Chapter 2, Forsythe has given choreographic credit to the ensemble or to specific ensemble members. Where applicable, this has been noted. Unless otherwise indicated, all premieres from 1994-2004 are by the Ballett Frankfurt at the Opera House in Frankfurt and from 2005 onward, all premieres are by The Forsythe Company.

1976

Urlicht (pas de deux)

Soundscore: Gustav Mahler, *Symphony No. 2*, 4th Movement

Premiere: 18 November 1976, Noverre Society, Stuttgart

1977

Daphne (one-act ballet)

Soundscore: Antonin Dvořák, *Symphony No. 7 in D minor*, 2nd and 3rd movements

Stage design and costumes: William Forsythe

Premiere: 26 March 1977, Stuttgart Ballet, Stuttgart

Bach Violin Concerto in A Minor (one-act ballet)

Soundscore: Johann Sebastian Bach, *Violin Concerto in A minor*

Premiere: Basel Ballet, Basel

Flore Subsimplici (one-act ballet)

Soundscore: Georg Friedrich Händel, *Concerti Grossi*, op. 6

Stage design and costumes: William Forsythe

Premiere: 8 November 1977, Stuttgart Ballet, Stuttgart

1978

From the Most Distant Time (one-act ballet)

Soundscore: György Ligeti, *Double Concerto for Flute and Oboe*, silences, recorded spoken text

Speaker: Gisela Pfeil

Texts: Tang dynasty poems

Stage design and lighting: William Forsythe

Costumes: Arthur Brady

Premiere: 23 February 1978, Stuttgart Ballet, Stuttgart

Dream of Galilei/Traum des Galilei (one-act ballet)

Soundscore: Krzysztof Penderecki, *Symphony No. 1*

Stage design and costumes: William Forsythe

Premiere: 21 May 1978, Stuttgart Ballet, Stuttgart

Aria de la Folía Española (one-act ballet)

Soundscore: Hans Werner Henze, *Aria de la Folia Española*, prop sounds

Premiere: July, Montepulciano, Italy

1979

Orpheus (two-act ballet)

Soundscore: composition by Hans Werner Henze, vocal gestures, prop sounds

Stage design: Axel Manthey

Costumes: Joachim Herzog

Premiere: 17 March 1979, Stuttgart Ballet, Stuttgart

Love Songs (one-act ballet)

Soundscore: Pop song recordings sung by Aretha Franklin and Dionne Warwick

Stage design and lighting: William Forsythe

Costumes: Eileen Brady

Premiere: 5 May 1979, Stuttgart Ballet, Munich

Time Cycle (one-act ballet)

Soundscore: Lukas Foss, *Time Cycle* (song cycle for soprano and orchestra)

Text: W. H. Auden, A. E. Housman, Franz Kafka, and Friedrich Nietzsche

Stage design, lighting and costumes: Axel Manthey

Premiere: 22 December 1979, Stuttgart Ballet, Stuttgart

1980

Joyleen Gets Up, Gets Down, Goes Out (one-act ballet)

Soundscore: Boris Blacher, *Blues, Espagnola und Rumba Philharmonica* für
12 Solo Cellos

Stage design: William Forsythe

Costumes: Eileen Brady

Premiere: 22 May 1980, Bavarian State Opera Ballet, Munich

Say Bye Bye (one-act ballet)

Soundscore: Terry Riley and Stan Kenton arrangement, "The Peanut Vendor;" sound collage by William Forsythe, spoken text, corporeal gestures, prop sounds

Stage design: Axel Manthey

Lighting: Joop Caboort

Costumes: Axel Manthey

Premiere: 26 November 1980, Nederlands Dans Theater, The Hague, The Netherlands

'Tis A Pity She's A Whore (one-act ballet)

Soundscore: composition by Thomas Jahn; corporeal sounds (boot stamps)

Stage design: William Forsythe and Randi Bubat

Lighting: Hans-Joachim Haas

Costumes: Eileen Brady and Randi Bubat

Premiere: Montepulciano, Italy

Famous Mother's Club (solo for Lynn Seymour)

Soundscore: David Cunningham, "I Want Money;" prop sounds

Premiere: Single Parents' Gala, London Palladium, London

1981

Whisper Moon (one-act ballet)

Choreography: William Forsythe and Axel Manthey

Soundscore: William Bolcom, *Whisper Moon*, *Dream Soundscore No. 3*, and
Quintet for Violin, Violoncello, Flute, Clarinet and Piano

Stage design: Axel Manthey and William Forsythe

Lighting: Hans-Joachim Haas

Premiere: 12 April 1981, Stuttgart Ballet, Stuttgart

Tancred und Clorinda (one-act ballet)

Soundscore: Claudio Monteverdi, *Il combattimento di Tancredi e Clorinda*

Musical Arrangement: Luciano Berio

Text: Torquato Tasso

Lighting: Hans-Joachim Haas

Costumes: William Forsythe
Premiere: 5 May 1981, Stuttgart Ballet, Stuttgart

Die Nacht aus Blei (one-act ballet)

Soundscore: composition by Hans-Jürgen von Bose, silences, prop and scenery element sounds (including miked table legs)

Text: Hans Henny Jahnn

Stage design and costumes: Axel Manthey

Premiere: 1 November 1981, Ballet Deutsche Oper, Berlin

Event 1, 2, 3 (performance installation)

Choreography: William Forsythe and Ron Thornhill

Soundscore: sound collage by William Forsythe and Ron Thornhill, spoken text, sung text, non-textual singing, corporeal gestures, prop sounds (“laugh sacks,” metal plates)

Costumes: Randi Bubatz

Premiere: 1981, Wagenburg Tunnel, Stuttgarter Internationaler Kunst Kongress

1982

Gänge (Ein Stück über Ballett) (Part 1) (one-act ballet)

Soundscore: composition by William Forsythe, Dick Heuff, and Michael Simon; spoken text, sung text, vocal gestures, corporeal gestures, prop sounds, scenery element sounds

Stage design and lighting: Michael Simon

Costumes: Tom Schenk

Visual direction: William Forsythe and Michael Simon

Premiere: 25 February 1982, Nederlands Dans Theater, The Hague, The Netherlands

1983

Gänge (Ein Stück über Ballett) (full-length version)

Soundscore: composition by Thomas Jahn, spoken text, sung text, vocal gestures, corporeal gestures, prop sounds, scenery element sounds (miked)

Stage design: Michael Simon

Costumes: Randi Bubatz, Igolf Thiel, and Tom Schenk

Premiere: 27 February 1983, Frankfurt Ballet, Frankfurt

Mental Model (one-act ballet)

Soundscore: Igor Stravinsky’s *Quatre Études pour Orchestre*, *Four Norwegian Moods*, and *Scherzo à la Russe*; spoken text

Stage design: William Forsythe

Lighting: William Forsythe and Joop Caboort

Costumes: Stephen Meaha

Premiere: 16 June 1983, Nederlands Dans Theater, The Hague, The Netherlands

Square Deal (one-act ballet)

Soundscore: composition by William Forsythe, Thomas Jahn, and Michael Simon;
spoken text, onstage instruments (wood-and-metal drum)

Arrangement for tempered piano and trombone: Thomas Jahn

Stage design, composition and visual effects: William Forsythe

Lighting: William Forsythe and Jennifer Tipton

Costumes: Douglas Ferguson

Slides: Arthur Brady

Premiere: 2 November 1983, Joffrey Ballet, New York

France/Dance (full-length ballet)

Soundscore: Johann Sebastian Bach, *Art of the Fugue*; composition by Thom Willems;
spoken text

Soundscore collage, stage design, lighting and costumes: William Forsythe

Objects and images: Cara Perlman

Premiere: 14 December 1983, Ballet de l'Opéra de Paris, Paris

1984

Artifact (full-length ballet in four parts)

Soundscore: composition by Eva Crossman-Hecht (parts I and IV); Johann Sebastian Bach, *Chaconne* from *Partita No. 2 in D minor* (part II); sound collage by William Forsythe including recorded ambient noise (part III); silences, spoken text, corporeal gestures, scenery element sounds (fire curtain)

Stage design, lighting, costumes, and text: William Forsythe

Premiere: 5 December 1984, Frankfurt

1985

Steptext (one-act ballet)

Soundscore: Johann Sebastian Bach, *Chaconne* from *Partita No. 2 in D minor*

Stage design, lighting, and costumes: William Forsythe

Premiere: 11 January 1985, Aterballetto, Reggio Emilia, Italy

LDC (full-length ballet)

Soundscore: composition by Thom Willems, spoken text, audible text cues, prop and scenery element sounds (miked)

Stage design: Michael Simon

Lighting: Michael Simon and William Forsythe

Costumes: Benedikt Ramm
Premiere: 1 May 1985, Frankfurt

How To Recognize Greek Art I and II (pas de deux)
Soundscore: music collage by William Forsythe, spoken text
Premiere: 31 December 1985, Frankfurt

1986

Isabelle's Dance (full-length musical)
Soundscore: composition by Eva Crossman-Hecht, spoken text, sung text, vocal gestures, corporeal gestures, tap dancing, prop sounds
Lyrics: Eva Crossman-Hecht, William Forsythe, Sara Neece, and Stephen Saugey
Stage design and lighting: Michael Simon
Costumes: FÉrial Simon
Premiere: 3 February 1986, Ballett Frankfurt, Frankfurt

Pizza Girl (ninety one-minute ballets)
Choreography: Alida Chase, William Forsythe, Stephen Galloway, Timothy Gordon, Dieter Heitkamp, Evan Jones, Amanda Miller, Vivienne Newport, Cara Perlman, Antony Rizzi, Ana Catalina Roman, Iris Tenge, Ron Thornhill, and Berna Uithof
Soundscore: composition by Thom Willems, spoken text, vocal gestures, corporeal gestures, prop and scenery element sounds (buckets)
Stage design: William Forsythe and Cara Perlman
Lighting: William Forsythe
Costumes: William Forsythe and Benedikt Ramm
Painting: Cara Perlman, "Pizza Girl"
Premiere: 27 February 1986, Frankfurt

Skinny (one-act ballet)
Choreography: William Forsythe and Amanda Miller
Soundscore: composition by William Forsythe and Thom Willems, spoken text, onstage instruments (violins played by dancers)
Text, stage design and lighting: William Forsythe
Costumes: William Forsythe and Amanda Miller
Premiere: 17 April 1986, Frankfurt

Baby Sam (one-act ballet)
Soundscore: composition by Thom Willems, music collage by William Forsythe, spoken text (Forsythe's voice via microphone)
Text: William Forsythe
Stage design, lighting, and costumes: William Forsythe
Premiere: 21 May 1986, Bari, Italy

Die Befragung des Robert Scott † (one-act ballet)

Soundscore: composition by Thom Willems, silences, spoken text, vocal gestures, prop sounds (bucket)

Text, stage design, lighting and costumes: William Forsythe

Premiere: 29 October 1986, Frankfurt

Big White Baby Dog (one-act ballet)

Soundscore: composition by Thom Willems, prop sounds (miscellaneous gag items including squeaking rubber chickens)

Stage design, lighting, and costumes: William Forsythe

Premiere: 10 November 1986, Ballett Frankfurt, Frankfurt

1987

New Sleep (one-act ballet)

Soundscore: composition by Thom Willems, spoken text, prop sounds (bowling ball)

Stage design, lighting, and costumes: William Forsythe

Premiere: 1 February 1987, San Francisco Ballet, San Francisco

The Loss of Small Detail (version 1) (full-length ballet)

Soundscore: composition by Thom Willems, spoken text, digital glove played by Amanda Miller

Text: William Forsythe, David Levin, and Patrick Primavesi

Digital gloves: Michel Waisvisz

Stage design and lighting: William Forsythe

Costumes: Benedikt Ramm

Premiere: 4 April 1987, Frankfurt

In The Middle, Somewhat Elevated (one-act ballet)

Soundscore: composition by Thom Willems in collaboration with Leslie Stuck

Stage design, lighting, and costumes: William Forsythe

Premiere: 30 May 1987, Ballet de l'Opéra de Paris, Paris

Same Old Story (one-act ballet)

Soundscore: composition by Thom Willems, spoken text

Text: Nicholas Champion, Kathleen Fitzgerald, and William Forsythe

Stage design, lighting, and costumes: William Forsythe

Premiere: 5 June 1987, Ballett Frankfurt, Hamburg

1988

Impressing The Czar (full-length ballet)

(Part I: *Potemkins Unterschrift*; Part II: *In the Middle, Somewhat Elevated*; Part III: *La Maison de Mezzo-Prezzo*; Part IV: *Bongo Bongo Nageela* and *Mr. Pnut Goes to the Big Top*)

Soundscore: Ludwig van Beethoven, *Opus 131, string quartet no. 14*, fifth movement; compositions by Leslie Stuck, Thom Willems, and Eva Crossman-Hecht; spoken text, sung text, vocal gestures, corporeal gestures, prop sounds

Stage design: Michael Simon and William Forsythe

Lighting: William Forsythe and Michael Simon

Costumes: F  rial Simon

Text: William Forsythe, Richard Fein, and Kathleen Fitzgerald

Premiere: 10 January 1988, Frankfurt

Behind the China Dogs (one-act ballet)

Soundscore: composition by Leslie Stuck

Lighting: William Forsythe

Costumes: William Forsythe and Barbara Matera

China dogs: Cara Perlman

Premiere: 7 May 1988, New York City Ballet, New York

The Vile Parody of Address (one-act ballet)

Soundscore: Johann Sebastian Bach, *The Well-Tempered Clavier*, spoken text

Stage design, lighting and costumes: William Forsythe

Text: William Forsythe

Premiere: 26 November 1988, Frankfurt

1989

Enemy in the Figure (one-act ballet)

Soundscore: composition by Thom Willems, corporeal gestures

Stage design, lighting and costumes: William Forsythe

Premiere: 13 May 1989, Frankfurt

Slingerland (Part 1) (one-act ballet)

Soundscore: Gavin Bryars, *Three Viennese Dancers* and *String Quartet No. 1*

Stage design and film: Cara Perlman

Lighting and costumes: William Forsythe

Premiere: 25 November 1989, Frankfurt

1990

Limb's Theorem (full-length ballet; incorporates *Enemy in the Figure* as part 2)

Soundscore: composition by Thom Willems, corporeal gestures, prop sounds (poles)

Stage design: Michael Simon (Parts I and III) and William Forsythe (Part II)

Lighting: William Forsythe and Michael Simon

Costumes: F  rial Simon (Parts I and III) and William Forsythe (Part II)

Premiere: 17 March 1990, Frankfurt

Slingerland (full-length ballet)

Soundscore: composition by Thom Willems; Gavin Bryars, *Sub Rosa*

Stage design, lighting, and costumes: William Forsythe

Objects and images: Cara Perlman

Premieres: 25 June 1990, Amsterdam (parts I-III) and 20 October 1990, Paris (parts I-IV)

1991

the second detail (one-act ballet)

Soundscore: composition by Thom Willems

Stage design and lighting: William Forsythe

Costumes: William Forsythe; "Colombe" dress by Issey Miyake

Premiere: 20 February 1991, National Ballet of Canada, Toronto

Snap. Woven Effort (one-act ballet)

Soundscore: composition by Thom Willems, spoken text, electronically transposed text, sung text, corporeal gestures, prop sounds (bucket, electric drills)

Text, stage design and lighting: William Forsythe

Costumes: Gianni Versace

Premiere: 26 October 1991, Frankfurt

Marion/Marion (duet)

Soundscore: Bernard Herman, *Temptation No. 5*

Stage design and lighting: William Forsythe

Costumes: Gianni Versace

Premiere: 8 November 1991, Nederlands Dans Theater III, The Hague, The Netherlands

The Loss of Small Detail (full-length ballet in two acts; incorporates *the second detail*)

Soundscore: composition by Thom Willems, spoken text, vocal gestures, prop sounds

Stage design and lighting: William Forsythe

Costumes: William Forsythe and Issey Miyake

Text: William Forsythe, Yukio Mishima (excerpts from *Runaway Horses*), and J  r  me Rothenberg (excerpts from *Technicians of the Sacred*)

Film: Helga Funderl, *Hund im Schnee* and Fiona Léus, *Between Mediums*

Premiere: 21 December 1991, Frankfurt

1992

Herman Schmerman (pas de cinq)

Soundscore: composition by Thom Willems

Stage design: William Forsythe

Lighting: Marc Stanley

Costumes: Gianni Versace

Premiere: 28 May 1992, New York City Ballet, New York

Herman Schmerman (pas de deux)

Soundscore: composition by Thom Willems

Stage design and lighting: William Forsythe

Costumes: Gianni Versace

Premiere: 26 September 1992, Frankfurt

As a Garden in This Setting (one-act ballet)

Soundscore: composition by Thom Willems, prop sounds (ribbon), scenery element sounds (electronically transposed)

Stage design and lighting: William Forsythe

Costumes: Issey Miyake and Naoki Takizawa

Video: Sean Toren

Premiere: 13 June 1992, Frankfurt

ALIE/NA(C)TION (full-length ballet)

Soundscore: composition by Thom Willems; Arnold Schönberg, "O, daß der Sinnen doch so viele sind;" spoken text (electronically transposed), corporeal gestures, prop and scenery element sounds, movie soundtracks

Stage design and lighting: William Forsythe

Costumes: Steven Galloway

Video: Sean Toren

Computer programming: David Kern

Dramaturgical assistance: Steven Valk

Premiere: 19 December 1992, Frankfurt; new version 5 November 1993, Frankfurt

1993

Quintett (one-act ballet)

Choreography: William Forsythe in collaboration with Dana Caspersen, Stephen Galloway, Jacopo Godani, Thomas McManus, and Jone San Martin

Soundscore: Gavin Bryars, *Jesus's Blood Never Failed Me Yet*; corporeal gestures
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 9 October 1993, Frankfurt

As a Garden in This Setting (full-length version)

Soundscore: composition by Thom Willems, prop sounds (ribbon), prop and scenery element sounds (electronically transposed)
Stage design and lighting: William Forsythe
Costumes: Issey Miyake and Naoki Takizawa
Dramaturgical assistance: Steven Valk
Premiere: 18 December 1993, Frankfurt

1994

Self Meant To Govern (one-act ballet)

Soundscore: composition by Thom Willems in collaboration with Maxim Franke, spoken text, audible text cues, corporeal gestures, onstage instruments, prop sounds (clock sounds; recorded in later versions)
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Violin: Maxim Franke
Premiere: 2 July 1994, Frankfurt

Pivot House (one-act ballet)

Soundscore: Kraton Surakarta, *Sirimpi* (Provisions for Death)
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Video: Richard Caon
Premiere: 13 December 1994, Reggio Emilia, Italy

1995

Eidos: Telos (full-length ballet in three acts; contains *Self Meant to Govern*)

Choreography: William Forsythe in collaboration with the ensemble
Soundscore and DSP processing: composition by Thom Willems in collaboration with Maxim Franke (Part I); composition by Thom Willems in collaboration with Joel Ryan (Parts II and III); spoken text (electronically transposed), sung text, audible text cues, vocal gestures, corporeal gestures, onstage instruments (violin, electronically transposed trombones), prop and scenery element sounds (electronically transposed)
Soundscore assistant: Dirk Haubrich
Texts: Dana Caspersen (monologue, Part II), William Forsythe (additional texts, part II)

Stage design and Lighting: William Forsythe
Costumes: Stephen Galloway (Part II) and Naoki Takizawa (Miyake Design Studio)
Premiere: 28 January 1995, Frankfurt

Firsttext (one-act ballet)

Choreography: Dana Caspersen, William Forsythe, and Antony Rizzi
Soundscore: composition by Thom Willems, corporeal gestures
Stage design and lighting: William Forsythe
Costumes: Naoki Takizawa and Raymond Dragon Design Inc.
Premiere: 27 April 1995, The Royal Ballet, London

Invisible Film (one-act ballet)

Soundscore: Johann Sebastian Bach, *Goldberg Variations*; George Friedrich Händel, *Concerti Grossi*, Op. 6; Henry Purcell, *Fantazias*, *In Nomines*; spoken text, onstage instruments (live mixing), scenery element sounds (cloth drops)
Text: William Forsythe and pop music texts
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Speaker: David Morrow
Premiere: 27 May 1995, Frankfurt

Of Any If And (one-act ballet)

Soundscore: composition by Thom Willems, spoken text, scenery sounds (paper cards, fly system machinery)
Text: Dana Caspersen and William Forsythe
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 27 May 1995, Frankfurt

The The (one-act ballet)

Choreography: Dana Caspersen and William Forsythe
Soundscore: silences, spoken text with ambient background noise (recorded), corporeal gestures
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 8 October 1995, The Hague, The Netherlands

Four Point Counter (one-act ballet)

Soundscore: composition by Thom Willems
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 16 November 1995, Nederlands Dans Theater, The Hague, The Netherlands

1996

Duo (one-act ballet)

Soundscore: silences, breath score, composition by Thom Willems

Stage design, lighting, and costumes: William Forsythe

Premiere: 20 January 1996, Frankfurt

Trio (one-act ballet)

Soundscore: Ludwig van Beethoven, *String Quartet No. 15 in A minor*, op. 132, and Alban Berg, *String Quartet*, op 3; silences, corporeal gestures

Stage design and lighting: William Forsythe

Costumes: Stephen Galloway

Premiere: 20 January 1996, Frankfurt

Approximate Sonata (one-act ballet)

Soundscore: composition by Thom Willems; Tricky, "Pumpkin;" sung text

Stage design and lighting: William Forsythe

Costumes: Stephen Galloway

Premiere: 20 January 1996, Frankfurt

The Vertiginous Thrill of Exactitude (one-act ballet)

Soundscore: Franz Schubert, *Symphony No. 9 in C major*, 3rd movement

Stage design and lighting: William Forsythe

Costumes: Stephen Galloway

Premiere: 20 January 1996, Frankfurt

Sleepers Guts (full-length ballet in three parts)

Choreography: William Forsythe in collaboration with the ensemble (Part I); William Forsythe (Part II); Jacopo Godani (Part III)

Soundscore: compositions by Thom Willems and Joel Ryan; DSP composition by Joel Ryan and Dirk Haubrich; spoken text, corporeal gestures, onstage instruments

Soundscore assistant: Chris Salter

Stage design and lighting: William Forsythe

Costumes: Stephen Galloway

Video: Nik Haffner and Bill Seaman

Projection graphics: Mark Goulthorpe

Premiere: 25 October 1996, Frankfurt

1997

Hypothetical Stream II (one-act ballet)

Choreography: William Forsythe, Regina van Berkel, Christine Bürkle, Ana Catalina Roman, Jone San Martin, Timothy Couchman, Noah Gelber, Jacopo Godani, Antony

Rizzi, and Richard Siegal
Soundscore: Stuart Dempster, *Standing Waves* and Ingram Marshall, *Fog Tropes*;
corporeal gestures
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 14 September 1997, Frankfurt

1998

Small Void (one-act ballet)

Choreography: William Forsythe in collaboration with Stefanie Arndt, Alan Barnes,
Dana Caspersen, Noah Gelber, Anders Hellström, Fabrice Mazliah, Tamas Moricz,
Crystal Pite, Jone San Martin, Richard Siegal, Pascal Touzeau, and Sjoerd Vreugdenhil
Soundscore: composition by Thom Willems
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 30 January 1998, Frankfurt

Opus 31 (one-act ballet)

Soundscore: Arnold Schönberg, *Variations for Orchestra*, op. 31, silence (during
performance of movement theme in intermission)
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 30 January 1998, Frankfurt

Quartetto (one-act ballet)

Soundscore: composition by Thom Willems
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 8 September 1998, Balletto del Teatro alla Scala di Milano, Milan

Workwithinwork (one-act ballet)

Soundscore: Luciano Berio, *Duetti for two violins* (1983)
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 16 October 1998, Frankfurt

1999

Woundwork 1 (one-act ballet)

Soundscore: composition by Thom Willems
Stage design and lighting: William Forsythe

Costumes: Stephen Galloway
Premiere: 31 March 1999, Ballet de l'Opéra de Paris, Paris

Pas./parts (one-act ballet)

Soundscore: composition by Thom Willems
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 31 March 1999, Ballet de l'Opéra de Paris, Paris

Endless House (full-length ballet in two parts)

Part I

Directed by: Dana Caspersen
Soundscore: Kraton Surakarta, *Sirimpi* (Provisions for Death), spoken text
Text: Charles Manson
Stage design and lighting: William Forsythe

Part II

Choreography: William Forsythe
Soundscore: compositions by Autopoiesis (Ekkehard Ehlers and Sebastian Meissner) and Thom Willems; spoken text, sung text, corporeal gestures, scenery and prop sounds
Sound Design: Bernhard Klein, Dietrich Krüger, and Niels Lanz
Texts: Emily Brontë, Dana Caspersen, William Forsythe, and Charles Manson
Direction, stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Dramaturgical assistance: Dana Caspersen and Steven Valk
Premiere: 15 October 1999, Frankfurt Opera (Part 1) and Bockenheimer Depot (Part 2), Frankfurt

2000

Die Befragung des Robert Scott † (new full-length version)

Soundscore: composition by Thom Willems, silences, spoken text, audible text cues, vocal gestures, corporeal gestures, prop sounds (bucket)
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 2 February 2000, Frankfurt

One Flat Thing, reproduced (one-act ballet; part 3 of *Die Befragung des Robert Scott †*)

Soundscore: composition by Thom Willems, audible text and corporeal cues, corporeal gestures
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 2 February 2000, Bockenheimer Depot, Frankfurt

7 to 10 Passages (one-act ballet)

Soundscore: composition by Thom Willems, spoken text, sung text

Text: William Forsythe and Edgar Allen Poe

Stage design and lighting: William Forsythe

Premiere: 23 February 2000, Frankfurt

Kammer/Kammer (full-length ballet)

Directed by: William Forsythe

Soundscore: compositions by Johann Sebastian Bach, Heinrich von Bieber, Georg Philipp Telemann, Johann Sebastian Bach (arr. Ferruccio Busoni), Thom Willems, and Lynn Anderson ("Cry"); spoken text, sung text, vocal gestures, corporeal gestures, prop sounds, recorded ambient soundtracks

Stage design, lighting, and costumes: William Forsythe

Film: Martin Schwember, First Touch

Video software 'Image/ine': Tom Demeyer/S.T.E.I.M.

Video design: Philip Bussmann

Live video coordination: Agnieszka Trojak

Camera: Ursula Maurer

Sound design: Joel Ryan

Piano: David Morrow

Text: Anne Carson, "Irony is not enough: Essay on My Life as Catherine Deneuve" (2nd draft) and Douglas A. Martin, *Outline of My Lover*

Premiere: 8 December 2000, Bockenheimer Depot, Frankfurt

2001

Woolf Phrase (one-act ballet)

Soundscore: compositions by Ekkehard Ehlers and Thom Willems, silences, spoken text, animal sounds (live and sampled), vocal gestures, corporeal gestures, prop sounds (microphones), recorded ambient soundtrack samples (ocean waves)

Stage design, lighting, and costumes: William Forsythe

Sound design: Bernhard Klein

Texts: William Forsythe and Virginia Woolf, *Mrs. Dalloway*

Premiere: 15 March 2001, Frankfurt

Woolf Phrase (full-length version)

Soundscore: Part 1: compositions by Ekkehard Ehlers and Thom Willems, silences, spoken text, animal sounds (live and sampled), vocal gestures, corporeal gestures, prop sounds (microphones), recorded ambient soundtrack samples (ocean waves)

Part 2: compositions by David Morrow, William Forsythe, Richard Siegal (electric guitar), and Alessio Silvestrin (tubular bells); spoken text, vocal gestures, corporeal gestures, onstage instruments

Text: William Forsythe and Virginia Woolf, *Mrs. Dalloway*

Stage design, lighting, and costumes: William Forsythe
Piano: David Morrow
Sound design: Bernhard Klein, Dietrich Krüger, and Niels Lanz
Premiere: 21 September 2001, Frankfurt

2002

The Room As it Was (one-act ballet)
Soundscore: composition by Thom Willems, breath score
Stage design and lighting: William Forsythe
Costumes: Stephen Galloway
Premiere: 14 February 2002, Frankfurt

Double/Single (one-act ballet)
Soundscore: compositions by Johann Sebastian Bach (violin sonatas and partitas) and Thom Willems
Violin: Nathan Milstein
Stage design, lighting, and costumes: William Forsythe
Premiere: 14 April 2002, Amsterdam

33/3 (one-act ballet)
Soundscore: composition by Thom Willems in collaboration with Olivier Sliepen, spoken text, corporeal gestures, tap dancing
Stage design, lighting, and costumes: William Forsythe
Tap consultant: Holly Brubach
Saxophone: Olivier Sliepen
Premiere: 11 September 2002, Frankfurt

N.N.N.N. (one-act ballet)
Soundscore: composition by Thom Willems, breath score
Stage design, lighting, and costumes: William Forsythe
Premiere: 21 November 2002, Opera House, Frankfurt

2003

Decreation (full-length ballet)
Soundscore: composition by David Morrow, silences, spoken text, sung text, non-textual singing, vocal choreography, vocal gestures, corporeal gestures, onstage instruments (keyboard played by David Morrow, shoes, chairs), prop sounds
Stage design: William Forsythe
Lighting: Jan Walther and William Forsythe
Costumes: Claudia Hill

Video design: Philip Bußmann
Sound design: Niels Lanz and Bernhard Klein
Dramaturgy: Rebecca Groves
Premiere: 27 April 2003, Frankfurt

Ricercar (one-act ballet)

Soundscore: composition by David Morrow (variations on Johann Sebastian Bach, *Ricercar a 6* from *The Musical Offering*), breath score (finale)
Stage design, lighting, and costumes: William Forsythe
Piano: David Morrow
Premiere: 13 November 2003, Frankfurt

2004

Wear (one-act ballet)

Soundscore: Ryoji Ikeda, *Op. 1* (performed live by Ensemble Modern), spoken text, corporeal gestures
Stage design and lighting: William Forsythe
Costumes: Yasco Otomo
Premiere: 22 January 2004, Bockenheimer Depot, Frankfurt

we live here (full-length ballet)

By and with: Yoko Ando, Cyril Baldy, Francesca Caroti, Dana Caspersen, Mauricio de Oliveira, William Forsythe, Stephen Galloway, Amancio Gonzalez, Rebecca Groves, Thierry Guiderdoni, Ayman Harper, Sang Jijia, David Kern, Dietrich Krüger, Marthe Krummenacher, Brock Labrenz, Vanessa le Mat, Jone San Martin, Fabrice Mazliah, Georg Reischl, Heidi Vierthaler, Jan Walther, Thom Willems, and Ander Zabala
Soundscore: composition by Thom Willems, spoken text, sung text (with and without DSP programming), animal sounds (dogs), vocal gestures, corporeal gestures
Premiere: 19 April 2004, Frankfurt

2005

you made me a monster (performance installation)

Soundscore: sound design by Dietrich Krüger, Niels Lanz, and Hubert Machnik; vocal choreography, corporeal gestures, onstage instruments (head-mounted microphones)
DSP voice treatments: Andreas Breitscheid and Manuel Poletti in collaboration with the Forum Neues Musiktheater Staatsooper Stuttgart
Lighting: Michael JIV Wagner
Video: Phillip Bussman
Premiere: 28 May 2005, Teatro Piccolo Arsenale, Venice, Italy

the first detail (one-act ballet; new part 1 version of *The Loss of Small Detail*)

Soundscore: composition by Thom Willems (*woundwork I*)

Stage design and lighting: William Forsythe

Costumes: Issey Miyake

Premiere: 16 June 2005, Staatsschauspiel Dresden, Dresden

Three Atmospheric Studies (original version) (full-length ballet in two acts)

Soundscore, part 1: composition by David Morrow

Soundscore, Part 2: composition by Thom Willems, spoken text, vocal choreography (Ander Zabala), vocal gestures, corporeal gestures, scenery element sounds (door)

Speakers, Part 2: David Kern and Dana Caspersen

Text, Part 2: Dana Caspersen, William Forsythe, and David Kern

Sound design and synthesis: Dietrich Krüger and Niels Lanz

Voice treatment, DSP programming: Andreas Breitscheid, Oliver Pasquet, and Manuel Poletti in collaboration with the Forum Neues Musiktheater Staatsoper Stuttgart

Stage design and lighting: William Forsythe

Light object, part 1: Spencer Finch

Costumes: Satoru Choko and Dorothee Merg

Premiere: 21 April 2005, Bockenheimer Depot, Frankfurt

Clouds After Cranach (full-length ballet in two acts)

Soundscore, part 1: breath score

Soundscore, part 2: composition by David Morrow, spoken text, sung text (Jone San Martin), vocal gestures (recorded crying)

Speakers, part 2: Amancio Gonzalez, David Kern, and Jone San Martin

Text: William Forsythe

Sound design: Dietrich Krüger/Niels Lanz

Voice treatment, DSP programming: Andreas Breitscheid and Manuel Poletti in collaboration with the Forum Neues Musiktheater, Staatsoper Stuttgart

Stage design, lighting, and costumes: William Forsythe

Premiere: 26 November 2005, Bockenheimer Depot, Frankfurt

2006

Three Atmospheric Studies (full-length ballet in three acts; parts 1 and 2: *Clouds after Cranach*; part 3: *Three Atmospheric Studies* original version part 2)

Soundscore, part 1: spoken text, breath score, corporeal gestures

Soundscore, part 2: composition by David Morrow, spoken text, sung text (Jone San Martin), vocal gestures (recorded crying)

Speakers, part 2: Amancio Gonzalez, David Kern, and Jone San Martin

Soundscore, part 3: composition by Thom Willems, spoken text, vocal choreography (Ander Zabala), vocal gestures, corporeal gestures, scenery element sounds (door)

Speakers, part 3: Dana Caspersen and David Kern

Text, part 3: Dana Caspersen, William Forsythe, and David Kern
Sound design and synthesis: Dietrich Krüger and Niels Lanz
Voice treatment, DSP programming: Andreas Breitscheid, Oliver Pasquet, and Manuel Poletti in collaboration with the Forum Neues Musiktheater Staatsoper Stuttgart
Stage design and lighting: William Forsythe
Costumes: Satoru Choko and Dorothee Merg
Premiere: 2 February 2006, spielzeiteuropa, Haus der Berliner Festspiele, Berlin

Heterotopia (full-length ballet)

Soundscore: composition by Thom Willems, spoken text (nonce languages), sung text (nonce languages, later versions only), vocal choreography, animal sounds, vocal gestures, corporeal gestures, onstage instruments (ribbon), prop and scenery sounds
Sound Design: Dietrich Krüger and Niels Lanz
Costumes: Dorothee Merg
Dramaturgy: Freya Vass-Rhee
Premiere: 25 October 2006, Schiffbau Halle I, Zürich, Switzerland

Rong

Soundscore: pop song collage by William Forsythe, spoken text, sung text, vocal gestures (beatboxing), prop sounds (pom poms), scenery sounds
Stage design and lighting: William Forsythe
Costumes: Dorothee Merg and Gianni Versace
Premiere: 22 November 2006, Bockenheimer Depot, Frankfurt

2007

Fivefold (one-act ballet)

Soundscore: soundscore by David Morrow
Costumes: Dorothee Merg
Premiere: 1 February 2007, Festspielhaus Hellerau, Dresden

Angoloscuro/Camerascuro (full-length ballet/performance installation in two parts)

Soundscore: composition by Thom Willems, water glass harp (Anna Tenta and David Kern), spoken text (nonce languages), animal sounds, vocal gestures, corporeal gestures, onstage instruments (shoe squeaks, ribbon), prop sounds
Sound design: Niels Lanz
Stage design and lighting: William Forsythe
Software design: Andreas Breitscheid
Video direction: Philip Bussmann
Video design: Philip Bussmann, William Forsythe, and Dietrich Krüger
Assistant, camera programming: Hubert Machnik
Assistant, stage design Part 1: Susanne Brenner
Costumes: William Forsythe, Dorothee Merg, and Issey Miyake

Fabric design: Mina Perhonen
Dramaturgy: Freya Vass-Rhee
Premiere: 3 May 2007, Bockenheimer Depot, Frankfurt

The Defenders (full-length ballet)

Soundscore: composition by Dietrich Krüger and Thom Willems, spoken text, sung text, animal sounds, vocal gestures, corporeal gestures, onstage instruments (whistles), prop sounds, recorded ambient soundtrack

Sound: Dietrich Krüger

Stage design: William Forsythe

Lighting: Tanja Rühl

Costumes: Dorothee Merg

Technical realisation: Max Schubert

Dramaturgy: Imanuel Schipper and Freya Vass-Rhee

Premiere: 4 November 2007, Schiffbau Halle I, Zürich, Switzerland

Nowhere and Everywhere at the Same Time (performance installation; full-length version)

Soundscore: composition by Thom Willems, corporeal gestures

Lighting: William Forsythe

Costumes: Dorothee Merg

Premiere: 16 November 2007, Bockenheimer Depot, Frankfurt

2008

Yes We Can't (full-length ballet)

Soundscore: composition by Dietrich Krüger, Niels Lanz, and David Morrow; silences, spoken text, non-textual singing, vocal gestures, corporeal gestures, prop sounds

Lighting: Ulf Naumann and Tanja Rühl,

Costumes: Dorothee Merg

Production assistance: Thierry Guiderdoni and Freya Vass-Rhee

Production scoring software: David Kern

Premiere: 5 March 2008, Festspielhaus Hellerau, Dresden

I don't believe in outer space (full-length ballet)

Soundscore: composition by Thom Willems, spoken text, sung text, vocal gestures, corporeal gestures, prop sounds

Additional texts: Dana Caspersen, Tilman O'Donnell, and William Forsythe

Stage design: William Forsythe

Lighting: Tanja Rühl and Ulf Naumann

Costumes: Dorothee Merg

Sound design: Niels Lanz

Graphics: Dietrich Krüger

Dramaturgical assistance: Freya Vass-Rhee
Premiere: 20 November 2008, Bockenheimer Depot, Frankfurt

2009

Angoloscuro (new version) (full-length ballet)

Soundscore: composition by Thom Willems, water glasses, spoken text (including nonce languages), animal sounds, vocal gestures, corporeal gestures, onstage instruments (shoe squeaks, ribbon), prop sounds

Sound design: Niels Lanz

Stage design and lighting: William Forsythe

Costumes: William Forsythe, Dorothee Merg, and Issey Miyake

Assistant, stage design: Susanne Brenner

Dramaturgical assistance: Freya Vass-Rhee

Premiere: 12 February 2009, Bockenheimer Depot, Frankfurt

Two Part Invention (solo for Noah Gelber)

Soundscore: composition by Thom Willems

Premiere: 9 April 2009, Cullen Theater, Houston, Texas

The Returns (full-length ballet)

Soundscore: composition by Dietrich Krüger, Sebastian Rietz, Thom Willems, and David Kern; Ricky Lee Jones, "The Returns;" spoken text, sung text, animal sounds (DSP parrot imitation), vocal gestures, corporeal gestures, prop sounds, scenery element sounds (plotter printer), recorded ambient soundtrack (ping pong balls)

Stage design: William Forsythe

Lighting: Ulf Naumann and Tanja Rühl

Costumes: William Forsythe, Stephen Galloway, and Dorothee Merg

Piano: David Morrow

Graphic design: Dietrich Krüger

Dramaturgical assistance: Freya Vass-Rhee

Premiere: 24 June 2009, Festspielhaus Hellerau, Dresden

Theatrical Arsenal II (full-length ballet in two acts)

Soundscore: composition by Thom Willems, spoken text, sung text, vocal gestures, corporeal gestures

Texts: William Forsythe

Lighting: Tanja Rühl and Ulf Naumann

Costumes: Stephan Galloway

Sound Design: Niels Lanz

Video: Dietrich Krüger

Speakers: Dana Caspersen, David Kern, David Morrow, Tilman O'Donnell, Parvaneh Scharafali, Freya Vass-Rhee, and Ander Zabala (later version: Dana Caspersen, David

Kern, Tilman O'Donnell, and Ander Zabala)
Premiere: 20 November 2009, Bockenheimer Depot, Frankfurt

2010

Yes we can't ("Barcelona" version) (full-length ballet in one act)
Soundscore: composition by David Morrow, spoken text, non-textual singing, vocal gestures, corporeal gestures
Lighting: Ulf Naumann and Tanja Rühl
Costumes: Dorothee Merg
Production assistance: Thierry Guiderdoni and Freya Vass-Rhee
Premiere: 16 April 2010, Mercat de Flors, Barcelona

Whole in the Head (one-act ballet)
Soundscore: composition by Thom Willems, non-textual singing, vocal gestures, corporeal gestures
Lighting: Tania Rühl and Ulf Naumann
Costumes: Dorothee Merg
Premiere 18 November 2010, Bockenheimer Depot, Frankfurt

2011

Sider (full-length ballet)
Soundscore: composition by Thom Willems, spoken text, vocal gestures, corporeal gestures, prop sounds
Lighting: Ulf Naumann, Tanja Rühl
Light object: Spencer Finch
Sound design: Niels Lanz
Dramaturgy/production assistance: Billy Bultheel, Freya Vass-Rhee, and Elizabeth Waterhouse
Premiere 16 June 2011, Festspielhaus Hellerau

Rearray (duet for Sylvie Guillem and Nicholas Le Riche)
Soundscore: composition by David Morrow
Premiere: 5 July 2011, Sadler's Wells, London

Now This When Not That (full-length ballet)
Soundscore: composition by Thom Willems, spoken text, sung text (nonce language), animal sounds (birdcalls), vocal gestures, corporeal gestures, onstage instruments (shoe squeaks, brass "head bells"), prop sounds (pom poms)
Sound design: Dietrich Krüger, Niels Lanz
Stage: William Forsythe

Lighting: Ulf Naumann, Tanja Rühl, and William Forsythe
Technical execution: Max Schubert
Costumes: William Forsythe and Dorothee Merg
Premiere 5 October 2011, Jahrhunderthalle Bochum