



# THE UNIVERSITY *of* EDINBURGH

This thesis has been submitted in fulfilment of the requirements for a postgraduate degree (e.g. PhD, MPhil, DClinPsychol) at the University of Edinburgh. Please note the following terms and conditions of use:

- This work is protected by copyright and other intellectual property rights, which are retained by the thesis author, unless otherwise stated.
- A copy can be downloaded for personal non-commercial research or study, without prior permission or charge.
- This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the author.
- The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author.
- When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given.

DANCING TO AN UNDERSTANDING OF EMBODIMENT

by

SUE HAWKSLEY

Ph.D.  
The University of Edinburgh  
2012



© SUE HAWKSLEY 2012

## **Declaration**

I declare that this thesis has been composed by myself, the work is my own, and it has not been submitted for any other degree or professional qualification.

**Sue Hawksley**

Edinburgh, May 2012

## **Dancing To An Understanding Of Embodiment**

### **Abstract**

This practice-led research employs choreographic and somatic practices, and their mediation through performance and/or technologies, to facilitate critical engagement and apprehension of notions of embodiment.

The core concerns are movement, dance and the body, as sites of knowledge and as modes of inquiry, with particular focus on lived experience approached from a non-dualist perspective. Central themes are action, attention, bodyscape, tensegrity, improvisation, interactivity, memory, language and gesture. Taking as a starting point the position that knowledge and mind may be embodied, and that the movement habits and stress markers which pattern bodyscape may in turn inform cognition, the choreographic practice seeks to illuminate, rather than explicate or demonstrate, aspects of embodiment.

The methodological approaches are (en)active, heuristic and reflective. Dance, as an exemplar of movement, and choreography, as a mode of creative and critical engagement with dance, are the primary research tools. Somatic approaches to practice, performance and philosophy are investigated for their potential to develop or reveal embodied knowing and awareness. Technological mediation is employed to inform and augment perception and apprehension of the embodied experience of dance, from the perspectives of choreographer, performer and audience.

The thesis comprises five dance-based performance works and a written text critically engaging the concepts behind and emergent from this praxis.

## Contents

<b>List of figures</b>	9
<b>Acknowledgements</b>	10
<b>Chapter 1: beginning</b>	11
1.1 practices and processes	12
1.2 a note on terminology	14
1.3 contextual skeleton	16
1.3.1 theoretical approaches	16
1.3.2 choreographic approaches	16
1.3.3 somatic approaches	17
1.3.4 tools of mediation	19
1.4 thesis outline	19
1.5 locating myself in the field	22
1.6 a note on ethics	25
<b>Chapter 2: thinking</b>	27
2.1 background	27
2.2 choreographic processes	27
2.3 performance	29
2.4 embodiment: the muscle is a mind?	33
2.5 attentional folds	36
2.6 improvisation: thinking in movement	39
2.7 talking while dancing	41
2.8 practices of improvisational awareness	43
2.9 gesture	45
2.10 conclusions	47
<b>Chapter 3: remembering</b>	48
3.1 background	49
3.2 choreographic and collaborative processes	50
3.2.1 reporting	50
3.2.2 tactual reporting	51

3.2.3	notebooks	54
3.3	performance	55
3.3.1	duet	55
3.3.2	Pools (Big Page)	56
3.3.3	5-7-11	57
3.3.4	Piano	59
3.3.5	Freya's web	61
3.3.6	Steinvor everywhere	62
3.3.7	Lucy's tomato	64
3.4	open work: enactive performance	65
3.5	practices of inhibition	66
3.6	gestures of remembering	69
3.7	conclusions	70
<b>Chapter 4</b>	<b>patterning</b>	72
4.1	background	73
4.2	choreographic process	75
4.2.1	imagined dances	76
4.2.2	artificial trauma	77
4.2.3	gesture	79
4.2.4	sounding	79
4.2.5	transformation	81
4.3	performance	82
4.4	bodyscape, schema, image	84
4.5	tensegrity schema	87
4.6	attentional layers	89
4.7	practices of embodied reflection	91
4.8	performance as practice of embodied reflection	94
4.8.1	manipulated/manipulating body	94
4.8.2	split body	95
4.8.3	(in)tensioned body	97
4.9	conclusions	99

<b>Chapter 5: languaging</b>	100
5.1 background	101
5.2 choreographic processes	102
5.3 interactive system	105
5.3.1 speech and sound	105
5.3.2 movement and text	108
5.4 performance	111
5.4.1 speak and write a dance, dance and rewrite, read	111
5.4.2 dance and write, dance to re-write, re-read, dance and re-write	112
5.4.3 repeat, re-write, re-dance	113
5.4.4 follow the texts and sound	114
5.5 bodystories	115
5.5.1 legible bodies	116
5.5.2 inscribed bodies	117
5.6 embodied gesture	120
5.7 interactivity in performance	124
5.8 practices of attentional alacrity	125
5.9 conclusions	129
<b>Chapter 6: touching</b>	131
6.1 background	131
6.2 choreographic processes	133
6.2.1 set danced material	134
6.2.2 acts of translation	136
6.2.3 timing	139
6.2.4 placing	139
6.3 pilot trials	140
6.3.1 participant feedback	143
6.4 practices of tactual acuity	148
6.4.1 tactile manoeuvres	148
6.4.2 intricate tactile sensitivity	152

6.5	Where the Dance Is	155
6.6	tangible acts: touch in performance	158
6.7	conclusions	162
<b>Chapter 7: concluding</b>		164
7.1	reviewing the research journey and outcomes	164
7.2	reflections	166
7.3	continuing	169
<b>Bibliography</b>		171

## Appendices

Appendix 1	Consent form templates and information for participants	196
Appendix 2	DVD: video sequences of rehearsal & performances.	
	sequence 1 <i>danced process #1: talking while dancing</i> - dance improvisation	
	sequence 2 <i>danced process #1: talking while dancing</i> - accumulation	
	sequence 3 <i>re-membering(s)</i> : piano	
	sequence 4 <i>re-membering(s)</i> : Freya's web	
	sequence 5 <i>re-membering(s)</i> : Lucy's tomato	
	sequence 6 <i>InTensions</i> : artificial trauma - watching movie then dancing	
	sequence 7 <i>InTensions</i> : artificial trauma - reporting on the experience	
	sequence 8 <i>InTensions</i> : rails	
	sequence 9 <i>InTensions</i> : transformation improvisation	
	sequence 10 <i>Bodytext</i> : screen-grab of texts	
	sequence 11 <i>Bodytext</i> : opening section	
	sequence 12 <i>Bodytext</i> : final section	
	sequence 13 <i>haptic_dance</i> : danced version	
	sequence 14 <i>Traces of Places</i> : marking	
	sequence 15 <i>haptic_dance</i> : touch version (four views)	
	<i>re-membering(s)</i> . Performance at Dance Base	
	<i>Bodytext</i> . Performance at Critical Path	

## List of figures

fig.1: <i>danced process #1</i> . Sculpture Court, Edinburgh College of Art	30
fig.2: <i>danced process #1</i> . Sculpture Court, Edinburgh College of Art	31
fig.3: <i>danced process #1</i> . Sculpture Court, Edinburgh College of Art	32
fig 4: tactual reporting during rehearsals for <i>re-membering(s)</i>	52
fig 5: <i>re-membering(s)</i> . pools	57
fig 6: <i>re-membering(s)</i> . 5-7-11	58
fig 7: <i>re-membering(s)</i> . the piano	59
fig 8: <i>re-membering(s)</i> . piano	60
fig 9: <i>re-membering(s)</i> . Freya's web	62
fig 10: <i>re-membering(s)</i> . Steinvor everywhere	63
fig 11: <i>InTensions</i> . Rehearsals on the rails	74
fig 12: <i>InTensions</i> . gesture	79
fig 13: <i>InTensions</i> . listening through the feet	97
fig 14: <i>Bodytext</i> . Texts	104
fig 15: <i>Bodytext</i> . Screen-grab of texts	106
fig 16: <i>Bodytext</i> . Myron's view of the dancer	109
fig 17: <i>Bodytext</i> . Texts moving in response to dancer's movement	110
fig 18: <i>Bodytext</i> . Screen-grab of texts after they move and interact	111
fig 19: <i>Bodytext</i> . Screen-grab of texts after repeat, re-write, re-dance	114
fig 20: marking	137
fig 21: <i>haptic_dance</i> . touch version	141
fig 22: <i>haptic_dance</i> . touch version	143
fig 23: receiving and responding to directive touch	149
fig 24: <i>haptic_dance</i> . danced response to touch	150
fig 25: <i>haptic_dance</i> . pushing hands	151
fig 26: <i>haptic_dance</i> .	155



## Acknowledgements

My thanks go to my supervisors, Dr. Sophia Lycouris, Professor Andy Clark and Dr. Mark Wright, for sharing this journey and providing tremendous support, inspiration and insight. Thanks also to my referees Dora Frankel and Colin Bourne for backing my original proposal.

I could not have undertaken the practice without the artistic input and insights of my collaborators on the projects of the thesis – Suzanne Parry and *the other ensemble*, Skye Reynolds, Barney Strachan and Nik Paget-Tomlinson, Simon Biggs and Garth Paine. I extend my gratitude to the many dance artists and somatic practitioners who generously shared of their time, energy, knowledge and skills during this research, and to members of the CIRCLE research group. Many thanks to Ewan John, Maria Falconer, Roddy Simpson, Anne Milne, Mike Bowdidge and Martin Fox for their contribution and help with the photographic and video documentation.

This research was made possible through financial support from The Edinburgh Studentship, and through choreographic residencies and studio space provided by Dance Base, Edinburgh, Dance House, Glasgow, the Workroom, Glasgow, the Salisbury Centre, Edinburgh, Bundanon Artists' Trust, New South Wales, the VIPRe Lab (Virtual Interactive Performance Research Environment) at the University of Western Sydney, and Critical Path, Sydney.

I am indebted to my parents, for a lifetime of support and for all those evenings and weekends taking me to ballet classes, and to my partner and son for living the whole journey alongside me – the ups and the downs. Finally, thanks to our cat Bella, for helping me keep a sense of perspective by reminding me that draft theses also make good beds.

## Chapter 1: beginning

This practice-led research employs choreographic and somatic practices and their mediation through performance and/or technologies, to facilitate inquiry into notions of embodiment.

The point of departure and principal activity of the thesis is dancing to an understanding of embodiment. The use of the term *to*, rather than *toward*, indicates the aligning of the inquiry and the practice as equal partners in a duet; with the resonance and rhythms of understanding providing the score for dancing, and vice versa. Through reporting, speaking, stilling,<sup>1</sup> touching and mediation, dance's ontology is questioned and explored. The predominant themes of this research journey are action, attention, bodyscape, tensegrity, improvisation, interactivity, memory, language and gesture.

According to Tim Ingold, in the creative process there is “a simple rule of thumb: *to follow the materials*” (2010a, p.94, emphasis in original).<sup>2</sup> The primary materials here are movement, dance and the body – as modes of inquiry and sites of knowledge. Taking as a starting point the position that knowledge and mind may be embodied, and that the movement habits and stories that pattern bodyscape may in turn inform cognition, the choreographic practice seeks to illuminate, rather than explicate or demonstrate, these materials. Choreographic practices that are improvisatory or within interactive environments are of particular relevance to this thesis, because such approaches create situations that proactively engage dancers and interactors in ‘thinking-in-action’. Somatic and (en)active approaches to practice,

---

<sup>1</sup> The term ‘stilling’ indicates methods used in dance and meditation practices wherein one stays as still as possible, often in order to focus attention and awareness, or to find the movement in the stillness. Steve Paxton has explored this ‘small dance’ which he describes as “the reflexes that adjust everything to keep you upright” (2009). In my practice for this thesis, such approaches serve to inwardly focus attention to the phenomenal experience of the lived-body, and to explore imaginative processes.

<sup>2</sup> Drawing on Deleuze & Guattari (2004) Ingold proposes that *following* is to be understood in an active sense. “It is not blind. The hunter following a trail must remain ever alert to visual and other sensory cues in an ever-changing environment and must adjust his course accordingly. In following materials the practitioner does the same” (Ingold, 2010a, p.94).

performance and philosophy are investigated for their potential to develop or reveal embodied knowing. Technological mediation is employed to inform and augment perception and apprehension of the experience of dance, from the perspectives of choreographer, performer and observer.

## **1.1 practices and processes**

The research is practice-led. The approach is heuristic, iterative and itinerative<sup>3</sup> – “laying down a path in walking” (Varela et al., 1993, p.237). The research tools are embedded in and emergent from critically reflective choreographic and somatic practice. These include practices and processes of embodied reflection, improvisational awareness, inhibiting, inhabiting, attentional alacrity, and tactual acuity. These are supported by qualitative research methods and strategies including participant observation, semi-structured interviews, video and reflective journals, together with the literature review. The aims of this research are;

- to engage critically and contribute to ontologies of contemporary dance and choreography through reflective praxis.
- investigate the potential of dance and choreographic practices, somatic practices, philosophical approaches and technological mediation, to facilitate apprehension of embodiment.
- develop choreographic methods in order to identify and make tangible aspects of the subjective experience of movement, and to expand the boundaries between action, perception and cognition in both dancer and audience.
- deepen understanding of how experience, training and kinaesthetic memories pattern bodyscape, and the possibility that such patterns may be apprehended, interpreted or transferred.
- question whether knowledge and meaning can be created or apprehended through the body and movement.

---

<sup>3</sup> The term is used by Ingold to emphasise the dynamic and embodied nature of the research journey. For Ingold (himself drawing on Deleuze & Guattari, 2004) creativity is an “ongoing generative movement that is at once itinerant, improvisatory and rhythmic” (Ingold, 2010a, p.97).

This practice-led process is initiated by a performance work, *danced process #1*, which aims to problem-find through problem-solving. Steven Scrivener proposes that the problem solving Ph.D. process is closely related to that characterised in Schön's theory of reflective practice in which the reflective practitioner "does not keep means and ends separate but defines them interactively as he frames a problematic situation" (Schön, 1983, p.68). "It is this entire process of reflection-in-action which is central to the 'art' by which practitioners deal with situations of uncertainty, instability, uniqueness, and value conflict" (Scrivener, 2000). Throughout the praxis, choreography and concepts continually evolve from and with the other. For McKechnie and Stevens, "Dance epitomises the challenge for the temporal arts in documenting, describing, quantifying and explaining unspoken knowledge" (2009, p.84). One means I have chosen to meet this challenge is through collaboration with artists from other disciplines. I have always been interested in the surprising territory that emerges where several forms, cultures or media meet or merge. Border crossing often illuminates or betrays the heart of the matter.<sup>4</sup> The interdisciplinary and collaborative nature of the research journey has facilitated the identification of certain new paths and highlighted connections between them.

The writing of the thesis has become a method in itself, another means to apprehend and give body to knowledge accrued through the practice. Where work has been created in collaboration, I acknowledge the influence of the other artists or their media on my work, and outline techniques they have used, but for the context of this thesis I separate out my own choreographic and somatic perspectives, techniques, aims and outcomes. These outcomes include the conceptual and choreographic development of a number of dance-based performance works which engage notions of embodiment, and their mediation and expression employing theatrical and technological interfaces.

---

<sup>4</sup> The ethos for this approach traces back to the interdisciplinary exchanges initiated in the 1950s at Black Mountain College by artists and scientists such as Merce Cunningham, John Cage, Robert Rauschenberg, Kenneth Snelson and Buckminster Fuller. Founded in 1933 and closed in 1957, Black Mountain College was an experimental liberal arts college. In 1952 Cage, Cunningham and Rauschenberg staged an untitled work (often referred to as *Theatre Piece*) at Black Mountain College which is generally regarded as a forerunner to the Happenings (Copeland, 2004, p.23).

## 1.2 a note on terminology

The interdisciplinary nature of this inquiry means that I derive inspiration and information from a number of different traditions and disciplines. These include; dance and performance studies, somatics, cognitive science, philosophy, cultural studies and informatics. As a consequence, there may be ‘leakage’ in understandings of terminology between these disciplines. Terms such as dance, choreography, somatic, enactive, embodiment and mind all resist simple definition and assume different meanings within different disciplines. Here I briefly clarify my understanding and use of some of these terms, which will be expanded upon during the course of the thesis.

At the most basic level “choreography is the making of dance” (Butterworth & Wildschut, 2009, p.1) and fundamentally I use the term to mean just that. For André Lepecki, choreo/graphy is “a technology that creates a body disciplined to move according to the commands of writing” (2006, p.6).<sup>5</sup> Here he alludes to the ancient Greek etymological roots of the word, *Choreia* – a circle dance, and *graphie* – writing. The relationship between dance and language – written, spoken and embodied – is explored in chapter 5. The term *dance* refers to any poetic engagement with movement, with a generous embrace for what may constitute poetics.

*Body* is the material stuff of the organism. The stand I take in this thesis is a non-dualist perspective on body and mind, which presumes that body is ‘emminded’ and mind is embodied. To reinforce this position I sometimes use the term *bodymind*. The term *bodyscape* indicates bodymind as both terrain and traveller, and incorporates aspects of what may be conceptually distinguished as *body image* and *body schema*. These two terms and current debate surrounding them are addressed in Chapter 4, together with the concept of tensegrity schema. *Tensegrity* refers to the tensional integrity that balances structural forces of compression and tension.<sup>6</sup>

---

<sup>5</sup> Lepecki identifies the first version of the word as *Orchesographie*, the title of Thoinot Arbeau’s 1589 dance manual, literally meaning the writing of dance (2006, p.7).

<sup>6</sup> Buckminster Fuller who coined the term gives this definition; “The word ‘tensegrity’ is an invention: a contraction of ‘tensional integrity’. Tensegrity describes a structural-relationship

My use of the term *embodiment* derives theoretical flavour from dance and performance studies, phenomenology, somaesthetics and cognitive science, to approach a description of *mind* that is embodied, but also social, situated and distributed, dynamic and extended. The terms embodiment and mind are considered from somatic and (en)active perspectives, which emphasise the primacy of movement and the body; *somatic* indicates the role of and focus on non-dualist practical and analytical body centred approaches, while *(en)active* indicates corporeal and movement based approaches to mind. The bracketed (en) indicates reference to Varela et al. (1993) without specific allegiance to that approach. From the postmodern and post-structuralist perspective, the term *self* becomes problematic. The concept of selfhood is already extensively theorised and is not the focus of my research, so the term is used in a fairly quotidian sense to indicate the individual as differentiated from the collective and as locus of sentience and intention. However, at times when it seems appropriate to emphasise the fluid and multiple aspects of selfhood, I refer to *selves*. I use the term *technology* in the broadest sense to embrace any tool that extends organic capacity, incorporating the Foucauldian notion of the apparatus or *dispositif* – the relational systems between elements of social, structural and institutional power and ideas (Foucault, 1980).<sup>7</sup> *Mediation* is considered in terms of the media or technologies themselves, and in the realm of ‘techniques’ and translation.<sup>8</sup>

---

principle in which structural shape is guaranteed by the finitely closed, comprehensively continuous, tensional behaviors of the system and not by the discontinuous and exclusively local compressional member behaviors. Tensegrity provides the ability to yield increasingly without ultimately breaking or coming asunder” (Fuller, 1997).

<sup>7</sup> Giorgio Agamben offers a definition of the apparatus; “I shall call an apparatus literally anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behavior, opinions, or discourses of living beings. Not only, therefore, prisons, madhouses, the panopticon, schools, confessions, factories, disciplines, juridical measures, and so forth (whose connection with power is in a certain sense evident), but also the pen, writing, literature, philosophy, agriculture, cigarettes, navigation, computers, cellular telephones, and – why not – language itself, which is perhaps the most ancient of apparatuses – one in which thousands and thousands of years ago a primate inadvertently let himself be captured, probably without realizing the consequences that he was about to face” (Agamben, 2009, p.14).

<sup>8</sup> Bruno Latour proposes four meanings for mediation; *translation* – “displacement, drift, invention, mediation, the creation of a link that did not exist before and that to some degree modifies two elements or agents” (1994, p.32), *composition* – “action is a property of associated entities” (ibid, p.35), *reversibility* of blackboxing, and *delegation*. *Techniques* “are what happens to tools and nonhuman actants when processed through an organization that extracts, recombines, and

### **1.3 contextual skeleton**

The context of the research is described as a skeleton rather than a framework, to emphasise a relationship to the praxis that is dynamic and intrinsic to the structure and flow of concepts, as living bone and connective tissues are to the body.

#### **1.3.1 theoretical approaches**

The theoretical body of the work is informed by ideas from phenomenological and postmodern theories of corporeality and creativity including the phenomenology of Sheets-Johnstone and Merleau-Ponty, the post-phenomenology of Ihde, the pragmatic and practical somaesthetic approach of Shusterman which embraces western and eastern body-oriented practices, and theories of embodiment within the cognitive sciences and affiliated disciplines, including the work of Clark, Gallagher, Lakoff and Johnson, and Varela. Post-structuralist perspectives permeate the praxis, raising themes of multiplicity, relationality, iteration, fluidity and instability. These themes and perspectives are prevalent in current dance and performance theory. The ground they present for critical reflection on dance practices has been extensively cultivated by dance and performance scholars (e.g. Lepecki, Foster, Banes, Burt, Copeland, Franko, Schechner) and undoubtedly informs my thinking in myriad ways. However, my research is not led by these ideas; rather they present relevant contexts for critical engagement and evaluation of the practice-led research.

#### **1.3.2 choreographic approaches**

The scope of the choreographic works discussed or created in this research refers primarily to the branch of Western experimental contemporary dance which spans the modernist work of Cunningham, and postmodern dance practices including and subsequent to the emergence of the Judson Dance Theater (JDT) vanguard.<sup>9</sup> I focus

---

socializes them” (ibid, p.61).

<sup>9</sup> Between 1962-64, the New York based artists’ collective, JDT, and later The Grand Union, was a meeting-point and melting-pot for seminal artists such as Trisha Brown, Yvonne Rainer, Robert Morris, Robert Rauschenberg, Meredith Monk, David Gordon, Lucinda Childs, Steve Paxton, Simone Forti and Deborah Hay. The programmes they presented were unpredictable, at times bizarre and chaotic, but always attempts to redefine conventions of what was accepted as dance, art and performance. Many of the dancers experimented and practised together at Robert Dunn’s

on this period because it marks a paradigm shift in the engagement of dance as a mode of critically reflective and creative discourse as both an independent and interdisciplinary medium, and is the most significant influence on my own practice.

The works of the JDT were characterised by their experimentation with pedestrian and task-based movement and improvisation, their use of ‘found’ objects and movements, and the eschewal of the virtuosic, codified stylisation of many ballet and modern dance techniques. “The Cagean idea that offered an alternative to the masterpiece was operating very strongly” (Rainer, 1974, p.7). A distinctive feature of this and subsequent generations of dance artists is their discursive attitude and approach to choreography, engaging ideas from philosophy, performance, cultural and literary theory, creating and cracking open questions concerning the epistemological and ontological nature and value of dance and performance, and promoting new theory through choreographic praxis. Many of the dance artists who influence my research also engage somatics and/or technologies in their work.<sup>10</sup>

### 1.3.3 somatic approaches

The term *Somatics* was coined by the philosopher and Feldenkrais practitioner, Thomas Hanna, originally referring to an exercise programme he developed.<sup>11</sup> The term (from the Greek *sōma*, meaning body) is now used to refer more generally to

---

composition classes in New York and at Anna Halprin’s Dancer’s Workshop in the San Francisco Bay area. Dunn and Halprin encouraged related but distinct approaches to composition and improvisation. Dunn’s classes, drawing on John Cage’s work, explored structural devices for rule-based composition. Halprin, influenced by Gestalt and Bio-energetics, was more interested in improvisations that nurtured organic expressivity and sought to reveal the inner subconscious. She was, like many dancers at that time, inspired by the dance educationalist, Margaret H’Doubler and the writings of Mabel Todd. This period has been extensively researched and documented, notably by Sally Banes (1998, 1987, 1993, 1994) and Ramsay Burt (2006). There is also a body of writings by many of the dance-artists, such as Kenneth King (2003), Yvonne Rainer (1974, 1999), Deborah Hay (2000).

<sup>10</sup> The current ‘dance-tech’ or digital dance movement includes work by choreographers such as Merce Cunningham, William Forsythe, Wayne McGregor, Bill T. Jones, Trisha Brown, Troika Ranch, Igloo, kondition pluriel, Hellen Sky, Thecla Schiphorst and Marlon Barrios Solano. Key theorists include Massumi (2002), Birringer, (1998, 2008), Broadhurst (2006, 2009), Dixon (2006), Kozel (2008), deLahunta.

<sup>11</sup> Somatics aims to effect change in the muscular system via the central nervous system, through exercising conscious control. Hanna’s concept of sensory-motor amnesia, a “habituated state of forgetfulness” (1988, p.xiii) of certain muscular feelings and control, draws on the educational approaches to movement and body-use of the Feldenkrais Method and the Alexander Technique.



discourses and approaches to movement and body use that aim toward the development of self-awareness of movement patterns, tendencies and habits, and a more effective “use of the self” (Alexander, 1985). As such these approaches often tend to be described as ‘educational’ rather than, or as well as, ‘therapeutic’; the practitioner works *with* the client rather than *for*. Richard Shusterman proposes a disciplinary philosophical approach which he terms *somaesthetics*,

the critical, meliorative study of the experience and the use of one’s body as a locus of sensory-aesthetic appreciation (aisthesis) and creative self-fashioning ... devoted to the knowledge, discourses and disciplines that structure such somatic care or can improve it. (2008, p.19)

These forms of knowledge, discourses and disciplines encompass a plethora of methods, techniques and principles such as the Alexander Technique, the Feldenkrais Method, Rolfing, Continuum, Bartenieff Fundamentals, Authentic Movement, Yoga, Mindful Awareness meditation practices, and Body-Mind Centering.

It is noteworthy that many somatic movement practices are named for their founder (as are many dance techniques), and specific methods are increasingly trademarked and copyrighted. Each somatic method that bears strong links to an individual also carries elements of the chronological and cultural circumstances of its evolution. Many methods designate learning pathways which must be followed in order to access and gain permission to disseminate the knowledge in the specific form developed by the founder, or in a later modality developed by a follower. In this thesis I do not focus on any one specific approach. This is for a number of reasons; firstly, throughout the research I tend towards themes of complexity, interrelationality and contingency. At each juncture of the choreographic inquiry I draw on a range of somatic and choreographic approaches, each chosen for their perceived suitability as tools and techniques for the particular task in hand. I also emphasise that while somatic practices present tools *for* performance practice, performance itself may be considered as a somatic practice. The aim here is not to determine the efficacy of one approach above another in any absolute sense.

Secondly, many somatic and dance methods reflect a lifetime of work on the part of the founder. The practice leading this research is my own, reflecting my lifetime inquiry. Later in this chapter I outline how I situate myself in the field, and the influences, teachers and collaborators on whose shoulders I stand.

#### **1.3.4 tools of mediation**

The engagement of technologies of mediation for this research does not seek to explain or demonstrate aspects of embodiment, nor to replicate human form or movement. Rather the aim is to interface with and illuminate aspects of the phenomenal experience of dancing for both dancer and audience. Marshall McLuhan suggests that technologies are means of translating one kind of knowledge into another mode, “[t]ranslation is thus a ‘spelling-out’ of forms of knowing ... All media are active metaphors in their power to translate experience into new forms” (2001, pp.62-3). Over the course of the research I have explored a range of technologies including some ‘high tech’ and digital, such as video, motion-capture, GPS, voice-recognition and haptics, and others ‘lo-tech’ such as stylophones and aluminium tape, paper and pencil. The rationale and result of engaging each of these technologies is discussed in the context of the work for which they were employed. The most powerful of human technologies, that of language, is employed throughout.<sup>12</sup>

#### **1.4 thesis outline**

The written element of the thesis is directed by the practice. Each chapter centres around the processes and practices engaged for the making of a dance-work, offers a description of the performance, and critically reflects on the concepts behind and emergent from the practice. For the context of the thesis, I describe many of the inspirations, imagery and ideas that contribute to the development of works, but

---

<sup>12</sup> McLuhan continues; “The spoken word was the first technology by which man was able to let go of his environment in order to grasp it a new way. ... Words are complex systems of metaphors and symbols that translate experience into our uttered or outered senses. They are a technology of explicitness. By means of translation of immediate sense experience into vocal symbols the entire world can be evoked and retrieved at any instant” (ibid, p.63).

these should not be read as implying that the dances are ‘about’ these aspects – I would not normally divulge so much background information to an audience. A number of photographic images are incorporated into the thesis, and an appended DVD contains video sequences which offer some insights into the work described. I have approached this practice-led research as a dance artist, not as a dance filmmaker, and the video extracts should not be viewed as other than attempts to record some moments of the creative processes in rehearsal or performance. They do not ‘show the pieces’. Many works are improvisations; the selected video clips therefore only indicate one set of choices made by performers and do not represent absolute artistic decisions.

Chapter 2 centres around *danced process #1*, my first piece of practice for the thesis, which I devised as a means to engage practically with concepts of embodied mind and cognition. The principal activity of talking-while-dancing presents the dancer with a cognitive challenge by dividing her attention. This choreographic process is informed by dance improvisation practices and by Trisha Brown’s *Accumulation* works. I discuss the term embodiment and reflect on the implications of considering that the muscle is a mind. I consider improvisation in dance in terms of ‘thinking in movement’, and the use of talking-while-dancing as both a choreographic tool and a practice of improvisational awareness. A key question emergent from *danced process-#1* is, what happens to gesture-for-speaking when the hands are engaged in dancing? I outline the current field of gesture research and the concept that gesture relates to both communication and cognition.

Chapter 3 gives an account of the making and performing of *re-membering(s)*. This performance work, made in collaboration with composer Suzanne Parry, employs aleatoric approaches to create compositional spaces and situations that engage the performers in problem solving activities. *re-membering(s)* emphasises a multi-layered exploration of time, attention, and memory, focusing on interfaces and relationships between music and dance, between performers, and between performer and audience, engaging them all in an enactive performance, or what Umberto Eco

terms the *Open Work* (1989). The primary themes are inter-modal reporting on experience and remembering (and physically re-member-ing). Speech is employed in the form of recorded real-time verbal reports of the dancers' phenomenal experiences of dancing, evoking themes of time and memory, while gesture-for-speaking is engaged as a choreographic tool. I discuss somatic practices of inhibition that may facilitate the capacity to cope in the complex enactive performance environment of the open work.

In Chapter 4 I discuss *InTensions*, a performance work by myself as choreographer in collaboration with performer Skye Reynolds and sound artists Barney Strachan and Nik Paget-Tomlinson. The work explores themes of tension and tensegrity in relation to anatomical structures, and the potential traumatic impact of imbalances. A central concern informing the choreographic process is that postural and movement habits pattern bodyscape, and that this patterning in turn informs navigation of a broader body-mind-environment meshwork, which is conceptualised as a tensegrity schema. I propose that bodyscape and tensegrity schema are experienced in terms of multiple, simultaneous layers of awareness. *InTensions* engages compositional and mediation strategies to create situations which might disrupt, stress or reveal this -scape and -schema. Practices of embodied reflection are discussed, which offer practical and conceptual tools for developing the perceptual alertness to negotiate these multiple, simultaneous layers. The main choreographic activities include imagining, improvisation, transformation, and the negotiation of an interactive performance environment.

Chapter 5 outlines the process and performance, and the concepts behind and emergent from *Bodytext*, an interactive installation and performance artwork made in collaboration with visual artist Simon Biggs and with audio by composer Garth Paine. *Bodytext* involves speech, reading, writing and the body. The dancer's movement and speech interact recursively within an augmented computer controlled environment employing real-time motion tracking, voice recognition, interpretive grammar systems, projection, and audio-synthesis. Her movement causes the texts to

interact, recombine with and rewrite one another. *Bodytext* questions and seeks insight into the relations between kinaesthetic experience, mind, memory, agency and language. I interrogate notions of scripted bodies and bodystories, and propose that language informs, fixes and scripts the movement and tension patterns of bodyscape, and that embodied gesture may play a role in this scripting. I discuss interactive performance environments, and propose that coping within such environments both requires and constitutes practices of attentional alacrity.

Chapter 6 focuses on *haptic\_dance*, a dance-work that is delivered by touch – viewed haptically. The choreographic process seeks to translate the phenomenal experience of dancing into touch. This translation process involves analysis, interpretation, mediation and tactual reporting of the dancer’s experience, engaging practices of tactual acuity. The concept of touching the audience in order to deliver the dance raises issues concerning professional and ethical codes of practice. I consider these issues, together with the implications for dance’s ontology of shifting the audience’s attention from visual to tactual.

I began by describing the practice-led approach to this research as heuristic, iterative and itinerative. The final chapter concludes the itinerations of this thesis and paves the way for the next steps.

### **1.5 locating myself in the field**

My dance and choreographic practice is rooted in classical ballet, infused with postmodern influences, and informed by somatic approaches. The two dance artists who have most deeply inspired my work are Trisha Brown and Merce Cunningham. Some of the other performance work, artists and companies that inspire or inform my practice in myriad ways include (in no particular order) Yvonne Rainer, Robert Wilson, Meredith Monk, William Forsythe, Michael Clark, Wim Vanderkeybus, Anna Theresa de Keersmaker, Elizabeth Streb, Jerome Bel, Richard Alston, Siobhan Davies, Second Stride, Complicite, Footsbarn, Miles Davis, David Bowie, Francis Bacon and many others.

My early dance training was in classical ballet with ex-Ballet Rambert dancer Shirley Rees-Edwards and then at the Royal Ballet School in London with Hope Keelan and Valerie Adams, graduating in 1983 from the Teacher's Training Course. While studying I regularly watched the Royal Ballet Company in class, rehearsals and performance, and contemporary performances by London Contemporary Dance Theatre and Ballet Rambert<sup>13</sup>. I was inspired by the independent dance-artists of the New Dance movement such as Rosemary Butcher, Gaby Agis, Sue McLennan, Julyen Hamilton, Kirstie Simpson and Maedée Duprès, many of whom incorporated somatic approaches into their dance practice as they sought to develop alternatives to increasingly codified modernist techniques. After graduating, I performed with Scottish Ballet, Mantis Dance Company<sup>14</sup> and then with Rambert Dance Company under the direction of Richard Alston. Rambert's repertoire was at that time mainly within the postmodern lineage with an emphasis on interdisciplinary collaborations.<sup>15</sup> I performed in work by Siobhan Davies, Michael Clark, Ashley Page, Richard Alston, Merce Cunningham, David Gordon and Trisha Brown among others, working with each choreographer in person when they either re-staged or made new work for the company. The influence of each of these choreographers can be seen to some degree in my work. Daily classes were mainly in Cunningham technique; this linear, logical and non-hierarchical approach to movement continues to be a significant influence in my own practice. In the early 1990s I worked with Paris-based cie Philippe Genty, with whom I performed in *Dérives* and *Désirs Paradés*, visual theatre works incorporating objects, materials and marionettes. Our company training included techniques from Jacques Lecoq which propose object and movement based approaches to discovering and creating character. In 1997 I participated in Digital Dance at Riverside Studios in London and performed within

---

<sup>13</sup> Renamed as Rambert Dance Company in 1986

<sup>14</sup> Mantis' repertoire included works by American choreographers Risa Jaraslow and Tim Buckley, and by director Micha Bergese. Bergese's work at that time was strongly influenced by his experience of filming *Company of Wolves*. His work *Stage 7* situated the dancers in a 'movie-set-on-stage', while *Mouth of the Night* had set-design by film-maker Derek Jarman and music by Psychic TV. For me, these were formative experiences of different working methods and ways of conceiving performance.

<sup>15</sup> Including with visual artists and composers such as Bruce McLean, Anish Kapoor, John Hoyland, Howard Hodgkin, Harrison Birtwhistle and Nigel Osborne.

an interactive installation, *Halo*, by visual artist Simon Biggs. This experience was my introduction to another factor that influences and informs my current practice – that of technological mediation and its potential to augment or de-stabilise the sense of perception and self.

My engagement with somatic movement approaches began in the early 1980s when I practised T'ai Chi Ch'uan. In the 1990s I explored the Bodyweather work of Butoh dancer Min Tanaka<sup>16</sup>, Iyengar yoga with ex-Bejart dancer Cecile Bara, and Ashtanga yoga with John Scott. I studied Indian Head Massage with Narendra Mehta, Holistic Massage with Sara Thomas, and the Eyerman Technique of movement-based bodywork. This work is a synthesis of approaches from Feldenkrais, Polarity Therapy, Yoga and Massage, informed by dance – Ken Eyerman was resident masseur to London Contemporary Dance Theatre for many years – and is a major influence on my own bodywork practice. Immediately prior to this Ph.D. I spent a year engaging in Authentic Movement practice mentored by Fran Lavendel which directly informed my initial approaches to this thesis. During the course of this research I have engaged a range of somatic practices through individual practice, one-to-one sessions, group research or workshops. These include workshops in Bartenieff Fundamentals and Laban Movement Analysis led by Kedzie Penfield and Peggy Hackney; Skinner Releasing led by Gaby Agis; Butoh movement and Whirling as part of a creative project with choreographer and body-psychotherapist Laura Steckler; individual sessions of Thai Massage, Rolfing, Alexander Technique, Holistic Massage and Feldenkrais work.

I have also received treatments outwith the research envelope, which nonetheless inform my praxis. In 2010 for example, I sustained a bad fall and received craniosacral therapy as part of the recuperation. This work affects the whole person, not just the symptom, and will undoubtedly have influenced my thinking. However I do not include it within the research, not least because my focus in receiving it was

---

<sup>16</sup> In Paris and Annecy, with Fabienne Courmont who lived and studied on Min Tanaka's Tokyo based farm.

entirely personal. I also do voluntary massage work for a charity who provide support and medical care for victims of extreme trauma.<sup>17</sup> I choose not to include this work or clients as case studies, but it would be hard to separate out the profound effect it has on my approach to the research, or in informing concepts such as bodyscape and tensegrity schema. All of these somatic or therapeutic practices affect and change the researcher, and therefore the research, in subtle ways. The shifts in self-awareness and in movement patterning brought about by each somatic exploration are difficult to quantify or to objectify (if indeed they need to be), but do highlight the central subjective role of the researcher. Interweaving practice, concepts and contexts into and across the theoretical, choreographic, somatic and mediation approaches has facilitated the identification of certain new paths and highlighted connections between them. My praxis aims to explore the consistency of and follows the directions indicated by the in-between.

## **1.6 a note on ethics**

Some of this research involved interdisciplinary and collaborative practices, working with dancers and artists from other disciplines. Prior to the research and development periods for *re-membering(s)*, *InTensions* and *haptic\_dance*, the dancers and other artists involved were given information about the projects and the relationship to my practice-led Ph.D. research. They signed consent forms concerning the use of video, interview material and reflective journals. It was acknowledged that because the research was being undertaken as part of public facing residencies and performances, they as artists will be credited by name. Any comments from discussion, interview or notebooks used in the written thesis are kept anonymous wherever possible, except in cases when it is appropriate that they are attributed. *Bodytext* was a collaborative project, but the other two artists involved were not specifically contributing to my research. They were sent a copy of the chapter I wrote concerning this work and asked to confirm that their own work was correctly represented. For *haptic\_dance* I completed an ethics assessment according to Edinburgh College of Art's guidelines, and produced a consent form and information sheet for participants. (see Appendix 1:

---

<sup>17</sup> Freedom from Torture: Medical Foundation for the care of Victims of Torture



participant information and consent form templates)<sup>18</sup>.

I also feel it necessary to state my ethical position concerning knowledge derived from experimentation on animals. The interdisciplinary nature of this research has led me to fields such as neuroscience and cognitive psychology where experimentation on animals, or the use of data derived from such experimentation, is commonly an aspect of practice. I personally feel that invasive experimental procedures on animals are not acceptable nor necessary methodologies for any research, and certainly not mine. However, I acknowledge that it is not possible to unravel the multiplicity of methods through which knowledge is derived, that scientific advances made using such methods have undoubtedly informed my thinking, and that some of the sources I cite will have employed animal experimentation. My hope however, is that the perceived need to use animals in scientific research can be significantly reduced, and ultimately replaced by alternatives<sup>19</sup> based on human experience and technological developments.

---

<sup>18</sup> On these forms the research project is referred to using the original title for the Edinburgh studentship, *Dancing With a Philosopher*.

<sup>19</sup> This may be achieved through the work of organisations such as FRAME, BUAV and the Dr. Hadwen Trust.

## **Chapter 2: thinking**

### **The muscle is a mind? *danced process #1***

#### **2.1 background**

*danced process #1* is a dance performance comprising set and improvised dance material, to be performed by a solo dancer situated among the public with whom she is talking-while-dancing. This performative device was chosen in order to create a cognitively challenging choreographic space and situation. The rationale behind this is that the immediacy of dance improvisation combined with a scaffold of structured choreographic material, in a setting whereby the dancer is “embedded-in, and actively exploiting, the local environment” (Clark, 1999, p.3), presents a context for an exploration of “thinking in movement” (Sheets-Johnstone, 2009). *danced process #1* raises questions about the notion of embodiment, the nature of performance, the role of gesture, and the difficulties for both performer and audience inherent in the cognitive multi-tasking required to engage in the process. This chapter outlines the context and creation of this danced process, how it informs and initiates this danced inquiry into embodiment, and how it catalyses the next stages of the research.

*danced process #1* was presented in the Sculpture Court at Edinburgh College of Art in November 2008 as part of *DOCument*, a group exhibition by M.Phil./Ph.D. students.

#### **2.2 choreographic processes**

The aim behind *danced process #1* was to create a practical situation for critical reflection on what might be meant by the terms ‘embodied mind’ and ‘embodied cognition’. I wished to establish a real-time problem solving activity to engage or reveal embodied, embedded mind thinking in movement. The choreographic process involved developing two distinct danced tasks employing either set or improvised dance material. Permutations of these two tasks were executed while simultaneously sustaining a conversation with the audience. The improvised dance task involved

inwardly focusing attention toward felt impulses or ‘urges’ to move, and allowing movement to follow feelings. In this stream-of-consciousness improvisation, I deliberately did not apply certain choreographic constraints which might have determined stylistic form or lent definition to the dance, although the location of the performance created its own set of environmental and time parameters. I allowed myself to ‘noodle’ – a term often employed by improvising musicians and composers to describe getting stuck within a narrow range of pitch, harmony and melodic patterns – which meant the dance often tended toward a rather meandering stream of movements, and clusters of repeated patterns, habits and preferences.

#### **REFER TO VIDEO SEQUENCE 1**

#### ***DANCED PROCESS #1: TALKING WHILE DANCING - IMPROVISATION***

The set material for *danced process #1* was based on a recent solo work of mine, *just dancing (about?)*.<sup>20</sup> The choreographic material derived from many hours of noodling improvisations, inwardly focusing attention in order to identify and then ‘harvest’ any movement signatures, patterns and habits. The harvested material was composed into an accumulating dance phrase, constructing a framework of set movement material. This accumulation phrase references Trisha Brown’s series of *Accumulation* pieces.<sup>21</sup> Begun in 1966 these pieces were constructed using a method whereby one movement is performed, then repeated with a second movement added. The first movement is then re-performed, followed by the second, then adding a third, and so on. Brown’s *Accumulation* has seen many iterations, each adding layers of material and complexity to the task for the performer. In 1973 *Accumulation* became *Accumulation with Talking*, and by 1979 *Accumulation with Talking plus Water Motor*, in which the accumulated sequence was spliced with faster fluid movement from a different piece *Water Motor*, with two separate narratives also

---

<sup>20</sup> This earlier iteration of the solo, *just dancing (about?)* was developed through a Choreographic Lab supported by Dance House, Glasgow, and presented at Heads Up @ Dance Base as part of Edinburgh Festival Fringe 2008. The mentoring in Authentic Movement with Fran Lavendel was supported by Professional Development funding from the Scottish Arts Council.

<sup>21</sup> I included an iconic outward rotation of the thumb in my own accumulation phrase, as a hint to this reference.

being simultaneously spoken by Brown. In 1996 she presented *Accumulation with Talking plus Watermotor for Stephen*, adding a homage to choreographer Stephen Petronio into the existent pieces.

## **REFER TO VIDEO SEQUENCE 2**

### **DANCED PROCESS #1: TALKING WHILE DANCING - ACCUMULATION**

The opportunity to exhibit in *DOCument* came at very short notice, so I did not have time to recruit other dancers or to create new choreographic material. Working solo and with this pre-existing material from *just dancing (about?)* meant that I could make and trial something ‘fast and dirty’. In addition to being performed as a set sequence, the accumulation material was also sometimes used in the performance as a scaffold for the improvisation, providing anchor points for the unfolding improvised material. The task of talking-while-dancing was initially added as a means to embed the dance among the public and in the environment. Part of the rationale behind *danced process #1* was that the piece could only unfold as a performance because of the presence and intervention of the audience, so it did not require extensive rehearsal in private. In similar manner to Rainer’s *Continuous Project - Altered Daily* (1970) it incorporated “‘real’ behaviour, i.e., rehearsal behaviour transposed to performance” (Rainer, 1974, p.128).

### **2.3 performance**

There was deliberately no fixed or framed performance area (although the positioning of sculptures and installations by the other artists, and the spring of the wooden floor determined some limits), and the processes occurred within time-windows, although any single event had no clearly delineated start or finish. The information for *danced process #1* was displayed near the main area in which I danced;

#### **DANCED PROCESS #1**

**I WANT TO DANCE AND TALK ... TO YOU. PLEASE TALK TO ME**



**fig.1: *danced process #1*. Sculpture Court, Edinburgh College of Art**

Photo: John K. McGregor, Edinburgh College of Art

This information was kept deliberately brief, so that in order to get any further information or insight into what it meant or the rationale behind the work, people had an incentive to ask me questions and therefore initiate discussion. I did not define this work as a performance as I wished to emphasise it as being a process. During the course of the presentations however, I noticed a shift in my own assessment of whether this event constituted process or performance. This was in part due to the architecture of the Sculpture Court; there are balconies running all around the upper floor and many people chose to observe the work from this perspective and therefore did not engage in conversation. I did not feel this necessitated a change in my objectives or my projection, but my relationship to the nature, aims and outcomes of this work changed through taking into consideration the differing experiences of the audience depending on where they were situated.



**fig.2: danced process #1. Sculpture Court, Edinburgh College of Art**

Photo: John K. McGregor, Edinburgh College of Art

In the execution of the process, my primary aim was either to sustain the flow of the stream-of-consciousness improvisation, or to maintain the constancy and clarity of execution of the accumulated material, while talking. In both these cases I endeavoured to keep the dance tasks independent from the talking, so that the dance did not become associative or representative of the speech, or vice versa. The intention behind the talking was to engage in ordinary, quotidian conversation, rather than to verbalise the stream-of-consciousness or to narrate a text. I found it extremely difficult to sustain attention to both movement and talking, and much simpler to talk *to* people rather than *with* them. Listening to and responding to questions usually saw a slowing or stilling of the dance or my losing the thread of conversation, as more of my attention was required for thinking and articulating in verbal language. At other times my attention was drawn into the conversation and the danced improvisation did become influenced by the words. This raised the possibility that the movement could be considered as ‘expanded gesturing’. A significant moment occurred when one audience group were leaving; I had stopped dancing but continued talking as our



conversation wrapped up. My attention was drawn to the dancerly quality of my gestures-for-speaking, raising a number of questions – is gesture just about the hands or is it a whole body activity? does gesticulation constitute a small dance? what happens to gesture-for-speaking when the hands are engaged in dancing? what happens to dance improvisation when the bodily gestures are engaged in thinking-for-speaking? These questions guide some of the subsequent research.

Audience response was mixed. People were unsure how close they could approach, or what licence they had to move or speak. Some preferred to be seated and silently spectate. Others expressed a desire to move too, although generally not in overly dancerly ways, and seemed more able to engage in conversation once they were moving with me, feeling less inhibited in the role of participant rather than spectator. On one occasion several people began circling around me, walking, changing direction, and talking. Some people returned several times, becoming more at ease with the particularities of the situation and more relaxed in conversation. Some reported that the danced-process had raised their self-awareness of their own embodied thought processes. However, many people felt that the multi-tasking required of them was too complex, and that for them to watch and listen, and talk, and maybe move, divided their attention too much.



**fig.3: *danced process #1*. Sculpture Court, Edinburgh College of Art**

Photos: Mike Bowdidge

Through discussions with observers and audience it became apparent that the work provoked many questions about the nature of performance, the role of the audience, the role of movement in cognition, and the different types and patterns of movement which emerged in my dancing depending on which tasks I was attempting to undertake. Comments indicated that people felt my danced movements when I was talking-to-respond seemed to relate more clearly to what they perceived as a process of ‘thinking in movement’ than when I was talking-to-explain. My subjective awareness of those thinking in movement moments was of mind-as-flesh, – the kick of the right leg, yield of the left ribs, the tug in the spleen – skin and bones actively searching to articulate the lived experience.

#### **2.4 embodiment: the muscle is a mind?**

This question – the muscle is a mind? – derives from the title of Yvonne Rainer’s 1966 performance *The Mind is a Muscle*. Reversing the polarities of Rainer’s statement raises interesting questions about the substance, nature and agency of embodied mind. I am using the word ‘muscle’ in my question as a general tag to refer to all the tissues of the bodily organism. If one aim of *danced process #1* is to create a choreographic strategy and situation that might challenge or reveal something of embodied mind, I first need to unpack what might be meant by embodiment.

For some scholars, the embodied mind is literally computational, for others, it is metaphorically computational, and for others it is not computational at all; for some it is inherently an emerging phenomenon proper to certain forms of *living systems*, and for others it is not; for others, its study requires the use of certain methodologies such as the tools of dynamical systems theory, and for others it does not; for some, the living phenomenological bodily experience is essential, for others it is not, and so on. Basically, the situation is as if you pick your favourite feature of the core properties, bring them to the foreground, add your own theoretical flavour, stir with your own vintage, and you get your ‘embodiment’ *à la carte*. (Núñez & Freeman, 1999, p.57, emphasis in original)

Cognitive scientist Rafael Núñez and neurobiologist Walter Freeman here highlight the lack of consensus across disciplines as to what the term signifies. For this thesis I



am siding with views that the lived bodily experience is an essential ingredient – such as phenomenological approaches (e.g. Merleau-Ponty, Sheets-Johnstone), enactivist approaches (e.g. Varela et al., Noë) and many somatic and psychophysical practices which “refuse to divide body from mind in seeking the enlightened betterment of the body-mind of the whole person” (Shusterman, 2008, p.24) – and against dualism or views that cognition is brain bound (e.g. Adams & Aizawa, 2008). For Sheets-Johnstone, the term embodied is itself problematic because it evokes the possibility of a disembodied relationship, whether to mind, actions or agents. In her view, it is often used as “a lexical band-aid covering a three-hundred-fifty-year-old wound generated and kept suppurating by a schizoid metaphysics” (2009, p.215). By adopting a non-dualist stand I am assuming that bodymind is a synergy rather than a coalition, and the elements cannot be separated out.

In terms of the different tissues, organs and fluid systems of the human organism, while there are distinctive characteristics which delineate brain, skin or viscera for example, the boundaries tend to be ‘leaky’. In embryological development both skin and neural tissue are initially formed of the ectoderm, differentiating into skin and brain through repeated processes of involution and evolution as surfaces and tissues fold into, over and out of each other. Bodyworker Deanne Juhan proposes that because skin and brain develop from the same primitive cells, we can consider skin as “the outer surface of the brain, or [that] the brain is the deepest level of the skin” (1987, p.35). Michael Gershon’s research in neurogastroenterology (1999) focuses on the enteric nervous system – the second brain in the belly – and suggests that a gut feeling signals an aspect of intelligence.<sup>22</sup> Antonio Damasio’s Somatic Marker hypothesis (2006) equally stresses the importance of the emotions – and therefore the organs and hormones – for thinking, presenting a challenge to a prevalent view in Western medicine and philosophy that emotions impede rational thinking.

---

<sup>22</sup> In many Asian martial arts, medical and meditation practices, and in many approaches to dance and somatics, the region of the gut between the navel and the pubic bone (variously known as the *Hara*, *Dan Tian*, *Tan T’ien* or *Navel Chakra*) is “the center/source of readiness, balance, and reception, the place where action and meditation originate and are centered” (Schechner, 2003, p.349).

Connective tissue is also increasingly seen as playing a crucial role in bodymind functioning. Like neural and vascular webs, the myofascial web “so permeates the body as to be part of the immediate environment of every cell” (Myers, 2009, p.28). At the deepest level, dural connective tissue, encasing the central nervous system and the brain, is a system implicit in both structure and neural functioning (Kozel, 2007) and may therefore play a role in notions of bodily intelligence. Conceiving anatomies in terms of connective tissue also disturbs notions of absolute boundaries between brain and body.

Dancers often use terms such as ‘muscle intelligence’, ‘thinking bodies’ and ‘muscle memory’. Neuroscientist Patrick Haggard comments that “‘muscle memory’ ... has always seemed to me a really very tricky and misleading phrase, because of course memories aren’t in the muscles, memories are in the brain” (Mitchell, 2005). He suggests that dancers’ use of the term actually indicates proprioception; “that proprioceptive ‘trace’, if you like, in the brain is I think really what’s meant by this phrase ‘muscle memory’” (ibid). Proprioceptive traces in the brain are an essential ingredient to the lived experience of accessing memories.<sup>23</sup> However, it is difficult to imagine what kind of functioning human brain is not a part of a human body, and therefore what kind of a brain can access and make sense of proprioceptive traces *without* a body. Brain tissue is highly specialised, but it does not function in isolation, we are not brains in vats . Extending this image, we are also not bodies in vacuums; embodiment is not delimited to the flesh of the individual organism. What kind of functioning, organic human bodymind (brain and all) is *not* part of its environment? According to Bourdieu’s concept of the habitus, bodymind reflects both individual psychophysical patterning and sociocultural influences. Drawing on this and the ideas of such as Latour, Ihde, Clark and Hayles, I view embodiment as a state in interdependence within a complex, socially, culturally and technologically networked and mediated field. Varela et al. suggest that embodiment is essential to knowledge which “depends on being in a world that is inseparable from our bodies,

---

<sup>23</sup> I am referring here to the individual activity of remembering; memories can also of course be externalised, stored, distributed and accessed through databases, the printed word, memorial architecture etc.

our language, and our social history” (1993, p.149). For Bonnie Bainbridge Cohen “in order to embody ourselves, we need to know what is *not* ourselves ... what I would call balanced embodiment would include ‘This is the end of me; this is the beginning of something else’” (1993, p.63, emphasis in original). Establishing such boundaries is clearly useful for processes of de-differentiation, but they also tend to be leaky at the edges.

As an example of this, research by fluid dynamicists at MIT demonstrates that the swimming ability of fish such as blue-fin tuna is as much a product of their environment as the action of the fish’s body. The tunas’ highly evolved brains enable them to find, remember and harness specific currents and greatly increase their swimming power and agility. “The physical system whose functioning explains the prodigious swimming capacities is thus the fish-as-embedded in, and as actively exploiting, its local environment” (Clark, 1999, p.3). ‘Embodiment’ here comprises fish-*and*-water. Part of the rationale behind *danced process #1* was to create a choreographic environment with creative currents for the dancer to actively exploit.

## **2.5 attentional folds**

Susan Leigh Foster suggests that “The body is never only what we think it is (dancers pay attention to this difference)” (1995, p.4). This attention to attention lies at the heart of my inquiry into embodiment. Dancers may experience memory *as if* in the muscle *because* they pay attention to their remembering body. Many of the creative practices engaged in this thesis will explore different planes and foci of attention, and emphasise an attitude of perceptual alertness.

*danced process #1* draws on practices which inwardly focus, or involute, attention. Bodily structures and experience intertwine with the world through the folds of the sensory surfaces. At the start of the 20th-century, physiologist Charles Sherrington defined different bodily perceptual-reflex systems that are responsible for distinguishing information derived from position and motion (proprioception), internal stimuli from within the body (interoception) and from external factors

(exteroception). The receptor organs seem to be distributed in two separate fields, one surface and one deep. Sherrington then proposed a further subdivision of the surface field according to the distinct ways in which it faces or contacts the environment; either via cutaneous and sensory organ tissues, or via the internal (alimentary) surface. In this latter situation, “a fraction of the environment is more or less surrounded by the organism itself” (1907, p.470). Sherrington terms the inwardly turned receptive field *intero-ceptive* (hyphenated in his text), to distinguish it from that outwardly faced to the free environment, which he terms *extero-ceptive*. Finally, he characterises stimuli of the deep field as being traceable to the actions of the organism itself, and observes their “tendency to induce and maintain tonic reactions in the skeletal musculature” (ibid, p.473). This he terms *proprio-ception*.

Another form of inward attentional focus may be achieved through introspection, or looking inward into oneself.<sup>24</sup> Philosophers Claire Petitmengin & Michel Bitbol (2009) propose that skills of introspection can be nurtured through disciplined practices such as vipassana meditation. This practice aims to develop self-reflective awareness of experience, the goal being “not to reach a special (‘altered’) state of consciousness, but to become increasingly aware of what is usually lived through but remains unnoticed” (ibid, p.381). When walking, the vipassana practitioner knows she is walking. Counter arguments to introspection suggest that it leads to a distancing from experience, by splitting one’s attention or causing ‘paralysis-by-analysis’<sup>25</sup>, and stress the ‘freezing’ character of the introspective act. According to such views, “To be able to observe the fluctuations of his experience, which is fundamentally in motion, and particularly the subtle movements of his thought, the subject has no other solution than to immobilize, to petrify them, which amounts to missing them” (Petitmengin & Bitbol, 2009, p.366).

---

<sup>24</sup> The essays in Varela & Shear’s *The View From Within* (1999) offer many possible first-person introspective approaches to conscious experience, including the Feldenkrais method and phenomenological praxis.

<sup>25</sup> The liabilities of paralysis-by-analysis in motor learning and performance are detailed by Schmidt & Wrisberg (2008).

*danced process #1* draws on aspects of a number of improvisation and meditation practices which involute attention through introspection or interoception. One such practice is Authentic Movement (AM) which proposes commencing from stillness, with the eyes closed and the attention focused towards inner impulses or urges to move, and then allowing movement to follow feelings. Mary Starks Whitehouse, founder of AM, was influenced by Jung's notion of active imagination;

I think that body movement is active imagination in sensory or sensation terms ... [it] has nothing to do with which areas of the body are involved or one's stiffness or whatever. It has to do with the unconscious flow of material coming out in physical form. (Whitehouse et al., 1999, p.20)

Imagination and imagery are also employed in Release Technique. Mary Fulkerson, pioneer of this work, advocates selecting a body image<sup>26</sup> and making it the centre of attention. "The body remains still until action is demanded from the image itself ... The image strongly directs activity" (1975, p.11). In Authentic Movement practice, the mover works with the support of a witness who acts as a non-judgemental outside eye. Fulkerson's practice also develops observation skills through watching other dancers who are often involved in long stillnesses. "The action of looking can include the process of seeing thought happen in another person" (ibid). Fulkerson suggests that looking and stillness are both dynamic activities. This resonates with the movement inquiries of Steve Paxton, originator of the practice of Contact Improvisation (CI).<sup>27</sup> In Paxton's *Small Dance*, dancers stand in stillness and inwardly focus their attention to observe the "layers of miniscule motions" (Lepecki,

---

<sup>26</sup> This term will be discussed in detail in chapter 4.

<sup>27</sup> This practice is "based on the communication between two or more moving bodies that are in physical contact and their combined relationship to the physical laws that govern their motion—gravity, momentum, inertia." This definition of the form by Nancy Starks Smith appears on the current home page of the main on-line forum for CI (contactimprov.net) However, reflecting in 1982 on CI in the mid-1970s, Starks Smith wrote about the legacy of ambiguity created by Paxton; "What is this thing called Contact Improvisation that people are so hot to do? What is it? Some people said it was about sharing weight, getting a rigorous workout, acquiring new skills; and others said it was about developing sensitivity. And the list went on. After the discussion, on our way back to our rooms, a few of us were walking past a cabin where some of the students were living and I heard through an open window as I walked past, "They know what it is, but they just won't tell. That Steve Paxton has passed on a legacy of ambiguity that keeps everyone from saying what it is, but they know" ... I think she's right. Not only did Steve offer a dance, but a built-in way of keeping it alive" (in Albright & Gere, 2003, p.159).

2000, p.344) and micro-adjustments of the structure dynamically organising and re-organising alignment-for-standing. Danielle Goldman describes how this small dance, also known as *The Stand*, acts as a discipline to teach dancers about the efforts required to remain vertical, which then informs their ability to fall. “The goal eventually became to maintain the calmness of the stand even in extreme, adrenalized states of dancing” (Goldman, 2010, p.105). Such exercises are used by Paxton to train dancers’ hyperawareness of and polyattentiveness to movement on multiple, simultaneous levels. Dance artist Kent de Spain describes his experience of “microseconds of stillness between movements” (in Goldman, 2010, p.107) in such practice. This suggests that this type of introspective practice presents a means to reduce, rather than create, the potential for paralysis-by-analysis.

## **2.6 improvisation: thinking in movement**

For Tim Ingold the artist is an itinerant wayfarer making their way through the taskscape<sup>28</sup> (2010a); “to improvise is to follow the ways of the world, as they open up, rather than to recover a chain of connections, from an end-point to a starting-point, on a route already travelled” (ibid, p.97). In *danced process #1*, I established an improvisatory taskscape, structured by the tasks of accurately repeating set accumulation material, of involuting attention to the flow of improvisation, and of talking with the audience. The taskscape deliberately intended to divide attention, with a view to creating a cognitively demanding choreographic situation that might challenge or illuminate aspects of the thinking processes at play. Maxine Sheets-Johnstone proposes that the experience of moving in improvised dance is a paradigmatic example of thinking in movement. For her, a dance improvisation is “a flow experienced as an ongoing present ... an unbroken now” (2009, p.30). In Laban Movement Analysis (LMA), Flow is a factor in Effort; “Effort reflects the mover’s

---

<sup>28</sup> The defining of the taskscape is a feature of structured improvisation. Trisha Brown commented, “if you set yourself loose in an improvisational form, you have to make solutions very quickly and learn how to. That is the excitement of improvisation. If, however, you just turn the lights out and go gah-gah in circles, that would be therapy or catharsis or your happy hour, but if in the beginning you set a structure and decide to deal with X, Y, and Z materials in a certain way [...] that is an improvisation within set boundaries [...] This is what I would call structured improvisation because it locates you in time and place with content” (in Banes, 1993, p.20).

attitude towards investing energy in four basic factors: Flow, Weight, Time, and Space [...] Flow is the baseline ‘goingness’, the continuity, of the movement out of which the other effort elements emerge and return” (Hackney, 2002, p.219). Peggy Hackney further emphasises that the effort factors can be operative without being conscious. Many creative and somatic practices actively encourage practitioners to ‘let go’ of conscious awareness of a movement or activity. Psychologist Mihaly Csikszentmihalyi describes the state of being absorbed in activities such as music or dance improvisation as ‘being in the flow’. (1990) Driving a car is an everyday example – once the various stages of the activity are learned and assimilated, we mostly drive without consciously attending to feet, pedals, mirrors, gear shifts etc.<sup>29</sup> However being in the flow does not mean that expert performers (or drivers) *totally* switch off their intellect and abandon themselves to some rather mystical idea of instinctive, organic or ‘mindless’ authenticity.<sup>30</sup>

I suggest that the hours invested in practice or rehearsal may facilitate dancers’ awareness, skill and freedom to negotiate different layers of attention to detail *whilst* in the flow. In Classical Ballet for example, many hours are spent repeating and perfecting the basic movements that form the foundation for much of the vocabulary. These activities become so familiar that at times they may seem to be performed in auto-pilot. Recent developments in high resolution video offer a means to apprehend some of the improvisatory aspects of such practised movements. *Mercury* is a film of Scottish Ballet dancers by Daniel Warren (2009), shot with a high speed camera at 2000 frames-per-second, then replayed in real-time.<sup>31</sup> Warren suggests that this produces a poetic world that exists only on film;

---

<sup>29</sup> In the Advanced Driver Training in the UK, trainees are tasked to verbally report on their driving experience while driving, noting their own actions, observations about the environment, clarifying decisions etc. At this advanced level, the challenge is to function on multiple simultaneous layers of attention, being in the flow while attending to the moment.

<sup>30</sup> A personal experience of over-abandoning myself to a notion of intuitive freedom, and allowing the performance to organically ‘just happen’, resulted in my completely blanking and freezing on stage. In this instance, I was immobilised not by over-analysis, but by too little. An attentive colleague rescued me and danced me to my next position. This incident marked a turning point in my personal investigations of how to be fully in the flow whilst also able to exit the state with agility.

<sup>31</sup> Screening of Daniel Warren’s *Mercury* hosted by Human Race and Scottish Ballet at Inspace, Edinburgh, 13th January 2011.

Filming at high speeds yields an image that is analytical, rather than observational ... Here, it allowed me to focus on the intellectual and physical labour of the ballet dancer: the refined adjustments and subtle shifts that a dancer makes in order to shape a movement's trajectory and character. (ibid)

To me, this film offers insight into the layers of attention and the hyperawareness, described by de Spain, at play in the micro-movements made to correct the balance, adjust alignment, etc. The video frames highlight all the individual 'nows' and the microseconds of stillness between them that constitute flow, which *may* be experienced as an unbroken now. In this example, the Scottish Ballet dancers are executing pre-determined, repeatable and rehearsed material. I propose that they are nonetheless engaging a different *form* of improvisation process. They are in the flow, allowing the unfolding of each moment, but are also responsive to the requirements and the unpredictability of each now – making the refined adjustments and subtle shifts revealed by Warren's film, in order, for example, to negotiate the mass of their partner in a lift, to correct the balance in a pirouette, or prepare to land a jump. When turning, it may sometimes be more useful for the dance practitioner to just turn, or for her to know she is turning.

This balancing of learned reflex, conscious attending, and letting go, correlates with my own experience of developing greater awareness of lived experience on multiple, simultaneous levels through embodied practices which either involute or evolute attention, or both. These practices will be engaged and discussed throughout the course of this thesis.

## **2.7 talking while dancing**

A number of the dance artists associated with Judson Dance Theater explored the use of speech in their performance and training practices. Trisha Brown interwove spoken narratives into the *Accumulation* pieces; Yvonne Rainer's *Ordinary Dances* (1962) was accompanied by an autobiographical monologue, and Douglas Dunn played on words in *Talking Dancing* (1973). Kenneth King used texts (some recorded, some spoken live) in his performances "to create several simultaneously



interactive semiolexical counterpoints and exchanges to reflex the brain's interactive bicamerality" (King, 2003, p.166). In making his 1978 work *Floating the Tongue*, choreographer Bill T. Jones wanted to "dispel the myth that dancers don't think while dancing" (Goldman, 2010, p.115) by creating a cognitively challenging four-part improvisation which incorporated talking and dancing. The first part derives from free improvisation which continues until Jones arrives at a phrase that he can memorise and repeat. In the second part, he verbally describes each movement in detail while executing it. In the third he verbally describes the feelings that emerge as he dances the phrase. The final section can develop in any way he chooses, using tasks or material from the first three sections and including the choice to stop moving entirely. There are conceptual correlations between *Floating the Tongue* and *danced process #1* but this work was not a direct influence on my ideas – I was not aware of Jones' work until after my choreographic process for *danced process #1*. The performance works also differ in that *danced process #1* situates the dancer among and in conversation with the audience, while Jones' work was created for presentation on stage. My research led me to reach similar conclusions to Jones however, about the potential role of talking-while-dancing for creating improvisational challenges, illuminating thinking, or accessing layers of embodied history and meaning.

Previous works of mine that incorporate speech include *Passport* (2006), in which six dancers speak their identifying data, – name, nationality, height, profession etc. – the words creating a 'dance of text' to accompany choreographed movement ID phrases.<sup>32</sup> In 2008 I participated as choreographer on *Scale*, a research lab into scaleable movement sensing and tracking systems, as part of CIRCLE, an interdisciplinary group of researchers from the University of Edinburgh and Edinburgh College of Art.<sup>33</sup> Dancers from The Curve Foundation<sup>34</sup> were asked to

---

<sup>32</sup> Created during RODA choreographic lab at Yorkshire Dance Centre, Leeds.

<sup>33</sup> CIRCLE: Creative Interdisciplinary Research into Collaborative Environments. For more detail on the Scale project see Biggs et al., (2009).

<sup>34</sup> The Curve Foundation is an Edinburgh-based contemporary dance company. The dancers on the Scale project were Curve's artistic director Ross Cooper, Lucy Boyes, Morgann Runacre-Temple and Ira Siobhan.

improvise within several multi-modal, immersive interactive environments. In one, they simultaneously listened and talked to each other both in the studio and on the telephone, while dancing alone or with each other, or with projected interactive imagery. The request was that they talk as if chatting rather than speaking or narrating. I observed their difficulty in maintaining such divided attention, and how quickly talking became lost in the cognitive bottleneck created by the demands of this multi-tasking problem. The rapidity with which the task fell apart was slightly surprising to me, in that dancers are generally at ease with talking-while-moving, when they are warming up for example, or speaking instructions in the course of dancing when teaching. My observations of the dancers on the CIRCLE project suggested to me that adding talking to the taskscape for *danced process #1* might present an interesting challenge to embodied cognition.

## **2.8 practices of improvisational awareness**

One outcome of *danced process #1* was that the device of verbally reporting on-the-action-in-the-action emerged as a method for critical engagement with and reflection on the phenomenal experiences of dancing or dance making. This relates to explorations and methods for real-time reporting of dance improvisation such as developed by de Spain (in Albright & Gere, 2003), Forti (ibid), and Doughty (2007) which focus on accessing and articulating ‘improvisational awareness’. Simone Forti’s dance/narrative form, *Logomotion* or *moving the telling*, encourages talking as stream-of-consciousness. She describes it as both a performance form and as a practice, “a way for me to know what’s on my mind” (in Albright & Gere, 2003, p.57). “When I am moving the telling of some material, I am as affected by my own movement as by the subject ... I still have all the concerns of space, of timing, of movement interest” (ibid, p.59). The capacity to divide her attention between the concerns of space, time, content and movement response is honed through practice. Carmela Hermann, a student with Forti, describes her initial difficulty in coping with the multi-tasking demanded by talking-and-dancing;

there was either talking or there was dancing. Feeling or thought. The two

didn't connect ... I feel disconnected because I *report* my experience as opposed to speaking while being in the experience. I experience the thing and remove myself from it in order to explain it. (ibid, p.68 emphasis in original)

Petitmengin & Bitbol suggest that “if we are unaware of our experience, we are especially unaware of the particular experience consisting in accessing our lived experience and describing it” (2009, p.372), and they propose that there are methods and skills, such as vipassana meditation, to improve this. For Hermann the practice of Logomotion facilitated her becoming more adept at accessing and describing her lived experience, and in coping with the multi-tasking required for the activity.

Working with dance students at De Montfort University, Sally Doughty has also explored methods for developing their skills of verbally reporting in the action on the experience of improvising. She observed that initially, as the students became more consciously aware of the unfolding improvisation, they felt *less* able to dance. This points in the direction of the paralysis-by-analysis arguments. Doughty's assessment of this was that they were “relying less on habitual movement patterns and ways of dancing and were working instead with less familiar concepts and content. Their thought processes were shifting and therefore their physical responses were too” (Doughty, 2007, p.39). However working over time with the verbal reporting practice, the students became much more adept at maintaining several layers of attention simultaneously.

In the dance situations I have described, the danger stakes of paralysis-by-analysis are not that high. In a discussion with aerial dance artist Jennifer Paterson<sup>35</sup> she described to me her experience of performing in a work where she had to co-ordinate complex aerial moves while also narrating text. (personal communication, 24 March 2011) Her text was scripted, but as she was unused to speaking on stage she found that particularly in early rehearsals the activity of remembering her lines could easily demand most of her attention. Unlike Hermann's choice – “there was either talking or there was dancing” (op cit) – not dancing is not really an option for Paterson when

---

<sup>35</sup> Jennifer Paterson is artistic director of Edinburgh-based aerial dance company All or Nothing.

dancing takes place in mid-air and freezing can result missing a catch or hold, and falling. In Paterson's case the questions concerning gesture (what happens to gesture when the hands are occupied with dancing?, for example) are compounded by the fact that her hands are very much occupied in ensuring her safety by catching or holding on to ropes. She has also worked with an actor who is hearing impaired, and when working with him she was talking and signing and moving and teaching in the air. As an extreme example of dancing-while-talking, the activity of dancing-in-the-air-while-talking-with-signing further blurs distinctions and places contradictory demands on gesture.

## 2.9 gesture

*danced process #1* raised a number of interesting questions concerning gesture such as what happens to gesture when the movement of thinking-for-speaking becomes interwoven with gesture-for-dance, and vice versa? Historically, gesture studies have tended to focus on its role in communication (Kendon, 2004). During the Middle Ages the main concern was its role in social, legal and religious etiquette, including the rituals of the silent orders of Cistercian Monks, which continue to be studied as examples of non-verbal communication systems (ibid). Francis Bacon's writings on gesture, which he termed transient hieroglyphics, inspired the English physician John Bulwer, often known as the father of British Sign Language. Bulwer developed a semiotic approach to gesture which laid the foundations for contemporary sign languages.<sup>36</sup> In the 17th-century Giovanni Bonifacio argued that bodily signs "reveal more clearly and truthfully than words a person's feelings and intentions" (in Kendon, 2004, p.23). 19th-century psychologists deepened this inquiry into gesture as a possible 'window to the mind', with Wilhelm Wundt positing the idea that

---

<sup>36</sup> Bulwer's *Philocophus: The Deafe and Dumbe Mans Friend* (1648) is an early manual for the deaf, establishing a series of Alphabets to be spoken with the hands. This work contains detailed chirograms – drawings – of hand and finger gestures and their meanings, and alphabets. This systematic guide follows through ideas explored and developed in his two major works, published together in 1644 as *Chirologia: or the Naturall Language of the Hand. Composed of the Speaking Motions, and Discoursing Gestures thereof. Whereunto is added Chironomia: Or, the Art of Manuall Rhetoricke. Consisting of the Naturall Expressions, digested by Art in the Hand, as the chieftest Instrument of Eloquence, by Historicall Manifestos, Exemplified Out of the Authentique Registers of Common Life, and Civill Conversation.*

gesture is a kind of ‘universal language’;

Gestures are first and foremost affective expressions. Essential that it be that gestural communication rise above this level, it could never have come into being without the original affective motivation. Only secondarily, insofar as every affect contains strong emotional concepts, does the gesture become a conceptual expression. (1973, p.146)<sup>37</sup>

In his introduction to *The Language of Gestures* (Wundt, 1973), Arthur Blumenthal suggests that a recent renewal of interest in Wundt’s theories is because of the “emphasis on the faculty of ATTENTION ... His psycholinguistic theories now appear especially modern” (ibid, p.11, emphasis in original). Anthropologist Ray Birdwhistell developed a linguistic approach to and system of notation for human movement and gesture, for which he coined the term *kinesics* (1952). Kinesics proposes that individual motion units – or kinemes – are only meaningful as part of whole body motion patterns and in social context. Because of this meaning can only be inferable, not absolute. Biologist and psychologist Adam Kendon draws on Birdwhistell, and like Wundt makes a semiotic analysis. Kendon’s gesture-speech ‘continuum’ categorises gestural acts, actions and behaviour, and encompasses gesticulation, language-like-gesture, emblems and signed languages. (McNeill, 2000) *Emblematic* gestures are codified signs, such as a raised thumb which has come to mean OK (or, give me a lift). *Iconic* gestures illustrate specific words such as by shaping imaginary objects; *metaphoric* gesture helps shape concepts through more general actions; *beat* gestures give emphasis, while movements such as clasping the hands to the heart are *affect displays*.

Current gesture research by such as David McNeill (1992, 2000, 2005) and Susan Goldin-Meadow (2003) considers that gesture and speech form an integrated system for both communication and cognition. Core to their proposal is the idea that when gesture is for the speaker it can actively lighten the cognitive load; “gesture

---

<sup>37</sup> Wundt’s essentially semiotic approach was developed through study of various groups of signers such as deaf-mutes and Cistercian monks, for whom the development of a non-verbal language is imperative for communication, and also of groups who make lively use of gesture, such as Neopolitans and American-Indians.

contributes material carriers to thinking-for-speaking” (McNeill, 2000, p.161). Many of Goldin-Meadow’s studies examine gesture-speech ‘mismatches’, where the action reveals or leads to understanding of a different aspect of the cognitive or communicative process than the spoken words. These contemporary gesture studies inform the direction of my subsequent engagement with gesture in this thesis. In particular I focus on idiosyncratic gestures, created locally by speakers while they are speaking, which McNeill & Duncan suggest “open a ‘window’ onto thinking that is otherwise curtailed” (2000, p.143).

## **2.10 conclusions**

The aim in *danced process #1* was to establish a real-time choreographic problem solving activity that might facilitate inquiry into embodied, embedded mind and cognition. The device of talking-while-dancing was initially engaged as a choreographic tool, but emerged as a somatic practice of improvisational awareness, which can cultivate polyattentiveness and the skills to describe the movement in the moment. It also highlights the role of gesture in both communication and cognition. Dividing attention and multi-tasking can potentially lead to paralysis-by-analysis; however, I propose that practices of improvisational awareness and other psychophysical practices of reflection may nurture mindful awareness of and access to lived-experience, and help avoid such cognitive bottlenecks. I expand this argument in chapter 4, proposing that the capacity to shift between attentional layers can be developed through practices of embodied reflection.

*danced process #1* began as a deliberately open-ended process, aiming to problem find through problem solving. The emergent problems are so rich that they fuel much of the subsequent inquiry for this thesis, and future research.

## Chapter 3: remembering

### ***re-membering(s): Being There and Then, and Here and Now***

*re-membering(s)* is a performance work comprising a series of improvised 'miniatures' in contemporary music and dance. In the creative process for this work I engage questions of embodied perception, memory and cognition from a choreographic perspective, and explore the interfaces between performers, between dance and music, and between performers and audience in live improvised performance. What is transmitted? What is lost? What are effective choreographic means to apprehend, frame and articulate the fugitive impressions and traces of what happens in the improvised danced moment? *re-membering(s)* emphasises the activities of looking, listening, remembering and reporting, and engages aleatoric compositional methods.

*re-membering(s)* results from a collaboration between my dance company, *articulate animal*, and *the other ensemble*, a collective of Edinburgh-based composers and improvisers directed by composer Suzanne Parry. The work was developed with choreographic residency support from Dance Base, Edinburgh. It was performed at Dance Base during the 2009 Edinburgh Festival Fringe, and at Woodend Barn, Banchory as part of the 2009 Dance Live @ Sound Festival. The dancers with *articulate animal* were Lucy Boyes, Freya Jeffs, Skye Reynolds, Steinvor Palsson and Sue Hawksley. The *other ensemble* performers were Suzanne Parry (bass clarinet), Chris Greive (trombone), Richard Worth (flute), Luke Drummond (broken piano, vibraphone) and during the choreographic residency, Daisy Costello (cello).

**REFER TO VIDEO: RE-MEMBERING(S)**

**PERFORMANCE AT DANCE BASE, EDINBURGH FESTIVAL FRINGE, 2009 BY  
ARTICULATE ANIMAL AND THE OTHER ENSEMBLE**

### 3.1 background

My decision to collaborate with a composer for this work arose partly out of *danced process #1* which was performed without music, the soundscape comprising the speaking voices and the ambient noise of the gallery setting. This raised general questions for me concerning the relationship of dance to music or to silence, and specific questions about this relationship with relevance to this choreographic research into embodiment. In laying the foundations for this collaboration, Parry and I considered the many ways in which dance and music can act as partners in performance. Sally Banes' exhaustive chapter title, *Dancing [with/to/before/on/in/over/after/against/away/from/without] the Music: Vicissitudes of Collaboration in American Postmodern Choreography* (1994, p.310) captures something of the revolution that occurred predominantly, but not exclusively, within American postmodern dance in the 1960s. For Banes, the legacy of this revolution endures in the mutability of the relationship between media and the continued ventilation of possibilities for the sound component in dance. In the 1930s Rudolf Laban among others had already championed the expressive potential of movement and dance independent of their requiring music for inspiration. The collaborations between Merce Cunningham and John Cage from the late 1940s marked a paradigm shift for choreographers and composers. Cunningham considers the early works in which he and Cage began to separate the music and dance to be one of the Four Events That Have Led to Large Discoveries<sup>38</sup> in his career; "working in this manner gave me a feeling of freedom for the dance, not a dependence upon the note-by-note procedure with which I was used to working. I had a clear sense of both clarity and interdependence between the dance and the music" (in: Walker Art Center, 1998, p.20). For our collaboration, Parry and I aimed for a similar in- and inter-dependence between the media. A connecting thread running throughout the music and choreographic structuring was the use of prime number tone-rows, prime numbers being chosen by Parry and I partly for the predictability of unpredictability

---

<sup>38</sup> The other of the Four Events being the use of chance operations in choreography, work with video and film, and the use of Life Forms software.



of the patterns generated by them.<sup>39</sup>

## 3.2 choreographic and collaborative processes

The research and development process engaged compositional methods and devices to generate movement material and tasks which would define the contents of ‘tool kits’ to be used by the performers.

### 3.2.1 reporting

The initial exercises for the dancers drew on the improvisational awareness practices previously explored in *danced process #1* – commencing from stillness, inwardly focusing attention and following felt impulses to move, witnessed by other dancers. After each improvisation, movers or witnesses report on what they can remember of the impressions left by the dance using spoken or written word, drawing, danced response or tactual report. We varied this exercise by ‘witnessing’ the improvisation through sensory modalities other than the visual, for example the witness closing their eyes and then listening to a verbal report given by a dancer during an improvisation, or receiving a tactual report given after the improvisation. The aim of all these reporting exercises was to focus on the intersubjective, intercorporeal, intermedial interfaces.<sup>40</sup> We noticed that the ability of each of us to apprehend the traces of the danced improvisation varied according to modality. Some of us were very visual. Others (like myself) found that words and tactile imprints left a more lasting impression.

In his work *Floating the Tongue* (discussed in Chapter 2) Bill T. Jones separated out descriptive and associative report into different sections of the performance. In my

---

<sup>39</sup> Composer Matteo Fargion, considering compositional patterns in relation to information theory suggests that, “patterns of predictability should be both predictable and unpredictable” (personal notes from a composition workshop led by Fargion and choreographer Jonathan Burrows at Findhorn Universal Hall, Scotland, 9-11th July 2009). This unpredictability and ambiguity seems to me to speak more of the rhythms experienced when in the world. In the street or in nature, cars or birds rarely pass by in perfect unison, canon or en diagonale.

<sup>40</sup> I use the term *interfaces*, which in computer science refers to the point of interaction between components, to indicate that my thinking at this stage of the research anticipates future investigations using mediation technologies, which may include computational technologies.

task of reporting on the experience while in the experience, I did not clarify such distinctions for the dancers; I did however specify that they should use real words and clearly audible vocabulary. The words they chose had to hold meaning *for them* about the sensation, perception or action on which they were reporting. The report did not have to be semantically or syntactically accurate, and the words chosen could be descriptive or associative, but they had to be words – I wanted to avoid onomatopoeic ‘babbling’.

In this verbal reporting exercise we all commented on the “abundance of movement at any moment during the phrase – far more than one can describe” (Goldman, 2010, p.115). A further layer of complexity in the task emerged when the musicians also experimented with musicing-while-talking. One of them commented that for every note or phrase, while he might choose descriptive or associative reports such as “B flat”, “glissando”, “like the sound of water”, or “raise the right hand” (personal notebook), as soon as he started playing the flute he was then unable to speak. Some instruments are all absorbing – one can describe playing or be playing, but not do them simultaneously.<sup>41</sup>

### **3.2.2 tactual reporting**

To begin the explorations of tactual reporting we aimed to report back on a short movement phrase through touch. Part of this was to investigate how quality, timing, intensity, duration and dynamics of touch could evoke the movement. It quickly became apparent that any notion of modelling the entire movement form, or of laying down a one-to-one mapping was impossible. Practically speaking this was because we did not have sufficient limbs to accomplish such a feat of puppetry. We would need as many limbs as points to be moved; in other words one would have to entirely inhabit the body of the other.<sup>42</sup>

---

<sup>41</sup> Parry and I did briefly explore some other ways in which the musicians could also verbally report on their experience of playing, although we decided not to incorporate this into the performance work. However, for me, even the small experiments revealed a layer of the musicians’ experience I was unaware of, and this is something that I feel has potential for future research.

<sup>42</sup> N Katherine Hayles, in a discussion of the issues of modelling neural nets notes that congruence can only be exact “only if the model is as complex and noisy as reality itself. Building such a



**fig 4: tactual reporting.** Photo: Maria Falconer.

This realisation helped to clarify that the purpose of the exercise was not to map or describe the actual movements, but to report on the phenomenal sensation of performing them. We explored various permutations of the dancing and reporting process, including reporting after an improvisation or after a set repeatable phrase, the receiving dancer observing – or not – the source dance, and the reporting dancer tactually self-reporting on her experience while she dances as a means of physically ‘marking’ her memory of the experience. Finally we explored the exercise in different permutations with the receiving dancer lying, sitting, or standing. Once the moving dancer has tactually reported her dance, the receiving dancer moves according to her felt-reading of this information. A third person observes the whole process and acts as outside eye and witness. Some feedback from the dancers’ discussions and notebooks about tactual reporting includes;

---

model would, of course, defeat the purpose of model-making, as Lewis Carroll (and later Jorge Luis Borges) playfully points out when he imagines a king’s mad cartographer who is satisfied only when he creates a map that covers the entire kingdom, reflecting its every detail in a scale of 1:1” (1999, p.60).

“one person was watching, one person wasn’t and you put the improvisation that you felt onto someone else, just by touching. That completely took me, because it was just amazing to see something transferred like that through touch, and the things it brought about, like making somebody else look different, and seeing other people’s things come out on other people.”

“the initial impulse took me by surprise, so very different to me. Much more aware of the feet and hands – I was so closed over and heavy.”

“it didn’t feel like you at all.”

This third comment was made by a dancer after she received touch information. From her previous experience of watching the dancer who delivered the touch, she had anticipated that the touch information would feel different to what she received. She also commented that she “didn’t feel like herself.”

“Focus on pelvis, pulling gently diagonally back up and out. Legs folding up. But the arms not ‘floppy’ – strangely organising themselves, the face rolling and feeling the floor. My experience was of a new organisation of structure and set-up for movement in the shoulder-girdle-to-arms that was unfamiliar to my usual sensation: the choice of movements to follow were not being informed by my arrangement of self.”

“I felt completely unlike myself. The way the belly pulled open and the L leg pushed out to the side, foot pulling, hamstring struggling. L ear circling was warming, like a hole in my head. Didn’t feel like myself; I’m not sure how to make the next move, where the impulse would be. This definitely feels something like I’m occupying (x’s) habitus, I’ve learned a tiny bit about being x ... Lying there in x’s tension-patterning was so bizarre. Like an out-of-body sensation. Body organised to a different pattern.”

This last report is my own. I had just received a tactual report from a dancer, and after only four touches, I felt as if I was in an alien body. The most interesting sensation was the feeling that I did not know how to initiate my next movement because I was so out of my familiar pattern (I have experienced similar feelings of kinaesthetic disorientation, after a massage for example, or emerging from deep sleep or from anaesthetic). The other dancers watching this commented that my next movements resonated with the kinetic melody of the dancer who had delivered the touch. I felt a curious empathy, something like getting under the skin of the other dancer.

### **3.2.3 notebooks**

The dancers were asked to keep notebooks throughout the process, either for personal reflection or to make written or drawn responses that were passed between them. The notebooks became an integral part of the process, providing records, helping track developments, and offering insights into the creative processes. During rehearsals they became a means of communicating thoughts and ideas or of mediating between different disciplines. Parry described how seeing a drawing made by a dancer in response to her music gave her a different insight into the way her music was received than watching the dancer's danced response. My own journal brings data to my attention in subtle ways. For example, a note I made about an improvisation by one of the dancers was written at a particular slant across the page which, I later realised, echoed a tendency to tilt in her pelvis. These exercises in reporting and recording also highlighted the aspects of recall and the difficulty of retention of detail. Despite the brevity of the movement phrases and the concentration of our attention on the tasks, the memory of the moments quickly slipped away. Lepecki notes;

It is one of dance studies' major premises to define dance as that which continuously plunges into pastness – even as the dance presents itself to visibility ... As issues of memory, history and visibility are brought to the fore, the notion of mnemonic trace emerges as a concept in crisis – a concept brought to crisis by the means of the dance. This is a crisis of the visible, of how to approach the visible body as its dancing presence plunges into the

past, into history, into a representational field that is perhaps too excessive to be regimented, contained, tamed. (Lepecki, 2004, pp.4-5)

This excessiveness became a subject of the inquiry in this piece. I became very interested in the activity of remembering as opposed to memorising, and this inspired many of the choreographic processes used in *re-membering(s)*. Many aspects of the performance also play on these difficulties of catching, retaining and reporting the traces of improvisational moments.

### **3.3 performance**

The performance work evolved from these initial improvisation exercises into a series of seven 'worlds' each centering around a specific quality of an individual dancer and developing through iterative processes, which we presented as miniatures. The seven miniatures were named as; i) duet; ii) Pools (big page); iii) 5-7-11; iv) piano; v) Freya's web; vi) Steinvor everywhere; vii) Lucy's tomato. These names arose as functional mnemonic tags and do not signify any formal dance or music terminology.

#### **3.3.1 duet**

The performance opens with a pre-recorded monologue spoken by one of the dancers, which is played while all the performers stand in stillness and listen. The words were recorded during rehearsals, and are of one dancer verbally reporting on her experience as she dances an improvised solo. This opening device for the performance sets the context for an unpredictability to come – nine performers are present but do not play or dance, while a disembodied voice speaks. The recording is then replayed while two dancers perform a duet. The duet material loosely but laterally relates to the words, evoking the possibility that the dance and the text may hold meaning.

### 3.3.2 Pools (Big Page)<sup>43</sup>

This world evolved out of a series of improvisations by one of the dancers in which she generated a quality and form of movement that seemed to swirl the space. Her presence was very strong – one of the other dancers described it as a quality of “purposeful release” – generating pools of movement that seemingly never settled in any one place. There was a circularity, richness and denseness to the dynamic of her dancing that literally moved the air as she passed by, and which seemed to leave almost tangible traces or trails. We used the image of the space being a viscous soup, in which vortices or pools being created individually were interconnected by the trails.<sup>44</sup> The ensuing task for the other dancers is to visualise these traces as if snake-skins – tubes of space to slip into and follow. The movement vocabulary is therefore initially determined by the task of swirling the space, then by physically feeding oneself into a tube of space in order to follow the (imaginatively visualised) trail of another dancer’s previously performed movement. By paying attention to the *feeling* of being in this movement pathway, the focus of the task then shifts from trying to inhabit the vestige of what *was* to the immediacy of what *is*. Being There and Then merges into Being Here and Now. This shifting of attention in turn instigates new choices – to respond either to the sensation of moving in someone else’s pathway, to the immediate presence of another dancer or musician, or to the music. Other tasks include to dance with the intention of leaving snake-skin trails for other dancers to inhabit, or to ‘carry the sound’ as sound snake-skins in order to re-place and dance in the traces of previously heard sound. Both tasks are imaginatively led and impossible to achieve practically; my aim in setting them was to change the focus of the dancers’ attention. All the dancers commented that dancing with intent to leave a trace, for example, altered their phenomenal experience of the dance and their sense of presence.

---

<sup>43</sup> The alternative title of this section, Big Page, refers to the large sheet of music manuscript used by Parry to notate the many potential tasks available to the musicians.

<sup>44</sup> The idea of the trace was a tool for our improvisation task. Many artists have explored means to render the trace visible, for example Man Ray’s *Space Writing* series, or Picasso’s *Light Drawings*. Bill T. Jones’ *Ghostcatching* (1999) made in collaboration with Paul Kaiser and Shelley Eshkar of the Open Ended Group used motion capture and graphics software to produce ghostly trails.



fig 5: *re-membering(s) pools*. Photo: Ewan John

### 3.3.3 5-7-11

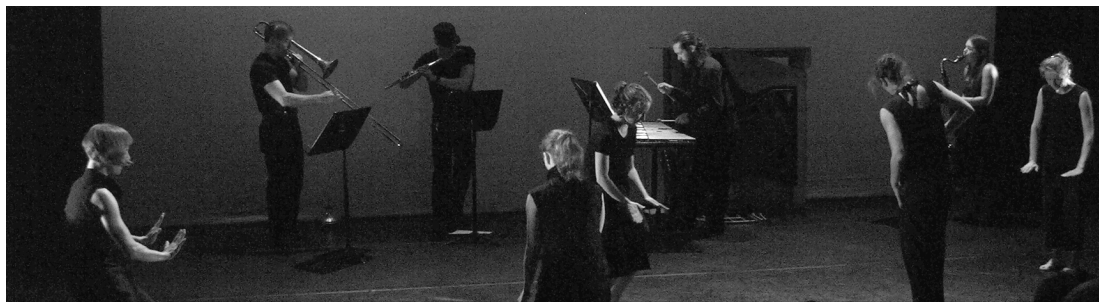
Within this section the choreographic material comprises several short, set and repeatable phrases based on prime numbered units of time. The dance material contains movements which result from several iterations of the improvisation/reporting process. It was initiated by a specific improvisation in which one of the dancers focused her attention on listening to the sounds and tempo of her breath, of the ticking of the clock, and of her own inner pulse. A dynamic use of legs and centre gave the dance a generosity in its use of space. One movement that repeated regularly was a holding and pulling up of one side of the waist and pelvis, which I described in my notebook “as if the skin has split”.<sup>45</sup> Another dancer witnessed this improvisation and then wrote and danced a response. In her notebook she described “mountains and hills”, “supported without support”. Her danced

---

<sup>45</sup> It transpired that this was the seat of an old injury; such observations informed the later inquiries regarding patterning of bodyscape engaged in *Bodytext*.



response focused on the small hitch of the pelvis, but continued it through the belly and the legs. The patterning of the responding dancer's carriage of the pelvis, with an easy drop and swing, was quite different to that of the dancer she was reporting on. The resultant movement, combining aspects of both movement signatures, is small, idiosyncratic and almost an involution of the original swirling, shifting dance. In order to distil and hold this curious small dance, I constrained the reporting dancer within an area one metre squared and organised the resultant movement material into phrases of 5, 7, 11 and 13 count duration, each extending into different physical planes and directions. As we performed these phrases, a machine-like pulse emerged which was taken up and developed by Parry in her music. This in turn led to my composing three further phrases that travelled beyond the square metre – 5 counts focused on a swung arm rhythm, 7 counts focused on the arms' rotation around the spine, and 11 counts with bigger leg swings which related back to both the original improvisation and to the music.



**fig 6: re-membering(s) 5-7-11.** Photo: Ewan John

For the performance the dancers are specifically asked not to predetermine the order in which they will execute these phrases. Their tool boxes contain all the set phrases together with choices to remain still or to walk to another location over the duration of one time unit. They are tasked to decide their next activity only when in the course of performing the current one. The aim here is that the audience will witness the thinking of the dancers as they engage in the decision-making processes. The sharing of the set movement material by all the dancers establishes a sense of familiarity for the audience, suggesting the potential for and generating an expectation of a

predictable pattern emerging. Here though, with all the possible variations and outcomes being dependent on the choices made by the dancers in the moment, this expectation is likely to be thwarted, and any pattern that does unfold will do so unpredictably.

### 3.3.4 Piano



**fig 7: *re-membering(s)* the piano.** Photo: Ewan John.

One of the instruments used in this work was the inside of a broken grand piano (nicknamed Bertha). This was placed and played vertically rather like a harp, and situated centre stage to capitalise on its sculptural qualities. In this section, all four musicians play together on the broken piano; vying for both physical and sound space they create both music and choreography as they play.



**fig 8: *re-membering(s)* piano.** Photo: Ewan John

The dancers sit downstage, facing away from the audience and toward the piano, witnessing this small dance of the four musicians. One dancer then stands, turns to face the audience and verbally reports on what she can remember of what she has just seen and heard. Following this report, the other dancers then stand and perform a danced response to what they can remember of her spoken report. This requires the dancers to divorce their attention from the immediate impulse of the music that is still being made in that moment by the musicians, and to concentrate on their memory of the words of the report by the speaking dancer. The task was incredibly difficult and perhaps impossible to achieve, but explores and aims to create disjunctures in the perceptions of time, and to challenge the audience's expectations that the dancers' improvisation corresponds directly to the music in a binary relationship.

## REFER TO VIDEO SEQUENCE 3

### RE-MEMBERING(S) PIANO

#### 3.3.5 Freya's web

The relationship of dance and music for this world developed in a very organic way. Parry had composed a 'chain' of music based on prime numbers, but she felt it did not work in the context for which it was written. One of the dancers had a foot injury at the time of the rehearsals, so we were exploring movements that did not require her to travel extensively or jump. I gave her an improvisation task which entailed tracing movement tracks, initiating from any part of the body and each of 5, 7 or 11 counts duration, within the confines of an area one metre cubed. The concentration of the dancer's presence in this condensed cube of movement choices inspired Parry to reconsider her composition. She spread the music out, positioning the musicians at different corners of the studio and played the chain antiphonally, which created a 'web' of sound. The dancer's task was adapted; she now divided her attention between following her own cube choices, and/or responding to the directional pull of the music. The other dancers then position themselves in the space as physical anchors, presenting another set of reference points that inform the central dancer's movement choices. Drawing on Edward Hall's theory of proxemics,<sup>46</sup> the anchors also function to extend and alter audience's perspective according to their facing, level and proximity. The dancer, Freya Jeffs commented on her experience;

The instruments that I was being pulled to were so spaced out and my cube had been so small ... In the beginning it felt quite uncomfortable because I wanted to just internalise and curl up. But the pull of each instrument as it sounded allowed me to lengthen out and to pull away, to stretch. And when the fixtures [she refers here to the anchor dancers] came in, they changed from being still fixtures to moveable changing fixtures, which was kind of a contradiction. But I managed to switch between them without too much confusion, which was odd because I was aware of people moving, but only a couple of them were there like beacons that I could follow. (personal communication, 10 June 2009)

---

<sup>46</sup> Hall's theory (1966) defines personal space according to intimate, social and public dimensions, and to sociocultural expectations and norms.



**fig 9: re-membering(s) Freya's web.** Photos: Ewan John

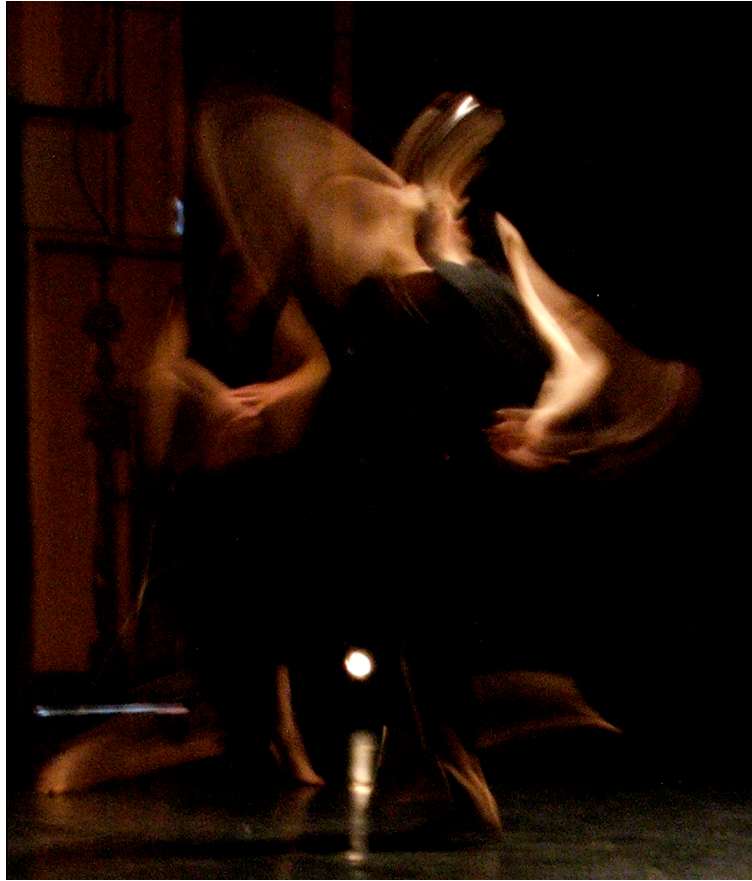
**REFER TO VIDEO SEQUENCE 4**

***RE-MEMBERING(S) FREYA'S WEB***

**3.3.6 Steinvor everywhere**

This section was inspired by a dancer's improvisation following a polyrhythmic choreographic task which set up 'cogs' of movement in the body in counter-rhythm and direction to each other. For example, small fast clockwise circles of the shoulder in the saggital plane, to be executed at the same time as a slow counter-clockwise circling of the pelvis on the horizontal plane. These collision of these two loops of movement set up an awkward reverberation and tension through the torso.<sup>47</sup> In her danced response to this task, the dancer moved with such speed yet lightness of energy that it seemed as if she was everywhere, as if all the coil of tension wound up by the complexity of the cog task was unleashed into the entire space.

<sup>47</sup> Sondra Fraleigh describes performing a compositional study by Cunningham which required sustaining one rhythm in the lower half of the body and a different one in the upper. This posed "a polyrhythmic problem to be solved intellectually and technically within the whole body complex, requiring an objective creative stance" (1987, p.135). For Fraleigh, this work "has a leveling and dispersing effect – evoking the qualitative steadiness of meditation ... entered into like a Zen koan riddle" (ibid, pp.135-6).



**fig 10: *re-membering(s)* Steinvor everywhere.** Photo: Ewan John

In my notes from that rehearsal I wrote;

“hands tracing space, holding the air, rebound, small steps, urgent, flicking, wrapping, dabbing the air, like a faun and a fish, arms wrapping and uncoiling. Shifting, never still but not anxious, nervy not nervous, coils of energy darting into release, arms suspended on the air, easy buoyant pelvis, rhythm, light fast pulse.”

In the performance, the dancer’s solo is punctuated by the other dancers who try to dart into the gaps between her movement phrases, using variations on choreographic material from previous sections which are adapted into skimming phrases.

The music to accompany this solo highlighted the piano, but unlike the previous Piano section, where the focus was on the physical presence of the piano and

musicians, here the sound was pre-recorded. The voice recording used for the opening section was played back through a speaker placed inside the body of the broken piano. A recording was made of this playback, capturing the resonance and harmonics created by the sound inside the piano. This process was then repeated fifty times, each new recording being played back and re-recorded within the body of the piano. This method directly references *I am sitting in a Room* (1969) by composer Alvin Lucier, and resulted in a soundscape of ghost-like voices that, when played in the performance space created an impression that the dancer's voice was everywhere at once.

### **3.3.7 Lucy's tomato**

During the rehearsals one dancer gave a verbal report after an improvisation, in which she described her highly synaesthetic experience of smells such as pine trees and tomatoes, of colours, and of textures such as ribbons and Play-Doh<sup>48</sup>. Her verbal description was so rich, and the resultant 'small-dance' choreography of her gesturing while speaking-to-remember was so evocative that for the performance I asked her to simply sit and speak this description.

#### **REFER TO VIDEO SEQUENCE 5**

#### **RE-MEMBERING(S) LUCY'S TOMATO**

When she finishes speaking, the musicians play what was Parry's most direct musical response, with the composition being inspired by the qualities described. The dancers sit still, listening. Ironically the link here between music and dance was the most literal of the performance, but the dance is remarkable by its absence. The performance of *re-membering(s)* opened with a pre-recorded verbal report of a dance that is not seen, and closes with a verbal report and musical response to a dance that is not danced. Such devices raise questions as to *where* the dance is. Is it for

---

<sup>48</sup> Researchers at the University of Birmingham investigating dancers' use of imagery reported, "dancers' images tended to be multisensory, incorporating mainly visual and kinesthetic but also tactile and auditory sensations, and sometimes even gustation and olfaction" (Nordin & Cumming, 2005, p.405).

example, in the dancer's original improvisation, or in the words of her description, or the notes of Parry's music? These questions concerning dance's ontology recur in and inform *Bodytext*, which I discuss in chapter 5, and *haptic\_dance*, discussed in Chapter 6.

### 3.4 open work: enactive performance

Parry and I employed aleatoric approaches in order to create compositional spaces and situations that would engage the performers in problem solving activities. We defined 'climbing-frames' and 'worlds' within which the performers could choose and manipulate dance or musical material using tools from tool boxes provided for them. In Eco's terms such an approach

installs a new relationship between the *contemplation* and the *utilization* of a work of art ... Far from being fully accounted for and catalogued, it deploys and poses problems in several dimensions. In short, it is an 'open' situation, *in movement*. A work in progress. (Eco, 1989, p.23, emphasis in original)

The poetics of the open work or the work in movement set in motion "a new mechanics of aesthetic perception, a different status for the artistic product in contemporary society" (ibid). In such work a performance is considered as a process of emergence rather than as an object, which brings into question the role and definition of choreography. Choreographer Jonathan Burrows suggests that "choreography is about making a choice, including the choice to make no choice".<sup>49</sup> The aleatoric processes employed here actively engage the performers in the collaborative making of choices (or no-choices). Drawing on ideas from Dynamical Systems Theory (e.g. Thelen & Smith, 1994) McKechnie & Stevens contend that "a collaborative ensemble is a dynamical system" (2009, p.93). For *re-membering(s)*, although Parry and I were primary authors in that we defined the parameters, all the performers were collaborators in the dynamical system and can therefore be considered as co-authors. In the context of the open work the responsibility for

---

<sup>49</sup> From my personal notes from a composition workshop led by Burrows and composer Matteo Fargion, held at Findhorn Universal Hall, Scotland, 9-11th July 2009.



authorship also extends to and involves the collective enterprise of the audience (Eco, 1989). Eco argues that;

‘open’ works, insofar as they are *in movement*, are characterized by the invitation to *make the work* together with the author ... effectively open to a virtually unlimited range of possible readings, each of which causes the work to acquire new vitality in terms of one particular taste, or perspective, or personal *performance*. (ibid, p.21, emphasis in original)

Eco also stresses the poetic relevance of indeterminacy for the cognitive processes engaged by the open work, because

it posits the work of art stripped of necessary and foreseeable conclusions, works in which the performer’s freedom functions as part of the *discontinuity* which contemporary physics recognizes, not as an element of disorientation, but as an essential stage in all scientific verification procedures and also as the verifiable pattern of events in the subatomic world. (1989, p.15, emphasis in original)

In *re-remembering(s)* the indeterminacy and discontinuity of events was at times overwhelming. Several of the dancers commented that the number of elements in the tool box was too many, and that they found it easier to focus on just one or two tasks. We all noted that we often failed to maintain attention to all elements of each task. I do not perceive this as a problem or failure – I deliberately set the problems to be highly complex and therefore fundamentally unachievable. This was partly to bring thinking to the fore, and partly so that the dancers would not settle into an attitude of presuming to predict what the solution to any problem might be. However, in light of the dancers’ feedback it is clear that it would be useful to establish some techniques to help the dancers cope better within the multi-tasking environments. I propose that certain dance and somatic practices which facilitate the recognition and inhibition of habitual reactions and thereby create the possibility for a wider range of responses, may present useful tools.

### **3.5 practices of inhibition**

The Alexander Technique is a somatic practice developed by F.M. Alexander, who

initially sought to resolve his own chronic laryngitis and neck pain through the observation and analysis of his movement patterns and habits. The Alexander Technique is now widely practised, and used by many artists including dancers.<sup>50</sup> The foci of the practice are to bring attention to the ‘use of the self’, to raise awareness of habitual movement responses, and to develop the capacity to inhibit the usual reflex actions, thereby creating a moment for conscious decision making. For Alexander this moment of substituting conscious control for instinctive direction is of primary importance in bringing about change of use;<sup>51</sup>

I could not enable my pupils to control the functioning of their organs, systems or reflexes directly, but [that] by teaching them to employ consciously the primary control of their use I could put them in command of the means whereby their functioning generally can be indirectly controlled. (Alexander, 1985, p.51)

I have experienced Alexander work before, mainly applied within dance contexts. During the rehearsal period for *re-memembering(s)* I received several one-to-one lessons. Alexander lessons use a combination of spoken and touch instructions by the teacher. The practitioner I was working with described her approach to the technique as a five point plan – stimulus, inhibition, direction, re-decision, action. She proposes that this series helps ‘call the bluff’ on habitual responses to stimuli and creates a more neutral space in which there is the potential to choose to act on the stimulus, to not act, or to do something entirely different. “For me, that’s been the key to taking this in a really creative way. What might come in at that point [of inhibition] ... maybe you won’t know what to do at that point, or maybe there’s so much potential.” (personal communication, 8 October 2009)

---

<sup>50</sup> For example, De Montfort University currently includes Alexander lessons throughout the Dance curriculum for all students. Early supporters of Alexander’s technique included Sir Charles Sherrington, Aldous Huxley, George Bernard Shaw and John Dewey. Dewey wrote the introductions to several of Alexander’s books, most notably *Use of the Self* (first published in 1932). The influence of the Alexander technique on Dewey’s thinking and writing can be seen in *Human Nature and Conduct* (1930) and *Art as Experience* (1934).

<sup>51</sup> Alexander clarifies his employment of the phrase ‘use and functioning’; “in relation to the human organism, I do not indicate by it mechanical activity as such, but include in the phrase all manifestations of human activity involved in what we designate as conception or understanding, withholding or giving consent, thinking, reasoning, directing, etc. For the manifestation of such activities cannot be dissociated from the use of the mechanisms and the associated functioning of the organism” (1985, p.53).

There are correlations here with Merce Cunningham's choreographic approach which emphasises the distinctiveness of each point of space and time, often engaging choreographic processes based on chance procedures to determine how phrases are ordered, "imitating the way nature makes a space and puts lots of things in it, heavy and light, little and big, all unrelated, yet each affecting all the others" (Cunningham, 1952). This requires of the dancers a physical engagement which permits movements to follow one another in unpredictable and often inorganic sequence. Cunningham's compositions promote an attitude of perceptual readiness, requiring the inhibition of habitual reflexes and preferences so that each movement has the potential to exist independently and not be reliant on the preceding or ensuing movement for its force or character. This neutral readiness between movements creates potentialities. Thinking about doing, and then choosing to do or to not do, makes one attentive to possibilities. Adopting an attitude of open attentiveness creates a sense of objectivity so that each new choice might be considered for its independence from a previous choice. As such Cunningham's work "fulfils the function of training perception" (Fraleigh, 1987, p.135). Cunningham's work and Cunningham/Cage collaborations tend to emphasise complexity, and what Cage called polyattentiveness. Cage suggests that "one of our most accessible disciplines now is paying attention to more than one thing at a time ... You can practice it as a discipline. It is more effective than sitting cross legged" (in Kostelanetz, 2003, p.20). For Copeland,

Cunningham and Cage provide us with the tools we need ... to 'reframe', deflect, and otherwise circumvent varieties of sensory input that might overwhelm us – or at the very least, diminish our perceptual freedom. [...] The perceptual reeducation their work offers us proves indispensable on the urban street. We might even say that Cunningham and Cage provide us with a do-it-yourself survival kit for maintaining our sanity – or at least our perceptual clarity – in the global city. The vernacular glance is nimble; it's a mode of perceptual cruising – it 'takes in' diverse stimuli without becoming absorbed or captivated by them. (2004, pp.284-5)

In chapter 2 I discussed practices of improvisational awareness and attentional folds. Together with practices of attending to and inhibiting habitual responses, these cultivate a capacity to cope with the multi-tasking problems of the open work. By

raising awareness of the possibilities presented by each new moment, and habitual tendencies to make the same choices, practices of inhibition are useful disciplinary tools.<sup>52</sup>

### 3.6 gestures of remembering

In *re-membering(s)* I engage gesture-for-speaking as choreographic material by establishing a situation where the performer is called upon to remember and verbally report on her experience in as quotidian a manner as possible. This is in order to highlight the movement intrinsic to everyday gesture for speech. Throughout the rehearsal period the dancers regularly sat and verbally reported on what they could remember of danced improvisations. This activity of speaking-to-remember brought to my attention another intricate ‘small dance’ emerging as individuals searched inside and around themselves for their memories. In order to focus more specifically on these gestures of remembering, I set up another task in which I asked the dancers to remember and describe situations and events other than our current studio practice. These memories might be personal to them, so it was stressed that this was *not* a therapeutic exercise nor a confessional – the dancers chose only subjects that they were comfortable sharing. There were marked differences in the ways that each dancer tended to locate her memories and demarcate time and place in the space around herself. One example is a description given by a dancer of being at her graduation ceremony with friends, family and other graduates. As the friends and colleagues were recalled, her gestures located them in front and slightly to the left of herself. When asked about whether her family members were also there, she replied that her mother was, and as she did so turned and gestured to the right of herself. When asked about this afterwards, she commented that because she had recently spent regular time with her friends she visualised them in front of herself, whereas her mother is remembered in a different location because, although she was

---

<sup>52</sup> Cognitive scientist and Alexander teacher Rachel Zahn indicates the relationship and relevance of the Alexander Technique to current research in neuroscience and theories of consciousness (Zahn, 2005). Zahn correlates Alexander’s methods to Varela’s Neurophenomenology, and his three step formula – an adaption of the Husserlian concept of ‘*epochè*’ – for becoming consciously aware: *suspension, redirection, and letting go* (ibid, p.1, emphasis in original).

physically present at the same ceremony, they meet much more occasionally. The dancer's gestures and her use of space seemed to be playing a role in her embodied conceptualisation of time and space.

Some dancers reported that at times when they were remembering, they would visualise a disembodied image of themselves, and at others times feel themselves engaged in the activity from an embodied perspective. These perspectives are often labelled as 'observer' and 'field' views of episodic memories. Don Ihde's phenomenological thought experiments, such as imagining a parachute jump or roller-coaster ride, present methods for differentiating "a 'here-body' from a virtual or image-body as a disembodied over-there body" (2002, p.6). Ihde relates this to cinematic techniques, wherein the camera angle determines whether the roller-coaster ride for example, is experienced as if one is in the roller-coaster or as if looking at someone else in it.

Actively engaging the kinaesthetic and proprioceptive systems through the gestures of remembering capitalises on "the fact that we perceive by engagement rather than passive receptivity which is the secret of the 'Proustian effect' in memory" (Damasio, 2010, p.133). Philosopher Edward Casey argues that "[a] body memory works most forcefully and thoroughly when, rather than dominating, it recedes from the clamor of the present. As marginal, it belongs to the latent or tacit dimension of our being" (Casey, 1987, p.163). The dimension of body memory was explicitly engaged in *re-membering(s)* through this choreographic device of gestures of remembering, while the latent dimension – perhaps revealed by some of the compositional structures employed – will be explored in greater depth in chapter 5.

### **3.7 conclusions**

*re-membering(s)* is a multi-faceted exploration of time, attention, and memory, focusing on interfaces between music and dance, between performers, and between performer and audience. The aleatoric methods employed for the process and performance of *re-membering(s)*, and the resultant open work-in-movement engage

all collaborators – choreographer, composer, performers and audience – in an active, dynamical system. I propose that practices of inhibition such as the Alexander Technique, or Cunningham’s choreographic methods, present tools for coping with the choices, complexity and shifting environments of the Open Work. The choreographic processes emphasise the activities of reporting and remembering. The exploration of verbal reporting as a practice of improvisational awareness begun in *danced process #1* is developed to incorporate other sensory modalities including touch, in the form of tactual reporting. This will be expanded upon and discussed more in Chapter 6. These exercises highlight the difficulty of remembering what happened, which became a theme of this work. Gesture is employed as a choreographic device in Lucy’s tomato, the resultant small dance perhaps revealing aspects of body memory which are explored in more depth in *Bodytext*.

## Chapter 4: patterning

### **Bodyscapes and tensegrity-schemata: navigating multiple selves and unstable environments.**

This chapter outlines the compositional and mediation strategies employed in, and the concepts behind and emergent from, the making of *InTensions*. This performance work explores themes of tension and tensegrity and the potential traumatic impact of imbalances. A core concern informing the choreographic process is that postural and movement habits pattern bodyscape, and that this patterning in turn informs negotiation of a broader body-mind-environment meshwork<sup>53</sup> conceptualised as a ‘tensegrity schema’. The concepts of bodyscape and tensegrity schema are used as metaphors and as practical tools for apprehending the dynamic multiplicity of intra- and inter-corporeal, sociocultural and environmental exchanges and connections. Learning to better cope in environments that make multiple attentional demands, whether highly specialized performance situations or everyday experience may facilitate ‘navigation’ of this scape and schema through promoting skills of embodied reflection and attention.

*InTensions* is a performance work resulting from collaborative creative inquiry between myself, dance-artist Skye Reynolds, and sound-artists Barney Strachan and Nik Paget-Tomlinson. Initial research and development was supported by a choreographic residency at Dance Base, Edinburgh. *InTensions* was performed at Woodend Barn, Banchory in October 2010 as part of Dance Live 10 festival.

---

<sup>53</sup> Tim Ingold applies the term ‘meshwork’ to refer to “the texture of the world” which he conceives in terms of interwoven lines of flight rather than as interconnected points of a network. (2010, p.19)

## 4.1 background

The choreographic and collaborative process focuses on tension and tensegrity, and the potential traumatic impact of imbalances. One aim of the choreographic process is to illuminate and deepen understanding of the postural and movement habits that pattern bodyscape. The choreography and performance environment often engage the performer in polyattentional tasks that aim to create situations which evoke the effects of trauma through disrupting this patterning. Other choreographic devices include imagining dances, writing scores, reporting, and the artificial imposition of trauma.

A number of influences and ideas were explored during initial rehearsals. One inspiration, which acts as a narrative thread and empathic anchor for the work is the event of 2001 when 58 Chinese immigrants suffocated in the back of a lorry as they crossed the English Channel to Dover. The performance work does not in any way intend to tell the story of this group of people; rather we aimed “to paint the scream more than the horror” (Bacon, in Deleuze, 2005, p.27). This event was chosen because it exemplifies the tragi-dramas that may unfold when peoples are forced to flee their homeland. In this case, the immigrants endured horrific journey conditions only to find upon arrival that their transport becomes a tomb.<sup>54</sup> We also drew on the paintings of Francis Bacon for the sense of movement, viscosity and violence they evoke, the recurring motif of the scream, and the device of using lines, cubes and circles to demarcate space or direct focus. During early rehearsal sessions we used a one metre cubed steel sculptural structure as a physical ‘thinking tool’ to help Reynolds embody the sensations of confinement.<sup>55</sup> The steel form echoed Bacon’s use of lines and cubes to delineate space. As the rehearsal process evolved we dispensed with this structure and instead reduced her floor space, demarcating this in the performance with square boxes of light.<sup>56</sup>

---

<sup>54</sup> A dramatised telling of this story has been staged by the theatre company Yellow Earth; this also did not tell stories of the individuals involved in the actual event, but used it to raise awareness of asylum-seekers and immigrants. (McGavin, 2004)

<sup>55</sup> Built for a previous performance work and loaned by Skye Reynolds.

<sup>56</sup> This device refers back to earlier works of mine, including *Losing Ground* (2001), *On the Shores of Asia, or in the Edgeware Road* (2003) and *Blowup* (2008) in which the performers’ space is





**fig 11: *InTensions*. Rehearsals on the rails.** Photo: Roddy Simpson

The interactive computer controlled sound system devised by Barney Strachan and Nik Paget-Tomlinson employs metallic tape tracks laid on the floor and connected to a synthesiser using Apple Mac computers and Pro-Tools and Logic software. The dancer triggers sounds when a single-loop circuit is closed by her making contact with the rails. The sounds revealed by the trigger of the rails include recordings of Reynolds' spoken reports of her feelings and experiences during rehearsals, and of our experiments in 'sounding' the feeling. Other sounds include recordings of dancing while holding the breath, speaking long texts on a single breath, and of the siffilated exhale used in the training practice. Aspects of the sound composition are based around recordings of steel cables snapping in the Forth Road suspension bridge – a famously disintegrating structure. Three short snaps are slowed down and

---

reduced in order to stress the situation and create problems to solve.

the resultant sounds treated to highlight the many layers of timbre and tone.

## 4.2 choreographic process

The training practice engaged by Reynolds and I during the rehearsal period drew on the Bodyweather technique of yoga-massage developed by Japanese Butoh dancer Min Tanaka and his company Mai-Juku. This training practice comprises a series of yoga postures and movements which are executed with the guidance and support of a partner who applies their weight or stretch, in order to deepen or lengthen the pose. The exchange is generally wordless; the audible siffilated exhale of the receiver enables her to communicate with her partner. The receiver is both in control of and surrendering control of each moment and movement, in order to accept, test and extend psychophysical limits.<sup>57</sup> The work requires and develops trust between the partners as the receiver yields and surrenders control to her guide, and the series moves through postures which test the full range of motion and emotion. For the giver it is physically demanding and strengthening to lift, carry and support the weight of their partner. For the receiver it is not a passive abandonment of agency because the dynamic use of breath keeps both participants active in the process. Once the series is complete the roles are immediately exchanged, requiring perceptual agility to shift attention from a deep inward focus to one's own experience to an outward projection to one's partner. Immediately following this partner work we explored improvisational practices which drew on previous work for *re-membering(s)*, aimed at further opening attention and awareness to the environment around and between us. I then employed choreographic devices such as imagining dances, writing scores, and the artificial imposition of trauma. These aim to create situations which demand an attitude of perceptual alertness, and that create distance between the performer and the work.

---

<sup>57</sup> I use the term psychophysical in the sense proposed by Phillip Zarrilli in relation to his approach to acting and actor training, which draws on principles and insights of Stanislavski, Grotowski, and Artaud, and develops "a heightened kinesthetic mode in which the body 'becomes all eyes'" (Zarrilli, 2007a, p.61), whereas Psycho-Physical Therapy is a therapeutic method developed by somatic psychotherapist Bill Bowen.

### 4.2.1 imagined dances<sup>58</sup>

To initiate this aspect of the process, Reynolds stood in stillness to imagine an improvised dance, wrote it down, and then recreated the dance from her written score. Afterwards she spoke about her experience;

When I imagined it, I visualised it in the room, having trajectories that I tried to follow ... the [written] words I used to describe it were not confined enough to maybe keep to those trajectories ... it was interesting how bound by my imagination the first time I was and how even though I wrote it down, the visualisation still directed the words rather than the words recreating the dance. (personal communication, 19 October 2009)

She next stood in stillness and re-imagined the dance – this time the version she had danced from her score – then verbally reported the phenomenal sensations of having not danced the dance that had been imagined;

I can feel the roll on my body. I can feel the floor; so I've done this slow roll and melted and I can feel all the contact that my body made with the floor when it was rolling, on my body now. So where the weight released, and where the bones touched, and the organs moved and held. And then I just feel centred and can feel my feet making contact with the floor and I feel quite empty of thought, and a tingling in the hands. (ibid)

These types of exploration helped us begin to develop a felt understanding of the plasticity and layered nature of her lived experience. In the first imagining exercise Reynolds' focus was primarily visual, and in the second, primarily visceral; "It started to feel deeper textured ... the layers of the body, and getting deeper into the sensation and the feeling" (personal communication, 20 October 2009). The shifts of

---

<sup>58</sup> Philosopher Edward Casey distinguishes three aspects of intentional acts of imagination; 'imaging', 'imagining-that', and 'imagining-how'. He emphasises the sensuous form of the imaginative presentation of imaging. Imaging "occurs in the specific modalities of visualizing, audializing, smelling in the mind's nose, feeling in the mind's muscles, tasting with the mind's tongue" (Casey, 1976, p.41). To image "is to imagine in a sensory-specific way" (ibid). Casey notes that in 'imagining-how', the imaginer is envisaged as "*himself an active and embodied participant*". (ibid, p.45). Eric Franklin has developed a method of Dynamic Imagery that can be applied to improve alignment or performance output, to reduce anxiety, or as 'mental rehearsal'. According to Franklin, "the mind can affect the body ... Merely thinking about movement produces brain changes similar to those of actual physical movement" (Institut für Franklin-Methode, 2008).

focus – from the image, to the dance referring to the image, to the phenomenal experience of dancing, and the distance created through the writing of scores – were all aimed at developing a perceptual alertness, or ‘attentional alacrity’. The lightness, quickness and positivity evoked by the use of the term alacrity suggests a skillful but playful approach to polyattentiveness – something like juggling. This imaginatively led exercise informed the creation of the performance environment, but also acted as preparation for coping within it.

#### **4.2.2 artificial trauma**

A choreographic device I explored to induce ‘artificial trauma’ was to watch scenes from a horror movie (Ridley Scott’s *Hannibal*, 2001). The rationale for using the film was that while it may be disturbing, it is fictional and depersonalised, thereby helping to create distance and maintain a safe boundary for the performer so that the trauma is clearly perceived as artificial and temporary. After watching the movie, Reynolds reported on her experience through a danced improvisation. She then spoke of her experience of the dance;

Then it went into a different state ... this visceral feeling coming out of my face, and it was really quite expressive, so I felt that it was coming out from inside. So I then tried to keep this feeling inside and send it down into my legs, and I got into this quite slow but really tense place of movement that was really about the feeling getting bigger and bigger in me until it was trying to fill up every cell in my body with just that feeling. (personal communication, 21 October 2009)

Following another improvisation using the same device she reported;

...trying to think about that and then move ... the dance started getting quite heavy and kind of really rounded, as if it was inside my organs, and it was all about mushy-ness, insideness, like underneath the protective coating of the skin and the security of the bones. It was about that sort of vulnerable flesh state that is inside you, that I was trying to wrap myself around because I was feeling exposed because of what I’d just seen. (personal communication, 23 October 2009)

In a different iteration of this exercise I asked Reynolds to watch a movie scene and

then to recall and aim to re-dance an earlier, enjoyable improvisation *at the same time* as thinking about the film just watched. Witnessing her danced reports it seemed to me that this device had ‘branded’ layers of tension into and dis-integrated her bodyscape, affecting the manner of her movement and her sense of self, as is the intention in many practices of torture. This device of watching movies to induce artificial trauma was initially powerful, but quite quickly became empty for Reynolds once she became accustomed to the filmic horror. To help recapture her first visceral responses she reviewed video footage of those rehearsals including the verbal reports quoted earlier. Some of the movement material from these improvisations was later composed into the set dance phrase performed in the first section of the performance.

#### **REFER TO VIDEO SEQUENCE 6**

#### **INTENSIONS: ARTIFICIAL TRAUMA – WATCHING HORROR-MOVIE, THEN DANCING**

As alternative stimuli to horror movies, we also drew on some current news reports, and Reynolds also explored using stories from her own experience (which remained private to her). The difficulty then was that it became harder for her to maintain the distanciation from the emotional responses induced by these stories. This led to our decision to incorporate elements of the story of the Chinese immigrants in the lorry. As a real story it never lost potency as the film did, and it was not personal, yet it resonated in terms of our empathy to the situation and the people involved.<sup>59</sup>

---

<sup>59</sup> In a discussion after the performance, reflecting on the choreographic process, Reynolds said, “Some of what might come across as frustration at the process was also to do with the vibration of the content ... that we were developing and working from. Because it was dark and disturbing I think that affected my energy levels, I think they went up and down, and towards the end I sort of learned how to cope with all that, because the choreography was allowing me to distance myself slightly, but then I had to find enough space to be drawn back into it without feeling these feelings that were coming out that weren’t very pleasant” (personal communication, 2 November 2010).

### 4.2.3 gesture



**fig 12: *InTensions*. gesture.** Photo: Roddy Simpson

In *re-membering(s)* I engaged gesture-for-speaking as choreographic material. To continue this exploration of gesture, I ‘harvested’ Reynolds’ gesture-for-speech from videos of her verbally reporting on her experiences during the creative processes. Analysing and separating this gesture from the spoken words proved incredibly difficult, highlighting the intertwinement of word, thought and gesture in speaking. To anchor the gestures and maintain their intrinsic weight and rhythm, she often muttered the actual words under her breath. Without this, the gestures rapidly tended to become empty.

#### **REFER TO VIDEO SEQUENCE 7**

#### ***INTENSIONS: ARTIFICIAL TRAUMA – REPORTING ON HER EXPERIENCE OF DANCING AFTER WATCHING HORROR-MOVIES***

### 4.2.4 sounding

In both *danced process #1* and *re-membering(s)* I explored the task of reporting on-the-experience in-the-experience, using real language and clearly audible vocabulary. The challenge was to frame words that in the moment seemed appropriate, regardless of syntactic accuracy or whether they literally related to sensation, perception or

action. Words could be descriptive or associative, but they had to be words and not onomatopoeic ‘babbling’. Building on those reporting practices, one new exploration for *InTensions* engaged the notion of ‘sounding’ the experience, in which we excluded words and used only vocal sounds to report.<sup>60</sup> There are links to Artaud’s *glossolalia*, the invented language which for him countered the abjection of relying on “a relentlessly second-hand language” (Scheer, 2009, p.41) and aimed to provide a vehicle for authentic expression of thought “by reconnecting language with the body” (ibid).

I approached the activity of sounding through danced improvisations in two ways. Firstly, by imagining a traumatic scenario and allowing that to lead into movement. Secondly, through an inward focusing of attention to and following of felt-impulses to move, and then applying a secondary task of imagining the traumatic scenario. As the next stage in either improvisation, the dancer reports on her experience using only vocal sounds. I made this comment in my notebook as I witnessed Reynolds engaging in this task; “getting more into viscera, softness, organs, vibrations, resonances. Sound opened up different dimensions, awareness of space within and around yourself. Voice is like being haunted by your own story-effect, paranoia/schizophrenia” (personal notebook, 11 March 2010).

In the end I chose not to use any sounding in the performance work because the results, while fascinating, tended to evoke therapy methods or situations which we felt were inappropriate for this piece. However, some of the sessions were recorded using a head-worn microphone and extracts of these recordings were incorporated into the sound score. The effort of trying to describe a movement sensation through sound elicited some interesting physical qualities that I incorporated into the later improvisations around transformation. In a different iteration of this exercise

---

<sup>60</sup> I thank psychologist Catherine Stevens for her suggestion to explore this avenue during an informal interview in 2009 at University of Western Sydney. Reynolds had prior experience of working vocally in physical-theatre contexts, and was very open to exploring this idea of sounding as well as the other improvisatory devices, which is one reason for my inviting her to work on this project. Many dancers tend to be quite inhibited about using their voice, or lack experience of doing so, because dance is mainly engaged as a non-verbal art-form.

Reynolds explored ‘soundlessly-sounding’ her report on her feelings. This constraining of the sound seemed to intensify aspects of the physical sensation and was used as an element in her improvisational tool-kit for the performance.

#### 4.2.5 transformation

Another device employed to distance the performer and to explore the embodiment of trauma draws on aspects of the mimo-dynamic methods of Jacques Lecoq, engaging the ‘tragic’ nature and character of materials. Lecoq proposes that analysing and embodying the transformative processes undergone by materials such as foodstuffs as they are grown, harvested, prepared and cooked, offers rich methods for “looking at ourselves, at the variety of our internal cracks and divisions” (2002, p.85). Such methods are about transformation, about becoming, not about imitation.<sup>61</sup> Lecoq uses the word *mimism* to distinguish these transformative processes from pantomime or mimicry; “Mimicry is a representation of form, *mimism* is the search for internal dynamics of meaning” (ibid, p.22, emphasis in original). Our preparation for this improvisation took place in a kitchen, where we observed the transformational processes of preparing and cooking a tomato<sup>62</sup> including plunging it into boiling water, peeling off the skin, slicing it in half, scraping the seeds, chopping, frying. Back in the studio, the effort to embody these processes encouraged unpredictable movement choices and emotional responses.

Other improvisations of transformation explored the concept of ‘inhabiting’ imagined places, which included landscapes and forests. Reynolds’ embodied explorations of the imagined elements required her to either outwardly focus

---

<sup>61</sup> “To mime is literally to embody and therefore to understand better. A person who handles bricks all day long reaches a point where he no longer knows what he is handling. It has become an automatic part of his physical life. If he is asked to mime handling a brick, he rediscovers the meaning of the object, its weight and volume. This has interesting consequences for our teaching method: miming is a way of rediscovering a thing with renewed freshness. The action of miming becomes a form of knowledge” (Lecoq, 2002, p.22).

<sup>62</sup> The tomato was chosen primarily because the physical changes it undergoes in the preparation and cooking process lend themselves well to the exercise. It also refers back to the tomato evoked and described by Lucy in *re-membering(s)*. A further reference is to the truck in which the Chinese immigrants were smuggled, that was transporting tomatoes. All of these references are for our use only; they contribute to the resonance of the performance work, but they are not intended to be legible to the audience, and the performance is not ‘about’ tomatoes.



attention toward them as immersive environments – such as the qualities and sensations of wind, sun or earth *on* bodyscape – or to involute attention toward their manifestation as embodied qualities, locating the elements *in* bodyscape. A further iteration of this process required her to split her attention – for example to embody the quality of wind while at the same time exploring the external sensations of burrowing in the earth.

### **4.3 performance**

The piece opens with Reynolds standing and silently gesturing at the upstage end of two metal rails which run from centre up- to down-stage, evoking train tracks. She continues gesturing as she slowly advances along the rails, each step triggering pre-recorded spoken words. These are the words from which the opening gestures derive, but because of the unpredictability of what will be revealed by her footsteps, the gestures and words are not synchronised. She then dances a set phrase on the rails. The material derives from the ‘artificial trauma’ process and has an awkward lock-kneed quality, but needs to be precisely executed so that her feet make contact with the rails and she keeps time with the driving 5/4 pulse of the music. Initially she ignores the spoken voices, but then an additional problem is then added to her task whereby she continues the precise execution of set steps while at the same time responding to the words of the revealed text.

#### **REFER TO VIDEO SEQUENCE 8**

##### ***INTENSIONS: RAILS.***

Throughout the first section on the rails, a background soundscape<sup>63</sup> of city sounds is also revealed. The second section of the performance evokes a journey. As Reynolds makes a transitional step off the rails the city soundscape is silenced, as if marking her disconnection from a place being left behind. In the ‘journey’ section she uses sliding movements which are very simple and linear, but executed extremely slowly

---

<sup>63</sup> "The word ‘soundscape’ was coined by composer R. Murray Schafer to identify sounds that “describe a place, a sonic identity, a sonic memory, but always a sound that is pertinent to a place” (Wagstaff, in British Library, n.d.).

with a quality of sustained tension – she uses an image of a thread unspooling, evenly connecting everything.<sup>64</sup> The soundscape is composed of tones and metallic timbres which derive from the recordings of the cables snapping in the Forth Road bridge, interspersed with recordings of sustained, gasped or sounded breaths from the studio improvisations.

The journey phrase completes by returning to the rails. The first step back onto the rails, which previously revealed the city soundscape, now yields silence. This perhaps suggests that the city has been left behind but that the nature of the new location is not yet known. The performance area is demarcated by a small square of light in which Reynolds commences a danced improvisation that draws on the processes of embodied imagination and transformation. The first square of light evokes for her both confinement within the small lit area, and an imagined place which extends outside its limits. Reynolds explores these two aspects of her space, focusing her attention firstly toward the imagined external qualities, then inwards to embody these qualities, and finally splitting her attention. Throughout this improvisation her remit is to keep her breath as silent as possible. This constraining of breath instigates a physically-led process of transformation that unfolds in tandem with the imaginatively-led processes.

When she begins to struggle genuinely for air Reynolds returns to the rails which now reveal the sounds of gasping breath as if they have become a source of air. In the second stage of her improvisation, the size of the square of light is reduced to constrain her space further, while she embodies the transformation processes of tomatoes. She is also tasked to soundlessly-sound the feeling of the experience – which further disrupts her breathing pattern – and to suspend her breathing while dancing. She returns to the rails any time she needs another intake of air. Finally the square of light is reduced to a space just large enough for her to stand in. She repeats the silent gesture sequence from the start of the performance, aiming to execute all

---

<sup>64</sup> This image of the unspooling thread connecting the duration of a performance was used by director Robert Wilson during rehearsals for a production of *The Magic Flute* at the Opera Bastille, in which I performed in 1993.

the gestures on a single breath and as if she is silently screaming the words. This perhaps evokes the tragic dilemma of needing to shout for help and yet to keep silent to avoid discovery. Her feet on the rails trigger a faintly audible pre-recorded text – spoken by Reynolds following an artificial trauma improvisation – which we chose because it was so visceral and immediate;

Kind of a sort of tongue going up the back of my throat up towards my nose, coming forwards as if it wants to peel off my skin. And then my eyeballs start twisting, pull back like little tight umbilical cords, sucking back down to my belly and then there's this kind of, sort of warm fuzz, like under my skin, then it sort of creeps up the back of my neck and does this thing to my face, like this. That's the feeling that I want to do – like, up the back of my throat – and I feel like that, and yeah, just kind of flat, bit flat, sort of like a flat feeling ... Sinky heavy feeling, punctuated by these little sort of sharp jaggedy things. There's the image of this mirror, you can feel it flailing your flesh in twenty directions ... I feel quite visceral, it all feels like its under my skin, then the insides of my skin, insides under my skin sort of coming out onto the surface of my skin, and how that feels in space. (21 October 2009)

#### **REFER TO VIDEO SEQUENCE 9**

#### ***INTENSIONS: TRANSFORMATION IMPROVISATION***

#### **4.4 bodyscape, schema, image**

In the context of my own dance and bodywork practice I have often used the term body schema to refer to the structural, postural and movement habits that pattern the organisation of bodymind for coping in the environment. However, my use of the term in this way incorporates elements which others may define as body schema or body image, concepts which are the subject of current debate and disagreement. To avoid confusion, I will instead use the term *bodyscape* to indicate the patterning and intentionality of bodymind, in which movement and navigation is inherent. The term is used by art historian Nicholas Mirzoeff to indicate representations (in particular idealised representations) of the body in art. “In representation, the body appears not as itself, but as a sign. It cannot but represent both itself and a range of metaphorical meanings [...] This complex of signs is what I shall call the bodyscape” (Mirzoeff, 1995, p.3). It requires “an assembly of various fragments of bodily attributes to

create one functioning bodyscape” (ibid, p.22). For anthropologist Pamela Geller, the concept of bodyscape encourages thinking about the body “as a space unto itself, a microlandscape of individual bodily differences” (2006, p.505). Bodyscape is fluid, perspectival and multi-scalar, it is an active, imaginative meshwork of multi-layered selves.

For me the term bodyscape evokes the terrain and activity of bodymind. It embraces aspects that may be conceptually differentiated as body image and body schema. In practice these aspects leak and intertwine in various permutations as different sensory modalities come to different layers of attention. Shaun Gallagher (2006) notes the enduring confusion of understanding and use of the terms body image and body schema in the research on embodiment, and that they are often used liberally and interchangeably, such as in the writings of Merleau-Ponty.<sup>65</sup> Gallagher proposes a useful conceptual distinction between them; for him, “[a] *body image* consists of a system of perceptions, attitudes, and beliefs pertaining to one’s own body. In contrast, a *body schema* is a system of sensory-motor capacities that function without awareness or the necessity of perceptual monitoring” (ibid, p.24, emphasis in original). The operations of the schema, he suggests, “belong to the realm of habit rather than conscious choice” (ibid, p.20) with a marginal awareness of the body. Gallagher acknowledges that the distinction he makes is conceptual, not absolute, that there is plasticity in both systems, and that aspects of one can inform the other. He indicates for example how visual awareness can override body schematic functions, and how focused attention on parts of the body may alter postural or motor performance. Later in this chapter I consider some of these points from a dance and somatic perspective, and explore the concept that perceptual awareness occurs in multiple, simultaneous modes and layers.

---

<sup>65</sup> Gallagher indicates Merleau-Ponty’s use of the term *schema corporeal* “to signify a dynamic functioning of the body in its environment . . . Merleau-Ponty often left the relation between the schema and the marginal awareness [of the body] unexplained. To make matters worse, however, the term ‘*schema corporeal*’ was rendered ‘body image’ in the English translation of his work *The Phenomenology of Perception* (1962)” (Gallagher, p.20, emphasis in original).

Maxine Sheets-Johnstone argues that to separate body image and body schema risks objectifying them, and that such terms and concepts should be employed not to name but rather to question; “How do we do what we do?” (2009, p.329). She proposes the terms *corporeal-kinetic intentionality* and *corporeal-kinetic patterning*, terms that “‘kineticize’ body image and body schema, forcing recognition of their foundational impermanence, and eliminate the possibility of conceiving them as fixed and durable material entities in the brain” (ibid, p.341, emphasis in original). In relation to self-movement she argues, it is not possible to make a clear distinction between *perception*, pertaining to “objects sensed out there in the world”, and *sensation*, pertaining to “objects sensed in our bodies” (ibid, p.332). Self-movement is at once a tactile-kinaesthetic and a kinetic happening perceivable from within and without, and awareness levels for experiencing it can vary along a gradient.

The concept of body image is considered from a different perspective within some somatic practices. For example, practitioner Elizabeth Dempster points to the specialised use of the term *image* within ideokinetic work. Ideokinesis, pioneered by Mabel Todd in the 1920s and further developed by Barbara Clark and Lulu Sweigard, actively engages imagery and imagination. For Dempster,

The anatomy that ideokinesis works upon and through is an *imaginary* anatomy, that is, the libidinally invested body schema. Thinking in images is a mode of thinking through the body ... In ideokinetic practice there is no distance between body and image, and one is not working towards a singular or unified body image but a proliferation of images. Ideokinetic practice suggests the possibility of a reconfiguration of the spatiality of the image-self relation. (2003, p.49, emphasis in original)

In Mary Fulkerson’s Release Technique body images are tools derived from and to be used for developing anatomical understanding and ‘physical thought’. The image is not *of* the body but *for* the body. Release Technique aims towards an integration of idea and act;

the images become part of physical thought. The images themselves are forgotten and fully known ... Each image is to be learned in order that it

becomes part of mind and bodily intelligence and forgotten ... One no longer thinks the image but becomes it. (Fulkerson, 1975, pp.11-13)

Fulkerson's notion of *becoming* the image suggests its committal to a different layer of attention, the fully known but forgotten work resonating as tacit understanding, which may ordinarily be at a marginal level of conscious awareness but which, I will argue, may potentially be approached or apprehended through practices of embodied reflection.

#### **4.5 tensegrity schema**

The principals of tensegrity inform my dance and somatic practices primarily at the scale of the body through a focus on connective tissues, neural networks and movement dynamics, but increasingly through extending the boundaries of bodyscape and self beyond the skin-bag to the environment. This approach embraces concepts of distributed mind, agency and authorship and draws on theories of enaction (e.g. Varela et al., 1993), Extended Mind (Clark, 2008b), and Actor-Network Theory (Latour, 2007). I propose the concept of a tensegrity schema as a metaphor and as a practical tool for apprehending the dynamic multiplicity of intercorporeal, sociocultural and environmental exchanges and connections. The interstices of the constituent elements of this bodymind-environment meshwork, whether actual or metaphorical connective tissue, make for a dynamic system of shifting compressions and tensions that reaches deep into self and out to collective, incorporates non human actants, and that shapes and is shaped by experience.

The term tensegrity was coined by architect, engineer and cosmologist Buckminster Fuller while working at Black Mountain College with artist Kenneth Snelson, to describe the tensional integrity that balances the forces of compression and tension in structures. Fuller applied his ideas primarily to architectural structures, notably the geodesic dome. Thomas Myers and other bodywork practitioners extend these principles to anatomy and bodywork. Building on Ida Rolf's Structural Integration techniques, they propose alternatives to traditional 'lever-based' anatomies of the body, expressed in terms of Anatomy Trains (Myers, 2009) or Biotensegrity (Levin,

2002). These approaches focus on the crucial role played by myofascial (connective) tissue in maintaining bodily tensegrity, and on the hereditary and learned postural and movement patterns which become ‘inscribed’ in bodyscape. The interconnected nature of connective tissue is such that,

A tug in the fascial net is communicated across the entire system like a snag in a sweater ... This communication happens below our level of awareness for the most part, but through it we create a shape for ourselves, registered in the liquid crystal of the connective tissue, a recognizable pattern of posture and ‘acture’ (defined as ‘posture in action’ – our characteristic patterns of doing – by Feldenkrais), which we tend to keep unless altered for better or worse. (Myers 2009, p.33)

These characteristic patterns are influenced by the moment, morphology and memory. However, Rolf suggests that “In the average person, the pattern has become submerged under layers of fleshy disorder” (1989, p.16). The aim of therapeutic myofascial release techniques is often to facilitate better order. For Myers, the tensegrity structures of moving animals must be sufficiently boundaried to be capable of remaining intact (at least under normal atmospheric conditions) whether upright, inverted or flying. Certain structures are extended and anchored to the outside by situation dependent elements, such as spiders’ webs (2009, p.45). Conceiving of bodyscape as encompassing and in flux within a territory that extends beyond the skin-bag is akin to extending the boundaried biological body within a social, cultural and environmental spider web. If visualised in terms of fixed structures rather than schemata – if for example the mental image conjured is of neatly formed geodesic domes and tidily patterned orb-spider webs – this concept could seem too simplistic and singular. However, as Kenneth Snelson’s sculptures or Tom Flemon’s tensegrity skeleton<sup>66</sup> illustrate, tensegrity structures can be highly complex. Perhaps a more suitable arachnid for Myers’ image would be the redback

---

<sup>66</sup> Geometer Tom Flemons describes tensegrities as “all about tension and compression ... special case structures where the play of these two forces is visible in the design. But tensegrity is also certainly one of the most powerful memes in the modern era. I think this is because of the elegance and power tensegrities have to describe and illustrate the behaviour of whole systems as fractals. Tensegrity is a potent metaphor for envisioning existence in syncretic and non-atomistic ways” (Flemons, 2006).

spider, whose web – like connective tissue and like human relationships – comprises messy, seemingly random and disordered yet surprisingly efficient meshworks of fibres and interstices.

#### **4.6 attentional layers**

Feminist philosopher Gail Weiss argues that body image is multiple, “constructed through a series of corporeal exchanges that take place both within and outside of specific bodies” (Weiss, 1999, p.2). For Deleuze and Guattari we are in a social formation, stratified as individuals and held in a deeper assemblage. This is the Body without Organs (BwO), a “continually self-constructing milieu” of experimentation (2004, p.183). For Antonin Artaud who introduced the concept of BwO in the performance piece *To have done with the judgement of god* (1947), the theatre “permits the imaginative reconfiguration of [these] bodily forms, compartments and behaviours and allows the body to act in ways that are profoundly anti-social” (Scheer, 2009, p.42).

Shaun Gallagher suggests that a sense of ownership and agency is normally contained within body image, but that in cases such as schizophrenia, actions may be experienced as performed by one’s body while the source intention or command “seems to have come from elsewhere, or to belong to someone else” (2006, p.29). I propose that the reconfigurations of bodily forms, compartments and behaviours undertaken by performers might make it a normal possibility within performance situations for intentions and commands to have come from elsewhere or to belong to someone else, at the same time as being experienced as resulting from self-agency and ownership, thus resembling schizophrenic states. Philosopher Helena De Preester argues that, “[p]erformative actions<sup>67</sup> situate the body in a very specific way – a way that often oddly resembles situations of disease/deficiency as met in clinical contexts or changed bodily and/or mental functioning” (2007, p.351). Neuroscientist Olaf

---

<sup>67</sup> De Preester’s paper examines the bodily operations at work in performance. I understand her use of the term performative here to refer to the actions of performing and performance. The distinction between performance and performativity is the subject of another ongoing debate (see for example, Parker & Sedgwick, 1995, Butler, 1988).



Blanke and neuropsychologist Christine Mohr describe examples of clinical contexts and reconfigured bodily forms, including hallucinatory phenomena such as autoscopic hallucination and out-of-body experiences (OBE). In OBE states, patients may experience feelings of disembodiment, of seeing their body from a distanced and elevated perspective, or of confusion as whether they are “disembodied or not and whether the self is localized in the physical body or the autoscopic body” (Blanke and Mohr 2005, p.187). At the dysfunctional level, OBE or autoscopic hallucination may result in dis-integration of body and self processing, or between personal and extrapersonal space, due to conflicting multisensory information. In a related state known as internal heautoscopy, patients also report seeing one or several of their inner organs (ibid, 186). Some somatic practices such as Body-Mind Centering propose methods for inwardly focusing attention to, and initiating movement from, the organs. Such methods are difficult to test empirically but anecdotal evidence (including my own subjective experience) indicates that it is possible to feel *as if* differentiating and initiating movement from viscera or fluids or *as if* seeing the organs. In the exercise used in the choreographic processes of *InTensions*, the dancer stands in stillness and imagines herself executing a dance. She then verbally describes the experience of imagining dancing without dancing. One dancer reported;

It was like dancing within myself, as in ‘internalising’ the dance ... It also felt as if my organs themselves were dancing. I could almost feel my stomach twisting, lifting, holding and releasing itself. It was quite a strong sensation. It was very interesting to experience having my (internal) body effectively dancing whilst I was not actually moving. It was like discovering movement on a different (very small) scale. (personal communication, 17 January 2010)

This dancer’s experience suggests that certain somatic or performance practices may induce experiences that, De Preester suggests, in other circumstances could be classed as delusional or schizophrenic. At the dysfunctional level, OBE or autoscopic phenomena may result in disintegration of body and self processing due to conflicting multi-sensory information together with a second disintegration between personal and extra-personal space (Blanke and Mohr, 2005). I propose there is

potential therapeutic value in performatively embodying states that approach the schizoid or traumatic. If underpinned by somatic principles to provide boundaries and support for the performer, such practice may reveal tendencies toward fixity in bodyscape and tensegrity schema, while promoting alacrity of movement between layers of attention and awareness. It may thereby potentially loosen the grip of patterns of fixation (although to be clear, I am not advocating using performance *as* therapy).<sup>68</sup> We see in the case of Artaud a tragic example of an artist for whom it became difficult to distinguish between life, artifice, sanity or madness. When he was interred in an asylum in Rodez, electroshock therapy was administered “despite his claims that he was assuming roles, playing out positions, acting out the symptoms of mental anguish as any good writer would do” (Scheer, 2009, p.48). In his case perhaps the continually self-constructing milieu of experimentation was deemed too dis-organised to be socially viable.

#### **4.7 practices of embodied reflection**

In any performance situation, performers may be called upon to be singularly or simultaneously aware of the in-depth body, of peri-personal reach, of inter-personal space between selves, co-performers and performance environment, of projection to an audience, of extension through virtual environments, and of distantiation from oneself through adopting a character or through generating an external viewpoint as if from the audience’s perspective. As such, performance situations can resemble situations of disease or deficiency that could lead toward a fragmenting or distancing of sense of ownership and agency, and approach delusional states. However, learning to cope with conflicting multi-sensory and polyattentional demands through developing skills of embodied reflection may potentially lead to an expanded phenomenal sense of performing selves rather than a disintegration.

Stanislavski developed techniques for creating ‘Circles of Attention’ to provide his actors with a tool for focussing their attention and reducing the possibility of their

---

<sup>68</sup> As would be the case in the controlled setting of Dance Movement Psychotherapy or Drama Therapy.

being distracted by the audience or nerves. Norris Houghton describes the company's use of the practice;

The actor must be able to control his attention. For this the MXAT [Moscow Art Theatre] has a favorite expression: 'the circle'. In order that the actor may never be distracted from his playing he must put himself within an imaginary circle from which he cannot step as long as he is acting. This is a most important and difficult thing. Nemirovich-Danchenko, I am told, accomplished this by looking at his cuff-links; one actress closes her eyes for a minute, after that she is 'within the circle' and nothing exists but the world of the stage. (Houghton, in Wenger, 1976, p.87)

Here the aim is to delimit attention and to achieve a tightly focused state of concentration. Different circles work together to create a gradient of attentional and awareness levels. Philosopher and Feldenkrais practitioner Richard Shusterman proposes that we can conceive of at least four levels of consciousness of bodily understandings and perceptions (2008, p.54). Firstly, primitive, pre-reflective levels of awareness such as in deep sleep, although as Shusterman points out even in deep sleep we seem to know when to turn over and away from such as a pillow restricting breathing. Secondly, conscious perception without explicit awareness, such as walking through the frame of a open door without specifically registering its presence; thirdly, conscious and explicit awareness of what we perceive. At the fourth level Shusterman suggests, "we are not only conscious of what we perceive as an explicit object of awareness but we are also mindfully conscious of this focused consciousness as we monitor our awareness of our awareness through its representation in our consciousness" (ibid, p.55), as in the mindful awareness often encouraged in somatic practices. For Shusterman the Feldenkrais Method presents a disciplinary proposal for practical engagement with these conceptual levels. The method sets up movement investigations using new and often unfamiliar movements to create physical 'riddles' that help identify, challenge and reassess subjective felt understandings and habitual patterns, through subtly engaging and repatterning the nervous system.<sup>69</sup>

---

<sup>69</sup> This claim is difficult to qualify; according to practitioner Ralph Strauch, "good research

In Phillip Zarrilli's model of the actor's Chiasmatic Body "the chiasmic nature of experience as a braiding and intertwining is more complexly elaborated in the modulation of the four modes of bodily experience ... the ecstatic surface, the depth/visceral recessive, the subtle inner bodies, and the fictive body of the actor's score" (2004, p.665). During this modulating process there is dynamic shifting, retaining and discarding of attention to each layer. Zarrilli advocates psychophysical practices such as yoga, T'ai Chi Ch'uan or the Indian martial art of kalarippayattu, as well as the creative practice of performance, to facilitate attunement of these multiple layers of experience and awareness. (2007a)

Within dance, philosopher Dorothée Legrand and dance researcher Susanne Ravn conducted a phenomenologically based study comparing dancers from three different approaches – Butoh, Contemporary and Ballet – focusing on the perceptual modes of interoception, exteroception and proprioception. They suggest that different dance forms lead to different experiences of 'embodied reflection', whereby the body "can be experienced as subjective, both in perception and action, while being taken as an attentional/intentional object of perception" (Legrand and Ravn 2009, p.404). In the case of classical ballet dancers the regular use of mirrors in training and rehearsals seemed to facilitate the development of a felt understanding of bodily-form-in-space informed by an ability to create a strong mental picture of movement.<sup>70</sup> The contemporary dancers commonly reported that they developed a sense of the feel of the movement by flowing between proprioceptive and visual information; they "externalize inside sensing and internalize the external eye" (ibid, p.400). The

---

paradigms for the *Feldenkrais Method* do not exist, in part because conventional scientific epistemology does not adequately represent forms of knowledge important to the *Method*" (2007, p.1). Feldenkrais's two-fold movement re-education practice consists of verbally-directed group work known as Awareness Through Movement, and essentially non-verbal individual sessions known as Functional Integration which employs touch guidance from the practitioner. (The Feldenkrais Guild UK, n.d.)

<sup>70</sup> Regular use of mirrors and of video as learning tools, might facilitate development of capacity for mental visualisation as one becomes skilled at seeing and translating movements from an image 180° inverted. The use of motion capture systems as a means of notating dance, in which the recorded data is interpreted as 3D visualisations that can be viewed from all angles may also stimulate familiarity with seeing overhead views of oneself such as those experienced in OBE. The complexities of mirrors in perception are explored by neuropsychologist Richard Gregory (e.g.1997)

dancers working within Butoh related techniques tended towards the use of imagination, allowing bodily sensation to emerge before, and then to inform, movement. Contemporary dance and performance artists increasingly tend to work across and draw on several forms, thereby engaging a range of these and other practices of embodied reflection, benefiting from the possibilities they offer for bringing to attention and negotiating multiple, simultaneous layers of the performing body.

#### **4.8 performance as practice of embodied reflection**

Practices of embodied reflection present tools for developing the attentional alacrity demanded by some performance situations, but include the practice of performance itself. Here I give three examples – of working with marionettes within théâtre-noir, of performance work by Stelarc, and of working within the interactive performance environment of *InTensions*.

##### **4.8.1 manipulated/manipulating body**

In the 1990s I worked with the Paris-based visual theatre company of Philippe Genty. Many of the company members were trained at the Jacques Lecoq International Theatre School, and our training and creative practice included techniques such as the transformation process used in *InTensions*. Genty's work employs materials, objects and marionettes – often Bunraku style rod manipulated characters – within théâtre-noir lighting. For théâtre-noir (literally 'black theatre'), precisely directed lanterns create a sharp corridor of light, in front and behind of which is extreme darkness. This makes a clear demarcation between being in and out of the light. The performers are dressed in black velvet, allowing them to 'disappear' into the dark area and thereby effect seemingly magical illusions. This requires exacting physical precision on the part of the actors, in order to manipulate the puppets or objects in the light without themselves crossing the line. Performers work either individually or collectively to manipulate the marionettes, with up to three actors coordinating their actions to enliven one character. The analysis of movement required to enliven a character – aspects such as breaking inertia, mass, fixed points,

anchoring to gravity – serve also to inform the actor’s understanding and awareness of their own movement. They have to further create emotional distantiating from the puppet or from a character so that anger manifested in the puppet, for example, does not cause the actor to also manifest angry movements, or vice versa.

A colleague in the company, actor Harry Holtzman, described his experience of the layered attentional aspects of performing within théâtre-noir and working with the marionettes;

It was as if you placed yourself into that which you were manipulating at the end of your fingertips. I think I’d call it ‘extrospection’ ... it’s applying yourself, or just self without the ‘your’, to an architecture outside of you, something that is physically real, materially real ... You do not take possession of the marionette and oblige it to do your bidding, but you allow yourself to be dis-possessed, to move house as it were into new digs. And in the moving you are no longer you, but you are just the animating presence. The other exists because you were able to move out of the way ... You become little more than a shadow. The being in the light is all there is. At best, you are able to let go or get out of the way and truly inspire, breathe life into the object at the end of your black-gloved fingertips. (personal email communication, 22 July 2010)

Holtzman described the experience of working within théâtre-noir as “a huge lesson in humility ... and as a result a very practical lesson in performing” (ibid). For myself, entering the light from working behind it is a paradigmatic moment which illuminates awareness of and agility within the tensegrity schema. From being absent and disappearing in order for the marionette to exist through her as the manipulator, the performer has to become immediately full, present and projecting when she emerges into the light and becomes visible to the audience, either as herself or her character, whilst also maintaining kinaesthetic and proprioceptive awareness for precise articulation of herself and the marionette.

#### **4.8.2 split body**

For Merleau-Ponty the body has plasticity. To become habituated with tools and auxiliaries such as hats, cars and visually impaired person’s canes is to be

”transplanted into them, or conversely, to incorporate them into the bulk of our own body” (2002, p.166). The plasticity of bodyscape can incorporate prostheses, and accommodate phantom limbs or ‘splittings’ of the subject as in pregnancy.

Australian artist Stelarc has explored this plasticity through incorporating technologies onto and into his body, challenging the boundaries of his bodyscape. In his *Suspensions* large hooks pierce the skin from which the body is suspended.<sup>71</sup> He has inserted sculptures into the organs (*Stomach Sculpture*), connected his body to the internet (*Ping Body*), integrated technological hardware (*Third Hand*), exoskeletons, virtual prosthetics (*Prosthetic Head*) and grown new tissues (*Extra Ear*). In the performance *Fractal Flesh*, the agency of the technologically augmented and extended body “can be electronically extruded on the Net” (Stelarc 2012). Stelarc’s left arm is connected through a computer interface to the Internet and can be controlled by remote audience members who cause involuntary twists, twitches and jerks. At the same time, he wears the robotic Third Hand on his right arm which is wired in to his nervous system and over which he exerts voluntary control through muscles in his leg and abdomen. Stelarc asks us to consider,

a body whose authenticity is grounded not in its individuality, but rather in  
the MULTIPLICITY of remote agents that it hosts  
a body whose PHYSICALITY IS SPLIT. (ibid, emphasis in original)

To achieve such a dividing of attention, to be at once doing and non-doing, seems to involve bringing one layer (and side) of the performing self to attention while

---

<sup>71</sup> Stelarc has performed 25 Body Suspensions between 1978 and 1988, and in March 2012 gave a single performance at Scott Livesey Galleries in Melbourne for the opening of a retrospective exhibition of these works. (Scott Livesey Galleries, 2012). For Stelarc, “I think metaphysically, in the past, we’ve considered the skin as surface, as interface. The skin has been a boundary for the soul, for the self, and simultaneously, a beginning to the world. Once technology stretches and pierces the skin, the skin as a barrier is erased” (in Atzori and Woolford, 1995). Bodyworker Deanne Juhan argues that because skin and brain tissue develop from the ectoderm layer of the embryo, and that the skin can be considered as the outer surface of the brain, or the brain as the deepest layer of the skin (1987, p.35). To take this argument to its limits would suggest that the suspension pieces involved a piercing and stretching of the brain. However for Stelarc, “We shouldn’t start making distinctions between the brain and the body. This particular biological entity with it’s [sic] proprioceptive networks and spinal cord and muscles, it’s the total kinesthetic orientation in the world, it’s the body’s mobility which contributes towards curiosity” (in Atzori and Woolford, 1995).

actively abandoning attention to and agency of another. Stelarc states that he does not approach his work as a ‘discipline’; “when I start feeling the performances have become, in a sense predictable, because the techniques assume more importance than the creative impulses, then I stop doing them” (in Atzori and Woolford, 1995). However, the particular splitting of attention in a work such as *Fractal Flesh* seems to present a situation which may function as a practice of embodied reflection, potentially revealing and developing awareness of the multiply layered inconsistency of experience.

#### **4.8.3 (in)tensioned body**

The performance environment of *InTensions* incorporates the interactive system employing two metallic tape tracks laid on the floor and connected to a synthesiser. Sounds are triggered when the dancer closes a single loop circuit by making contact with her hands or feet. The narrowness of the rails demands balance and movement precision, while the sounds they emit act to disrupt the flow of the work. Reynolds has to split her attention in order to ‘listen through the feet’ and then make choices to adjust the timing of her footfall to control the length of revealed fragments of text and/or to adapt her movement to respond to the words of the texts, while at the same time maintaining precision in her dance material in order to remain on the rails.



**fig 13: *InTensions*. listening through the feet.** Photo: Roddy Simpson.

This activity of hearing through the feet, and the implications of every footfall



potentially creating sound, brings the tactile experience of the soles of the feet meeting the ground to the fore of attention (c.f. Schwitzgebel, 2007).<sup>72</sup>

During the choreographic process, the exercise exploring artificial trauma tasked Reynolds to watch a horror movie scene, then to recall and aim to re-dance an earlier, enjoyable improvisation at the same time as thinking about the film. Here, the splitting of her attention resulted in a curious, awkward tension patterning of her bodyscape in movement. The dividing of her attention in both these examples is very demanding and has the potential to result in cognitive bottleneck. However my argument is that by attuning the connection between the feet and the ears for example, the demands of cognitive processing might be distributed – referring back to the proposal made in chapter 2 that ‘the muscle is a mind’.<sup>73</sup>

Reynolds sometimes found the multiple attentional demands of these choreographic devices quite frustrating, harking back to the discussion of paralysis-by-analysis in Chapter 3. I had already noted in *re-membering(s)* that while the dancers *aimed* to divide their attention – in ‘Pools’ for example – we all admitted our doubts that we actually achieved the task. The taskscapes I devised for *InTensions* call on layers of attention that may be incompatible or impossible to simultaneously achieve. For processes such as the transformation exercise it may be more useful to demarcate a single circle of attention – and certainly for Reynolds this yielded the richest transformation improvisations and deepest experience – than to multi-task. The difficulties of multi-tasking were compounded by the fragmented engagement with the Bodyweather yoga-massage practice employed in the creative process,<sup>74</sup> and the limited time available for her to rehearse within and become adept with the particular

---

<sup>72</sup> Some Japanese Buddhist temples incorporated ‘Nightingale floors’, or *uguisubari*. Nails were incorporated in floorboards in such a way that they squeak, or chirp like nightingales, when walked on, acting as an alarm system to defend the temples against Ninja attacks. (Johanna Hällsten, comment made in her paper, *Sonic Movements - Spatial Reflexivity*, presented at the Bodies in Movement conference, Edinburgh, 2011)

<sup>73</sup> In the Anatomy Trains model, Thomas Myers suggests that the Front and Lateral Line of myofascial tissue have fairly close correspondence to the Stomach and Gallbladder meridians in Traditional Chinese Medicine (2009, p.274), both of which connect feet to ears. Viewed from these perspectives, the connections are made through the tensions and compression of tensegrity or energy flows.

<sup>74</sup> Nor did we explore other aspects of the Bodyweather practice, such as working outdoors, in extreme slowness and working blindfold, which can also facilitate embodied awareness.

attentional demands of this interactive system. This is ironic because working within the performance environment in itself constitutes an attentional practice. The difficulties we encountered serve as a useful reminder that it is only through *doing* that somatic and performance practices facilitate development. In chapter 5 I expand the discussion about practices *for* and *in* interactive environments.

#### **4.9 conclusions**

I have argued for a model of self as highly plastic, plural, multi-layered and performative, functioning within a bodyscape-environment meshwork conceived as a tensegrity schema. I propose that certain performance and somatic practices offer practical and conceptual strategies to facilitate embodied reflection and nurture attentional alacrity. Employing performance and somatic techniques to embody states that approach the schizoid or traumatic may reveal tendencies toward fixity in the postural and movement habits that pattern bodyscape and tensegrity schema. Improved navigation of the unstable terrain and shifting attentional layers of this scape and schema may lead toward an expanding phenomenal sense of performing selves and help loosen the grip of patterns of fixation. The choreography and performance environment engage the performer in tasks that aim to create situations evoking the effects of trauma, through dividing attention and disrupting this patterning. Such taskscapes also serve to develop polyattentiveness which may facilitate the capacity to cope in complex or potentially traumatic situations, whether encountered in specialized performance settings or everyday experience.

## Chapter 5 languaging

### ***Bodytext: speech, script, (re)action, (re)iteration.***

This chapter focuses on *Bodytext*, a performance and interactive installation artwork made in collaboration with visual artist Simon Biggs, and with audio by composer Garth Paine. *Bodytext* involves speech, reading, writing and the moving body. The dancer's movement and speech interact recursively within an augmented computer controlled environment employing real-time motion tracking, voice recognition, interpretive grammar systems, projection and audio-synthesis. The choreographic processes interrogate the notions that language informs and scripts the movement and tension patterns of bodyscape, which may in turn inform cognition. I outline and reflect upon interactive performance environments and practices for coping within them, and consider aspects of embodiment that may be highlighted by interactive practices and performances. These ideas emerge from the collaborative working process but are presented from my choreographic perspective and may not represent views shared by the other artists involved.

The work was developed whilst the artists were in residence at the Bundanon Trust, New South Wales, and the VIPRe Lab (Virtual Interactive Performance Research Environment) at the University of Western Sydney. It was premiered at Critical Path, Sydney as part of SEAM 2010.<sup>75</sup>

**REFER TO VIDEO: *BODYTEXT***

**PERFORMANCE AT *CRITICAL PATH, SYDNEY.***

---

<sup>75</sup> SEAM: Somatic Embodiment, Agency and Mediation in Digital Mediated Environments. Symposium organised by Critical Path (Director, Margie Medlin) and University of Western Sydney (Dr. Garth Paine)

## 5.1 background

*Bodytext* evolves from earlier research and development for *<bodytext>* (2005) by myself in collaboration with visual artist Simon Biggs.<sup>76</sup> This earlier work is part of a longer term project developing a range of specific interactive real-time authoring systems for use in performance and interactive installation works. In *<bodytext>* we sought to ‘unspool’ memories from the body and to rewrite them into a digital record, relocating them away from the corporeal self and without recourse to the linearity of traditional recording systems. This was explored using pre-recorded motion-capture data which then animated live video image of the dancer, employing *Myron* software.<sup>77</sup> In a later iteration of this work, live motion-capture data of a dancer animated the face of artist Arthur Elsenaar who was wearing a system of electro-stimulators (developed by Elsenaar) which allow control of the facial muscles. The dancer’s movement signature was therefore potentially revealed as facial expression of another person – a very particular and poetic kinaesthetic empathy.<sup>78</sup>

A primary reference for both *Bodytext* projects is *Krapp’s Last Tape* (1958) in which Beckett’s protagonist revisits commentaries and memories of his life, which he records onto audio tape spools. Krapp rewinds, replays and records further commentary on recordings from previous years, picking up spools at random and thereby fragmenting the linearity of the indexed memories. As a starting point for *Bodytext* we asked the question, what if Krapp went digital?

---

<sup>76</sup> Other collaborations with Simon Biggs include *I am, I was (a dying swan)* (2001), an interactive performance within a video image-decay system. The choreographic material referenced Anna Pavlova’s solo and the poetry of Paul Celan, but was developed working entirely within the system; its possibilities and constraints therefore led my choreographic decisions. For *Waiting Room* (1998), an interactive tango by Biggs and composer Stuart Jones, my role as choreographer was determined by the technology as much as the concept, in that my material had to be performable in slow-motion, phrases had to be recombinant both forwards and in retrograde, and all performers, male or female, adopted all roles. *Blowup* (2008) is an interactive-installation environment in which live movement data is used to manipulate, fragment, distort and composite the live video material.

<sup>77</sup> *Myron* software was initially written and developed by Josh Nimoy, and further developed by Nimoy with Simon Biggs in 2004 to allow simultaneous video-tracking and image processing.

<sup>78</sup> For more on this work, see Biggs & Hawksley (2006)

## 5.2 choreographic process

My choreographic process for *Bodytext* began by engaging the notion that autobiographical memories can be conceived of as tape spools located in the body, containing stories which are replayed, rewound, replayed. The process comprised firstly an ‘excavation’ of what are conceptualised as *bodystories*, and secondly reporting on the movement experience or memory through dance or words, written or spoken.

For the excavation process I undertook a series of movement explorations informed by the Eyerman Technique, which combines the dynamic postural alignment of Yoga with the minimal movement explorations related to the Feldenkrais Method. By using this practice to focus my awareness of self-movement inwardly, I aimed to identify ways in which the morphology of bodystories might be subjectively experienced. This movement inquiry then lead into a danced improvisation, attending to and following felt impulses to move (as practised in previous works of this thesis) thereby creating a further riddle<sup>79</sup> that might illuminate aspects of bodystories.

The second stage of the choreographic process involved reporting on these excavated bodystories. The reports comprise texts of words or of dance material, relating either to autobiographical accounts, embodied memories, description of movements to be performed, or phenomenal experience relating to these movements. The dance texts are choreographed with particular reference to dominant bodystories, idiosyncratic movement signature and style, and also to recognisable codified dance vocabulary. In my case such vocabulary displays the influence of various forms – e.g. Classical Ballet and Cunningham Technique – on my personal movement patterning, and also includes phrases of choreographic material devised by other choreographers. The

---

<sup>79</sup> In chapter 4 I described how the Feldenkrais Method uses new and often unfamiliar movements to create physical ‘riddles’ that help identify, challenge and reassess subjective felt-understandings and habitual patterns. Choreographer Deborah Hay comments, “I study riddles, some of which are *what ifs* that arise when I am dancing ... The manner in which these *what ifs* can thrill and annihilate the body’s reasoning process, overwhelming it with self-reflection, is similar to the experience of beginner’s mind in Zen Buddhism. Dance is the field trip I conduct in order to interface with this experience” (Hay, 1998, p.xxv).

inclusion of these phrases raises questions of authorship, ownership and referencing – is the accessing and utilising of my deeply embodied movement memories of another’s material remembering or stealing? In the performance of *Bodytext* I speak this question while repeating (quoting? copying? stealing?) a choreographed phrase from Trisha Brown’s work *Opal Loop* to bring this problematic to the fore. The written texts are intrinsically linked to the choreography. They function at times as poetic labels, associative indicators or mnemonic tags, refer to either movement, body or memory data, and contain a mixture of tenses and voices.

These danced and written texts are composed into twelve haiku-like phrases, each four or five lines long.<sup>80</sup> The dance phrases are considered as *dance packets* and each individual line of words as a *text-object*. The number of words in each text-object is limited to between five and eight, so as to maximise the potential for the voice recognition software to recognise my speech correctly and for the interpretive grammar software to identify content that can be exchanged when the text-objects interact. Another factor determining their length is that because each line of words is recognised by the system as an object, a return cannot occur mid-sentence as per normal typed text – if it did, it would split the object. The length of sentences is therefore determined by the visual layout of a full screen of text-objects so that it looks like writing rather than a list. Each text-object must also contain sufficient grammatical complexity for the rewriting software. The requirement for brevity together with grammatical complexity lends a certain poetics to the composition of the written texts.

---

<sup>80</sup> In initial trials for this work, I experimented with improvised dance and speech, as per *danced process #1*. However my conclusion was that the unpredictability of the spoken vocabulary introduced too many variables. I therefore set the dance material and words.

#### **BODYTEXT TEXTS**

STANDING ON THE STEPS FALLING UP.  
TRAVELLING STEPS IN THREE  
GATHER ROUND TO LIFT AND OPEN  
DARTING FORWARDS THEN GRAB AND SHOOT.  
HEART HIGH LIFTING TO THE SKY.

ANCHOR THE HEEL TO SWING OPEN AND CLOSED LOOP.  
SLIDE AND SLICE ACROSS THE KNEECAP  
IS THIS REMEMBERING OR STEALING?  
HAND ON HEART.

COLLAR BONE DRIFTS TO THE LEFT  
I GOT THE NEWS IN A PHONE CALL.  
FEELING FOR THE FLOOR  
ROLL BACK DOUBLE BACK AND STAND.

FEELING SCARED BUT LET GO AND JUMP.  
LEG SWINGS OPEN DEEP BREATH  
SEEMS LIKE ETERNITY FALLING.  
FOLD TO DROP AND TWISTED SPINE

ARMS FLAP LIKE BLACK WINGS.  
LOOP THE SHOULDER OVER BUT TRAP THE FOOT  
CUT THE NECK WINDING ACROSS THE BODY TO TWIST.  
KNOCK THE ELBOW BACK SWING TO RICOCHET  
HAND STAND WITH LIFT AND WRAPAROUND.

DIFFICULT BEHAVIOUR WITH TILTED ATTITUDE.  
REACHING TO ATTACK.  
SLIDE SIDE ANGLE AND DROP  
SURRENDER TO FALL AND CATCH.

I AM FALLING HE DOES NOT CATCH ME.  
ELBOW ROTATE BACK HAND AND SPLAT.  
LONG THROUGH THE BACK IN THE MINDS EYE.

SAILING AWAY WITHOUT ME  
CRACKS ON THE STONE AND COLLAPSE.  
DULLS THE PAIN MAZURKA CHANGE THE CHANGE.

TUMBLING AND TURNING INTO DUCKS.  
DROP AND POP, LETTER TO STEVE.  
ON TO THE KNEES.

A TENDENCY TO DRIFT TO THE RIGHT.  
FALL AND COLLAPSE THEN CIRCLE THE ARM  
ORGANISE INTO FLYING ANGEL.  
SWEEPING THE HORIZON

SHE WAS WALKING IN A TOWN SHE DOES NOT KNOW  
RUNNING INTO BLACK  
REVERBERATING THROUGH THE STERNUM.  
ELBOW LOCKS SUSPENDING THE BREATH.

UNWIND TO NOBLE EXTENSION  
FOLD AND CORKSCREW ROUND.  
LEFT FOOT FAILS SHE WAS REALLY OLD.  
KRAPP'S LAST LOOP.

#### **SHIFT**

**fig 14: Bodytext text.**

### **5.3 interactive system**

The interactive system for *Bodytext* comprises computer software, hardware and wetware – the interactor and artists. These combined technologies, agents and systems permit augmentation and extension of our capacity to function and explore the artistic concerns of the piece in novel ways. The elements of the interactive system are movement, sound, speech and text. These elements present a selection of ‘potentials’ that are ‘live’ and non-linear. The voice commands given by the interactor permit her to determine the ordering of events and materials during the course of the performance, and she can choose not to execute all sections. The performance is therefore not fixed and like *re-membering(s)* is an open work.

#### **5.3.1 speech and sound**

The dancer’s live speech is acquired using voice recognition software (Dragon MacSpeech Dictate) using a wireless microphone, and her words are written and projected on a video-projection screen as text-objects. The Dictate software requires words to be spoken extremely clearly and the microphone has to be trained to recognise the voice of a specific user in a controlled acoustic environment, which then has to remain constant. This determines a particular speech delivery from the dancer, which is achievable in the opening section of the performance because she stands still and dictates the full text. However, in the second section, she dances and speaks at the same time. This intentionally introduces errors because the mouth and microphone are not always in the optimum alignment, and because of extraneous noises such as footfall, clothing and breath.



standing on the steps falling up travelling steps in three  
gathering round to lift and open darting forwards then grabbed and shoot heart high  
lifting to the sky anchor the field to swing open and close loop  
slide in slice across the new business remembering or stealing hand on heart  
collarbone drifts to the left got the news in a phone call feeling for the floor  
rolled back to double back and stand feeling quite scared but let's go and jump  
left leg swings open and then a deep breath seems like an eternity falling  
faults to drop and twist the spine arms like wings and pop back  
I want to jog and John moved the shoulder over but catching the foot  
that the neck winding across the body to twist knock the arm backswing and ricochet  
handstand with lift and wraparound difficult behaviour with tilted attitude  
reaching to the attack slide side angle and drop surrendered to fall and catch  
I am falling that he does not catch me elbow rotates back to catch the hand and  
splat long through the back in the mind's eye cracks on the stone and collapse  
wine dark sea sailing away without me dulls the pain mazurka change the change  
suitcase tumbling and turning into ducks splat the foot  
lift and fold through to drop and pop letter to Steve on to the needs  
tendency to drift to the right tips for a collapse then circle the arm  
organising to flying Angel sweeping the horizon  
long reach through to fold and stand walk and fall but running into black  
reverberating through the sternum elbow locks suspending the breath  
unwinds to noble extension then corkscrew round left foot fails she was really old  
Krapp's last loop

**fig 15: *Bodytext* – screen display of full text written using Dictate software, prior to interaction.**<sup>81</sup> Image: Simon Biggs

The sound component of the interactive environment is by composer Garth Paine who often engages a neural network approach to computing, in order to construct data processing matrixes which have the ability to learn patterns and therefore evolve according to conditioning (Paine, 2009). His work focuses primarily on the creation of interactive immersive environments and how the morphology of the interaction shapes sound, space, motion or emotion. For *Bodytext* Paine made recordings of me speaking the texts, – both while standing still and while dancing – of me sounding the dynamics or breath of a dance phrase,<sup>82</sup> or of me giving whispered reports of my subjective experience of dancing the phrases. These recordings became the foundation material for structuring sections of sound, or ‘potentials’, which are

---

<sup>81</sup> This screen-grab contains several errors introduced when the voice recognition software misheard my speech. The image also shows how the earlier texts have begun to fade; this is described later in this section.

<sup>82</sup> Drawing on the choreographic device used in *InTensions* and described in Chapter 4.

integrated with live recording during the performance. Using the Kyma/Pacarana system developed by Symbolic Sound, Paine employs a number of techniques including granular and additive synthesis and resynthesis methods, to sample and treat the recordings. Some are analysed using a fast Fourier transform (FFT) algorithm which then allows both pitch and temporal structure of the voice to be manipulated in real-time during the performance. The sound potentials are responsive to the dancer's movement, driven by data from *Myron* relating to the dancer's position, orientation and dynamics. They are structured into sections which are created in a timeline. This stops and waits at points, but the algorithms remain active until they receive a command to proceed into another stage of the work. A number of 'trigger' words are also assigned which initiate sonic responses, including that those words be relayed back through the speaker system. The volume of the sound varies according to the spatial location of the dancer, and to interactive cycles which are determined by Paine. All these variables intentionally create confusion for the Dictate software, resulting in a significant number of errors being introduced into the speech recognition.

Several command words are assigned which determine or initiate different settings and potentials of the interactive system when spoken by the dancer;

CONTROL	to retune Myron
SHIFT	to make the text and sound interactive with the action
COMMAND	to begin writing from the top left of the page
RETURN	to begin writing from where on the page it left off
DELETE	to erase the text and end the section
SCATTER	to redistribute the text-objects evenly if they cluster
ESCAPE	to move all text on one Ascii position

These commands are only effective when spoken through Dictate software; the control of the system therefore lies entirely with the performer's voice. Once the performance has been set in train, the evolution of events cannot be overridden by

commands from the computers of the visual artist or composer. The dancer becomes intentionally trapped in the interactive system if her voice cannot be heard or recognised. She has either to shout, or to retreat to pre-specified locations where the volume levels may drop, although this is further contingent on the stage of a cycle of interactivity at that time. The sound is therefore a very live element of the emergent environment that the dancer is coping with.

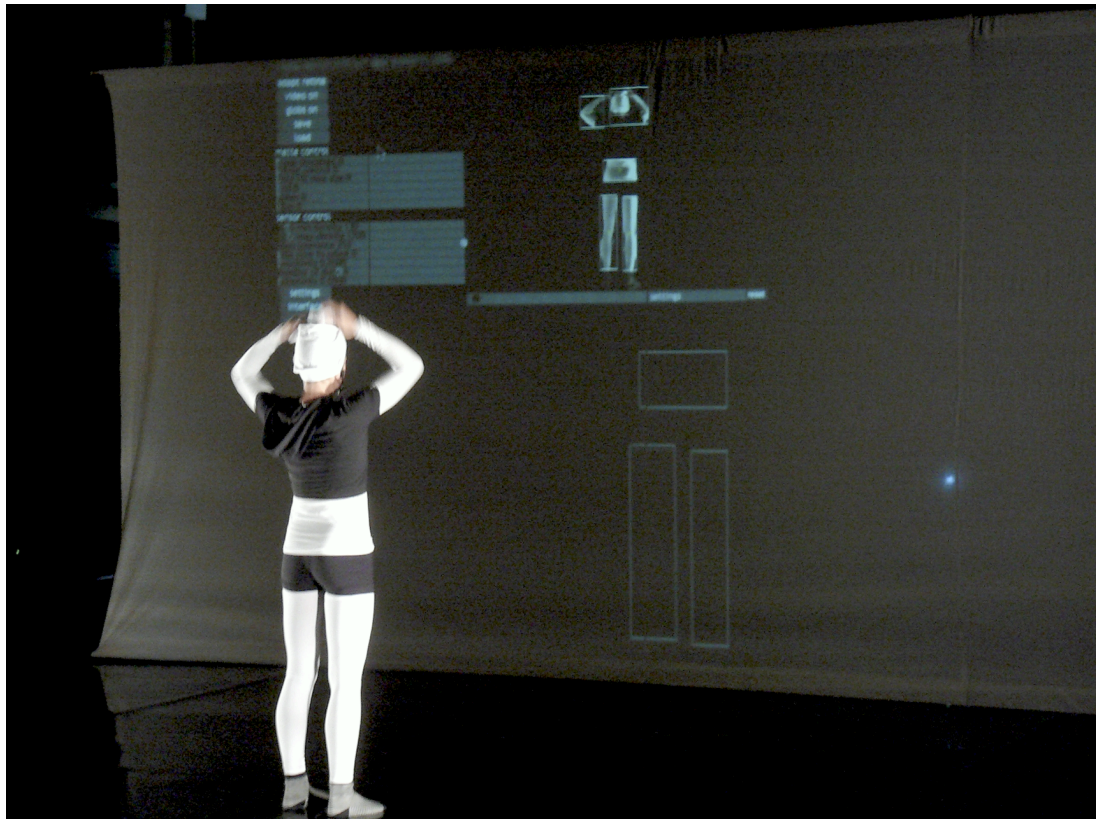
### **5.3.2 movement and text**

The dancer's movement across the performance space is tracked using the video tracking software *Myron* which identifies objects for tracking by recognising difference of tone and colour. To facilitate this the dancer wears black or white clothes that segment the limbs, head and torso into multiple, trackable points, or 'globs'.<sup>83</sup> When a glob is co-located on the projection screen with any of the text-objects, the text-object responds to acquired movement data. This response is not a one-to-one mapping of the dancer's movement. Rather, the text-objects acquire data energy relating to the speed, acceleration, direction and orientation of the dancer's movement. The movement and behaviour of each text-object is a function of glob size and vector. They have random orientation and can tilt to the right or left, but once they start to move they then always move in the same direction until a reset returns them to neutral. The expenditure of this energy is determined by the presence and proximity of other text-objects which disrupt their momentum. Biggs likens their behaviour to crossing a crowded bar – you ask the nearest person to let you through, but everyone else needs to shift too, affecting the entire environment.<sup>84</sup> At times the stored energy is released in an unpredictable surge causing the text-objects to spin wildly. While the initial movement of the text-object relates to the movement of the body, once in motion it is contingent on the text environment into which it is propelled.

---

<sup>83</sup> In this case the number of points was limited to 24

<sup>84</sup> Discussion during rehearsal at Bundanon, recorded in my personal notebook.



**fig 16: *Bodytext* – Myron's view of the dancer is displayed on the screen, rehearsals at Critical Path.** Photo: Garth Paine

When two texts come into contact with one another they intersect, and as they do so, rewrite themselves by exchanging equal grammatical content such as nouns or verbs. The emerging recombinant descriptions determine what will be danced next. The software that permits the recursive interaction of the texts is an interpretive grammar-engine developed by Biggs.<sup>85</sup> The rewriting activity results in new sentences that are grammatically correct but may or not be meaningful. For this exchange to occur each word is allocated a grammatical value. Words which could be both nouns and verbs are here only considered as having one value; at this point this is a necessary limitation for the software but is an area for further research and development. In a different section, the text-objects do not only exchange content as they intersect but their symbols also shift along one Ascii key. This results in groups of characters that

---

<sup>85</sup> Biggs has been developing and employing generative and interpretive grammar systems into much of his work since 1994.

are nonsensical but nonetheless retain the form of and a resemblance to structured, meaningful writing codes.



**fig 17: *Bodytext* – screen displays texts moving in response to dancer's movements, rehearsals at Critical Path. Photo: Garth Paine**

**REFER TO VIDEO SEQUENCE 10**

***BODYTEXT*: SCREEN-GRAB SHOWING THE TEXTS MOVING AND REWRITING IN RESPONSE TO THE DANCER'S MOVEMENT.**

**REFER TO VIDEO SEQUENCE 11**

***BODYTEXT*: OPENING SECTION SHOWING THE DANCER'S MOVEMENT TO WHICH THE TEXTS ON THE SCREEN RESPOND.**





**fig 18: Bodytext.** Screen-grab of texts after they move and interact in response to my movement. Image: Simon Biggs

## 5.4 performance

The elements of the interactive system are non-linear, a selection of potentials, the ordering of which is determined by the interactor during the course of the performance. For the initial performance a decision was made to present the work linearly, divided into four sections which occur chronologically. Predetermining the order of events allowed us to establish a degree of control over the evolution of this particular iteration of the work, and to check that each variable responded as anticipated. However, it could have been performed differently and what is described here does not represent a definitive version of the work.

### 5.4.1 speak and write a dance, dance and rewrite, read

In the opening section of the work a whole screen of text is written up as the dancer stands in stillness, eyes closed, and speaks the words of the text-objects. She then

dances the choreographic material that has been described, and her movement causes the texts to move, recombine and rewrite one another. The interactive text-objects respond to the dance material, rather than her improvising her movement to respond to them.<sup>86</sup> Using the COMMAND cue the text-objects are then returned to a linear arrangement as if once again a page of writing. This allows the audience to read the text and register the changes effected by the movement.<sup>87</sup>

#### **5.4.2 dance and write, dance to re-write, re-read, dance and re-write**

In the second section, the dancer writes down another screen of text, but this time she is talking-while-dancing. The dance material is adapted slightly to accommodate the need for the mouth to be aligned directly in front of the microphone, while the timing and placing are adjusted in order to talk and dance without rushing the spoken text or delaying the danced text. Using the SHIFT command, the written texts are animated. After they move and rewrite, the dancer reads the re-written texts out loud, at the same time dancing related movements. If no errors were introduced into the initial dictated text, the re-written texts should ideally give a reordered version of the initial script, and her task in hand is a straightforward recombination of the previously determined choreographed material. However the extraneous noises and the reduction of precision in dictation of the words because she was talking-while-dancing introduce comprehension errors, and therefore new vocabulary, into the text which she has to ‘translate’ in real-time.<sup>88</sup> Her improvised decision making therefore becomes an element of the performance. The new dictated words over-write the previous written words which, due to a fade function, are gradually receding from view. The visual result is of a palimpsest – older, fading texts overlaid by new – emphasising the temporal aspects of memory and questioning the hermeneutic indexing of text.

---

<sup>86</sup> Although there is a constraint that she must improvise if necessary to avoid the text-objects clustering. If they do, they become stuck.

<sup>87</sup> Some audience members in the first performance reported that they did not at this point, realise that the texts had rewritten. This may be partly due to the fact that the first text fills the entire screen. The density of the imagery when they are moving may be too complex at this stage, so that people tend to abandon the effort to read the texts and view them rather as background.

<sup>88</sup> I discuss concepts of translation in Chapter 6.

### **5.4.3 repeat, re-write, re-dance**

This section uses just two dance packets, thereby limiting the number of words in activity and increasing the likelihood of pre-assigned trigger words appearing in the rewritten text-objects. The dancer dictates the words in stillness in order to maximise the accuracy of the voice recognition software. She then dances the related dance phrase, causing the text-objects to move and rewrite. This whole process is then repeated, doubling the number of interactive words on screen. In a third iteration of the process, she follows the movement dynamics of the text-objects, while at the same time reading out loud the re-writing texts, and dancing according to their written instructions. The trigger words meanwhile cause recordings of her voice to speak the same words through the speaker system, introducing confusion and errors into the voice recognition.

The text-objects the dancer now reads bear little resemblance to the original and she faces increasingly complex challenges to interpret or translate the written text into dance movements. Because of the compositional device used to instigate the interactivity in this section, many words tend to repeat, producing written phrases that translate into almost obsessively repeating movement material – harking back to the initial premise of signature movement habits and patterns.



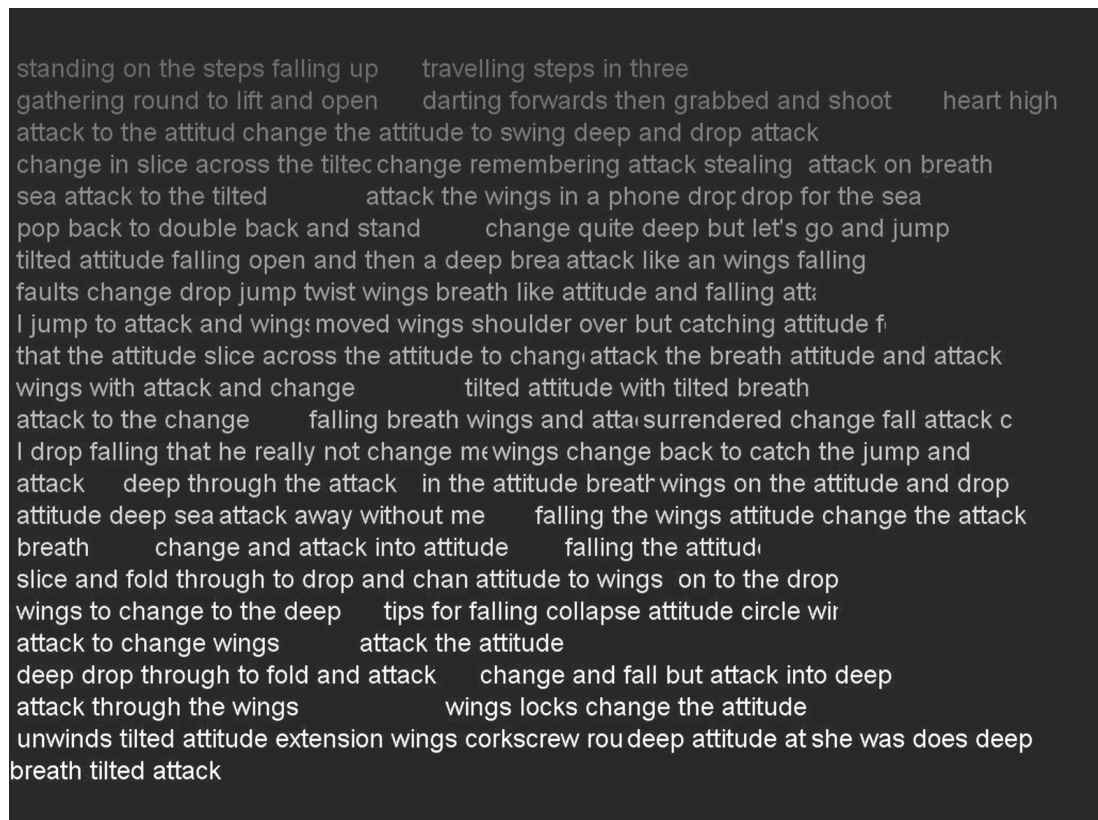


fig 19: *Bodytext*. Screen-grab of texts after repeat, re-write, re-dance.

Image: Simon Biggs.

#### 5.4.4 follow the morphology and dynamics of texts and sound

The final section is initiated by the ESCAPE command, which causes the text-objects to release their stored energy and spin wildly until the energy is exhausted. As they intersect, the text-objects do not only exchange content but their symbols also shift along one Ascii key. The resultant decay of the words into collections of symbols is a catalyst for a more open-ended dance improvisation. The dancer's decisions increasingly accommodate and follow the morphology and dynamics of the text-objects rather than syntactic or semantic content. She abandons her attempts to interpret the texts literally and instead lets the movements 'speak for themselves'. During this section the dancer also whispers a report of her experience of dancing within this environment – either a description of her actions, feelings or sensations, or her observations of what the system is doing. This is barely audible but adds descriptive details that were stripped away in the minimalist writing style required

for composing the haiku phrases. Her whispered speech is responsive rather than generative or declarative, without intent to communicate to the audience or to the Dictate software. The meaningfulness of the words is once again put into question – are they now just a trace of the morphology of the movement and/or sound?

#### **REFER TO VIDEO SEQUENCE 12**

#### ***BODYTEXT: FINAL SECTION.***

The initial texts of the performance were dictated and danced in a matter-of-fact manner, which perhaps suggested an authority related to craftsmanship and authorship invested in their composition, and their potential for meaning. The inclusion of set material from codified dance forms and other choreographic works may further amplify the impression that the material holds significance. However by the final section, the texts have been through a process of decay – from this initial, composed presentation of dance and word text to a collapsed and de-composed collection of actions and phrases which hold no apparent coherent meanings. At this point the arbitrary nature of linguistic codes is revealed. Any notion that the original dance and word texts might have correlated with singular or absolute meanings or truths are thus disrupted and critiqued. As ‘live’ text-objects, the words are actors in the interactive environment, responding to but also determining the dancer’s movements. Words move her and are moved by her. Texts are embodied and dis-embodied, composed and de-composed. Movement rewrites them. In this fluid adaptive environment, meaning is both becoming and disappearing.

### **5.5 bodystories**

The choreographic process for *Bodytext* engaged the notion that bodyscape is the site and scene for embodied stories. The performance work explores the inter-relations of bodyscape, movement, speech, writing and reading – raising questions of if or how bodies speak or can be read. The English language is rich with metaphors of legibility, lisibility or scriptibility of the body. A glance at book titles such as *Body Stories* (Olsen & McHose, 1991), *The Body Speaks* (Marshall, 2002), *The Body Can*

*Speak* (Mertz, 2002), *The Metaphoric Body* (Bartal & Ne'eman, 1993), *Written on the Body* (Winterson, 1992), *The Body in the Text* (Cranny-Francis, 1995), suggests that the idea that body can be apprehended as a document, inscribed, heard or read, is a quotidian social given. Much of the theory on the textuality and intertextuality of bodies draws on cultural studies, gender studies, literary theory, deconstruction, post-humanism, psychoanalysis and other fields. Foucault, Derrida, Butler, Kristeva, Lacan, Žižek, Hayles – these are all key voices in the ‘discursive turn’. However this line of analysis is outwith the focus of this thesis; my discussion draws primarily on somatic approaches and dance studies.

As part of the choreographic process for *Bodytext* I addressed the concept that autobiographical memories can be conceived of as tape loops located in the body, containing embodied stories which can be replayed and rewound. This notion is addressed as a metaphorical and conceptual working tool; I am not making any claim or hypothesis that such loops do concretely exist, nor that bodystories can actually be read or speak for themselves. Marked flesh and movement patterning may give clues as to the stories implicated in their forming, but without recourse to the mediation of language we can only engage in inference and interpretation as we search to understand their meaning. When we engage the processes of naming, words and their gestures become intertwined with these marks and patterns, seeming to offer the potential for stable meanings but in fact introducing another set of arbitrary and contingent signs to be used in the processes of inference and interpretation. Bodystories seem to present texts which evade apprehension.

### **5.5.1 legible bodies**

The concept of the legible body is approached through some somatic techniques. Ida Rolf’s system of Structural Integration is grounded in the principle that “bodies record the physical and emotional traumata of living – the happenings of a man’s life” (Rolf, 1985, p.80). The goal in Thomas Myers’ Global Postural Assessment Method, known as *Body Reading* “is to understand the pattern – the ‘story’ ... inherent in each person’s musculoskeletal arrangement” (Myers, 2009, p.230). One

aspect of Body Reading proposes adopting the posture of the other person in order to gain understanding of the emotional implications of their physical attitude. While Myers takes into consideration the implications of physiological patterning for the psychological state and vice versa, he expressly does not assign “any ultimate moral advantage to being straight and balanced” (ibid, p.237). Moral judgements based on body-readings *do* figure in approaches such as phrenology, the controversial 19th-century pseudo-science established by Franz Joseph Gall which purported to determine a person’s character from the shape of the skull. William Sheldon’s equally controversial theory of Constitutional Psychology (Sheldon & Stevens, 1942) claims that bodily morphology, or *somatotype*, is associated with temperament, and categorises people as ecto-, endo- or meso-morphic according to the predominance of nervous, endocrine, or muscular tissue. Wilhelm Reich’s Character Analysis considers that locked breathing and unreleased psycho-sexual energy are manifested as physical blocks in muscle and organ tissue, creating the bodily aspect of Character Armouring (Totton, 2005). Reich claimed that “every muscular rigidity contains the history and meaning of its origin” (1972, cited in Totton, 2005, p.3). Influenced by Reich, psychotherapist Alexander Lowen continued exploring the notion of Body Armour through the modality of Bioenergetic Analysis. This body-oriented analytical and therapeutic approach is based on the concept that history and trauma can become psychodynamically locked, thus patterning movement habit and behaviour.

### **5.5.2 inscribed bodies**

Inscribed bodies may be considered as “marked or tattooed by individual experiences of the world” (Cranny-Francis, 1995, p.12). The embodiment of each experience is affected by the permanence of the medium of inscription. A washable mark will impact differently to one inked, etched or engraved. Pierre Janet, pioneer of work on dissociation and traumatic memory, noted that certain happenings “leave indelible and distressing memories – memories to which the sufferer continually returns, and by which he is tormented by day and by night” (in Kolk, 1994). According to Bessel van der Kolk, founder of the Trauma Center, the *engraving* of trauma is caused in

part by the impact of emotional responses and sensorimotor sensations on declarative memory, and by the diminishment or loss of capacity to express the experience in words or symbols (Kolk, 1994). Focusing on the impact of trauma and the symptomology of Post Traumatic Stress Disorder (PTSD), body psychotherapist Babette Rothschild suggests that somatic memories can be stored as sensations, themselves linked to emotions and therefore to the endocrine system. A characteristic of PTSD is hyperarousal of the limbic system which continues to activate the autonomic nervous system despite the actual traumatic event having ended.<sup>89</sup> The memory of traumatic events may trigger the same psychophysical response as the original event. The sensations that accompany flashbacks may be so intense that current reality is indistinguishable from past. The trauma is so deeply engraved in the body, “it *feels like* it is happening now” (Rothschild, 2000, p.45, emphasis in original).

For Rothschild, part of the process to break this cycle involves helping individuals to approach clarification and understanding of what the sensations mean for them, firstly through feeling and identifying the bodily sensations, then through naming and describing them. Intentionally reconstructing postures or movements involved in the initial event may also facilitate controlled state-dependent recall, through triggering somatic memory. The practice of *mirroring* – physically adopting the posture of the other person, as per Myers’ proposal for Body Reading – is used in Dance Movement Psychotherapy and in treatment for trauma. To understand something of her (psychotic) patients’ “relentless repetition ... and bizarre body attitudes” (Schoop, 1974, p.121), pioneer Trudi Schoop allied her own movements and posture with those of the patients.<sup>90</sup> Another method, aimed at assisting patients

---

<sup>89</sup> In everyday situations of stress, the sympathetic nervous system (SNS) activates valuable defence reflexes of fight, flight or freeze. The SNS works in balance with the parasympathetic nervous system (PNS), which is primarily aroused in states of rest, relaxation and pleasure. Once the stress (perceived or actual) is removed or lessened, the PNS activates to suppress the defence reflexes. The two systems normally work together to maintain equilibrium in the autonomic nervous system (ANS).

<sup>90</sup> “I force Agnes’s position on my own body and try to enter her rocking pattern. How uncomfortably foreign it feels, alien to my own quality and tension. What enormous energy it takes to keep up with that fast, staccato tempo. The emphatic forward thrust of her movement

to resolve the fixation of over- or under-energised tension patterns is *tension splitting*. Schoop uses play to create split-body conditions which exaggerate for example, “a brave chest with a scared pelvis; or [we] say goodbye with an obstinate right side and a sentimental left side” (ibid, p.108). These sessions on tension splitting serve to bring unconsciously held habitual tension patterns to patients’ attention. The exercise of splitting helps them identify components of the structure, which they may now be better equipped to reintegrate “not as a calcified block, but as a fluid unanimity” (ibid, p.109).

There are parallels with these therapeutic approaches and some of the choreographic processes undertaken in *Bodytext* and in *InTensions*.<sup>91</sup> During the excavation process I critically reflected on my personal bodystories and the words used for their retelling. To give one example, I broke my arm in a childhood accident. When I retell this event to medical or massage practitioners I usually describe it as “a greenstick fracture of the ulna, nothing serious”. Unpacking this story and reviewing it from the perspective of its implication in a tensegrity schema brings different psychophysical connections to my attention. In particular I notice possible links to the scoliotic pattern in my spine (which I had always attributed to a different accident) that are perhaps masked by the words and their focus on the arm itself. This example raises the question – if the words used to report a story become fixed, do the words themselves then contribute to the fixing of bodyscape and to the creating of movement signatures?

---

creates in me a sensation of ... fury? ... defiance? ... certainly of desperation. I feel cramped, miserable; I don't like it at all” (Schoop, 1974, p.121). She carries on rocking with the patient, but on returning to her own schema, associations rise, maybe not relevant to the patient, but in sharing the activity “I somehow felt that I'd been temporarily a part of her world, and could begin to understand the need that lies behind the rocking action” (ibid, p.122). Once in harmony with patient, the therapist slightly adapts her movement, rhythm etc., “When the patient is able to change his compulsive appeasement motions, and comes to realise that nothing happens – then he has reached a turning point. With his approval, I can then begin to extend the changes further and further, and finally alter the pattern so strongly that neither he nor I nor the ‘One for whom he performed’ can recognize the original pattern” (ibid, p.124).

<sup>91</sup> The tasks assigned to the dancer in *InTensions*, described in Chapter 4 placed divisive requirements and demands on her attention which are similar to Schoop's tension-splitting exercises. One aim of this was to induce an artificial performance situation which might approach a genuine state of trauma or psychosis, in which the body story is temporarily written using non-permanent marker but evokes the experience of a story engraved.

## 5.6 embodied gesture

I propose that in *Bodytext* the dancer is engaged – through moving, speaking, writing and reading – in a performative gesture of languaging the selves into being. Through the initial movement explorations undertaken in the choreographic process – excavating body stories, forming and performing the texts – I noted that certain narratives seem to be dominant in the conditioning of my activity patterns and stress markers. Equally, specific activity patterns seemed intertwined with specific stories and with the specific language through which those stories are told. The particular choice of words, statements and metaphor which I use to tell my own stories, whether to myself or to others, was brought to my attention. This suggested to me that highlighted, downplayed or hidden elements of the stories’ telling might relate to the physical dynamics of my habitual movement patterns. Here I argue that the gestures which are bound up with the words used in the retellings of bodystories may also inform bodyscape.

Language may be viewed not just as a technology that humans *use*, but rather as what *makes* us human.<sup>92</sup> In Chapter 3, I outlined current gesture research that considers gesture and speech to form an integrated system for both communication and cognition. Gesture-for-speaking is part of the action of thinking. The argument that the *origins* of language may be gestural was first put forward by anthropologist Gordon Hewes (1973). Psychologist Michael Corballis later develops Hewes’ arguments drawing on current work in neuroscience and genetics (2003). Other

---

<sup>92</sup> In 1996 an exhibition *Miscast: Negotiating the Presence of the Bushman* at the South African National Gallery included displays of trophy-heads, body parts, skin and body casts, together with photographs and data about the peoples made by early European anthropologists. The collection (which I saw) resembles exhibitions in Natural History museums; the Khoisan peoples were treated with similar curiosity but disregard as other animal species. This attitude towards them seems to have arisen partly because the sounds of their speech were interpreted as animal grunts rather than human language. In a text in the exhibition catalogue, David Chidester notes; “Intercultural contact between Europeans and Khoisan people in the Cape of Southern Africa posed a communication problem. Since any hope of intercultural communication was frustrated by their ignorance of Khoisan languages, Europeans had to rely upon practices of observation rather than conversation to draw their conclusions. Significantly, the earliest European observers justified this reliance upon visual observation by insisting that the Khoisan actually lacked a human language ... Instead of interpreting Khoisan utterances, therefore, European observers were primarily engaged in analysing Khoisan ‘languages of the body’” (in Skotnes, 1996, pp.24-6).

recent research indicates possible links between the demands of manipulative complexity for Paleolithic stone toolmaking practices and the evolution of the neural substrates important for language.<sup>93</sup> This lends weight to the argument that language and gesture co-emerged and makes it more plausible to consider that the action of gesture is integral to speech not just for communication but for cognition.

The acquisition of verbal language, Sheets-Johnstone argues, is *post-kinetic*; we are born and begin our apprehension of the world in movement (2009). We learn first from the kinetic perspective but are already immersed in the structures of language. Language acquisition is intrinsically bound up in action, spoken language is permeated by the movement of gesture, and the development of movement patterns and habits is shaped by our negotiation of the linguistic environment.

Linguist Georges Lakoff and philosopher Mark Johnson also argue that language, thought and action are grounded in embodied experience and pervaded by metaphorical and metonymic concepts. For them metaphor is “as much a part of our functioning as our sense of touch, and as precious” (1980, p.239). Viewing one’s life as a story may impose a coherent structure on highlighted elements, and every description “will highlight, downplay, and hide” properties to suit purpose (ibid, p.163). However, statements and narratives can become ossified or stuck in their wording through retelling and abbreviation (such as the short medical histories given to doctors or osteopaths when they conduct a consultation, as per my own example given earlier) or through socio-political pressures to maintain a consistent story. For example asylum seekers who are suffering PTSD may have difficulty recalling the details of their traumatic experiences. As time elapses, and/or with therapeutic support, the narrative content may drift and change either because new elements are

---

<sup>93</sup> Working with contemporary craftsmen who use traditional tool-making techniques, neurotechnologist Aldo Faisal and colleagues made observations of increased right hemisphere activity correlating with the complexity and diversity of grips required for early Oldowan (c.2.5mya) tool-making. they suggest these actions may have provided “a ‘preadaptive’ foundation for the enhanced cortical control of vocalization” (Faisal et al, 2010, p.9), while the additional cognitive demands and manipulative control required for later Acheulean techniques (c.0.5mya) could have indirectly favoured the development of neural substrates important for language (ibid, p.9).



remembered or the symptoms of PTSD subside. However immigration authorities may view a changing story with suspicion which creates pressure on the individual to stay constant to their original telling, thereby ossifying their narratives. These narratives may then take on particular resonances that contribute to the creation of the person's sense of identity.

In speaking the stories, also at work are gestures-for-speaking. Repeated patterns and choices of words may contribute to repeated patterns of gesticulation. The metaphorical language used when we speak our stories, whether for others or for ourselves, may contribute to the shaping of kinetic/kinesthetic melodies (Sheets-Johnstone, 2009). Referring back to the concept of tensegrity schema an imbalance created by an ossified story could function like the “tug in the fascial net ... communicated across the entire system like a snag in a sweater” (Myers 2009, p.33). Bodystories and the gestures of their telling may be implicated in the tensegrity schema and inform bodyscape.

Philosopher Elizabeth Behnke draws attention to the micro-movements made in the “ongoing ‘how’ of our corporeal/intercorporeal ‘world-experiencing life’” (1997, p.181), – the small movements involved in sitting, standing, breathing, touching, listening, the movements of speech, and those micro-movements involved in being ready to respond. These she calls *ghost gestures* – gestures that can ‘haunt’ the body and movement patterns. Ghost gestures, Behnke suggests, may be formed by repeat activities, by specific events or accidents, or by imposed force. As an example she describes,

situations where children – or adults – respond to commands, exhortations, or accusations that have to do with ‘trying harder’ by displaying a kinaesthetic pattern that is visibly expressive of ‘trying’ [...] Ghost gestures of this sort seem especially likely to become ‘trapped’ in the body, migrating all too readily from one body part to another, haunting us far beyond the original occasions eliciting the bodily comportment in question and becoming instead a sedimented style of response in general (ibid, pp.190-191).

In the case of learning to try harder, the inappropriate kinaesthetic patterns of ‘doing trying’ may be laid down at a developmental stage when there is as yet little or no felt-understanding of how the words relate to the bodily comportment. The language acquisition and movement patterning are intrinsically linked, the ghosts and their gestures begin to haunt the kinetic/kinaesthetic melodies. Longer or more deeply engraved stories may produce more ghosts.

In this performance version of *Bodytext*, the gradual entropy of the dance material and text-objects – from the initial crafted and monumental ‘opus’ into wildly spinning phrases – and the becoming intertextual relations within the performance, reveals the futility of searching for singular or absolute meanings. This disintegration of order and loss of meanings could be perceived as tragicomic, or as presenting a challenge to, and facilitating the dispersal of, the stories and ghost gestures that inhabit bodyscape. There is perhaps a link to Buddhist meditation practices of non-attachment, such as the *Kalachakra* meditation in which a sand mandala is created then destroyed.<sup>94</sup> It seems to me that the breaking down of texts that have become monumentalised – whether inscribed or engraved, worded or actioned – is akin to breaking down a monolith to its constituent grains of sand. The dispersal of the Mandala functions as a meditation on impermanence. The dispersal of the texts of my own bodystories could be seen to function as a meditation on the psychophysical dangers of languaging embodied experience as a hermeneutic monolith.

The notion engaged for this choreographic process – that autobiographical memories can be conceived as tape loops located in the body – may correlate to the idea of the gestures of ghosts telling their stories over and over. If we return to the initial question that underpinned *Bodytext* – what if Krapp went digital? – I suggest that the shift from analogue to digital might offer some liberation from the fixity imposed on his bodystories by the gestures that haunt their retelling.

---

<sup>94</sup> I was witness to one such practice of the Kalachakra, or Wheel of Time Mandala, executed by a group of monks from Tibet, as part of the Magiciens de la Terre exhibition, Grande Halle de la Parc de la Villette, 1989.

## 5.7 Interactivity in performance

The interactive performance environment of *Bodytext*, in which the technology of language and the embodiment of this technology are brought to the fore, engages multiple, simultaneous layers of the interactor's attention as she negotiates the strategic possibilities it presents. The dancer's excavated bodystories are reported in the form of texts that are read, written, and danced. These texts are 'live', and their energy derives from the dancer's tracked movement. They can also rewrite themselves. They can therefore be considered as equal partners in the interactive environment, agents to be negotiated with, as is the sound.

Audience feedback after performances of *Bodytext* indicates that watching the dancer thinking 'on-the-hoof' was compelling, as she strove to cope with the multi-tasking demanded by reading-while-improvising-dancing, or sought solutions to translate increasingly meaningless texts into movement. People also commented that while they sensed that the dancer's motion causes the texts to move, they felt they lacked a 'compass' to guide their understanding of the texts re-writing, because the mapping is not an obvious one-to-one. Some audience members further commented that they tended to concentrate on watching the dancer engaging in the complexities of the tasks rather than on reading the rewriting texts. The becoming-dancer is to the fore, reading/writing/speaking herself into being. This is interesting because a common objection to screen-based interactive installation performance works is that the visual dominance of the screen diminishes the live performers.<sup>95</sup>

The validity of *watching* others performing within interactive works, rather than *experiencing* the works as an interactor is often questioned. Mark Coniglio, artistic director of Troika Ranch suggests that the audience of interactive performances are present to the "on-the-fly artistry" of the performers (2005, p.8). The audience's understanding that "the performer has a virtuosic command of his or her instrument

---

<sup>95</sup> Our decision to hang the screen onstage was primarily functional – it reflects the predominant format for written text, the page – and financial. If funding permitted, it would be interesting to explore presenting it with overhead projections, (such as used by Chunky Move in their work *Glow*) or as a 360° diorama.

and that he or she is creating something new in the moment of performance adds yet another layer of ‘liveness’ to the experience, and [that] this is ... a core rationale for adding interaction to the mix in the first place” (ibid, p.6). A strong argument for our presenting *Bodytext* as a performance to be watched is that the artists can share their refined level of understanding of the potentials of the system, developed through a lengthy, in-depth exploration of the complexity and subtlety of the interactivity. The interactive environment can be regarded like a musical instrument. It is unrealistic to presume that many people would be able to realise much of the potential of a trumpet or violin during a brief session. Equally, few people are able to afford enough time within any installation to achieve a virtuosic command for themselves, which requires I propose, particular skills of attentional alacrity.

### **5.8 practices of attentional alacrity**

Interactive performance systems and immersive environments often require technical precision in movement execution, together with the attentional fluency required for improvisation within and negotiation of an adaptive environment. Johannes Birringer observes that dance training and practice in the West tend overwhelmingly to focus on specific techniques, vocabularies and compositional structures which emphasise physical virtuosity and bodily intelligence, “disciplining the body for the execution of choreography and not for interaction with mediated and unstable environments” (2003-4, pp.90-91). He suggests that interaction for performance could be addressed as a spatial and architectural concept. This means

shifting the emphasis away from the creation of steps, phrases, ‘combinations’, or points on the body that initiate movement, away from the dancer’s internal bodily awareness (widely encouraged in today’s practices of yoga, somatics, experiential anatomy, body-mind centering, and release techniques) unto her environment, to a not-given space but rather a shifting relational architecture that influences her and that she shapes or that in turn shapes her. (Biringner, 2004, p.5)

I agree that this spatial and architectural concept is useful for opening out concepts of where and what dancers should do, and where or what dances exist. Referring back

to the discussion of the Open Work in Chapter 3, Eco suggested that the open work “installs a new relationship between the *contemplation* and the *utilization* of a work of art ... it deploys and poses problems in several dimensions” (Eco, 1989, p.23). The shifting relational architecture Birringer describes with regard to interactive performance environments could be at play within *any* open work of art. Interaction may be conceived as spatial and architectural but may *also* require precise steps and phrases, or call upon internal bodily awareness.

Birringer’s concerns are being addressed, partly because there have been an increasing number of interactive works created since he made these comments. Each individual instance of an interactive work will highlight or require skills which may or may not be best developed through the traditional Western dance training methods that Birringer questions. Sondra Fraleigh asks of dance training methods that prioritise physical repetition, “What do I want to instill in this process ... what happens if I stop repeating and what [are] the hazards of mastery” (2004, p.15). One potential hazard of methods of repetition, such as Ballet or Yoga, could be the instillation of fixed movement habits (positive or negative) which codify the movement signature according to externally imposed formulæ. One potential positive, I suggest, is the opportunity to refine and deepen movement knowledge within delineated parameters. Methods of repeating can be approached with an attitude of aiming to promote the release of potential capabilities, rather than to regiment and remould the body. *danced process #1* and *Bodytext* both aimed to identify and reveal patterns of repeating, using somatic and choreographic strategies to illuminate the movement signatures bound up in them. It seems to me that the arguments both for and against practices of repetition are contingent on the level of mindfulness applied, and on a non-reification of ‘freedom from form’.<sup>96</sup>

Birringer proposes changes in approaches to dance education in order to facilitate the development of ‘interactively capable’ dance-artists, including the creation of

---

<sup>96</sup> In *I Want to be Ready: Improvised Dance as a Practice of Freedom* (2010) Danielle Goldman critiques simplistic notions of freedom that are often applied to improvisation practices, and emphasises the techniques that give structure and form to the activity (tasks, themes, time etc.)

dedicated studios that combine training, performance and experimentation with media and technology tools and softwares (ibid, p.108). Where this aim is realised, a new difficulty may arise in that each space can only provide and keep up to date with certain softwares and equipment. The range of equipment may then define the creative choices of the artists working in the spaces and start to delimit the broader discourse of what constitutes interactive dance. Also, the practices to train skills for working within interactive immersive environments may best be nurtured *in* the environments. However, the invaluable resources of made-to-purpose spaces can often only be accessed for limited periods of time. In chapter 4, I discussed how the problems posed by and solved in some performance situations make polyattentional demands on the performer, and suggested various practices of embodied reflection including the creative act of performance itself, to facilitate the development of skills for negotiating multiple, simultaneous layers of action and attention. An interactive performance environment often presents very particular perceptual challenges and situations, but it is nevertheless *an* environment. Learning to cope in such environments is a highly focused lesson in coping with everyday life. My own experience of working in interactive environments<sup>97</sup> is that they often call upon combinations of movement accuracy and adaptability. Both *Bodytext* and *InTensions* for example, require precision – of points on the body or in space, of placement or of execution of phrases, which may be cultivated through practices of repetition – as well as improvisational awareness. Both works also present particular situations in which this precision and fluency can be cultivated.

An issue that arose in making *InTensions* was the limited and fragmented time available to work within the system. I recognise that this is often a problem, and so one outcome of making these works is for me to consider what practices might be specifically suited to train attentional alacrity for coping in interactive environments *outwith* the dedicated environment. One particular approach which I have found very valuable draws on the workshop methods of dance artist, Alexander teacher and

---

<sup>97</sup> e.g. the immersive interactive performance environments for *Halo* (1999), *I am, I was (a dying swan)* (2000), *Blowup* (2007), *Mutsugoto* (2009), *Bodytext* (2010).

craniosacral therapist Miranda Tufnell. For many years her practice has explored the body, the environment, and use of imagination, speech and writing, to offer improvisational starting points for creative exploration in new and often surprising directions. In a workshop I attended with Tufnell as part of my research<sup>98</sup> participants undertook a complex improvisation process. We visually observed and verbally reported on our immediate environment, imaginatively explored associative images and memories, reported on these in writing and in dance, witnessed others dancing and reported on their dance through dance, words, imagery, writing etc. Many of the elements of Tufnell's workshop reflect the choreographic processes I have employed throughout this thesis. What I found pertinent in this particular session was the rapidity of shifting focus – between layers of awareness and between modalities. This strategy seemed to enliven awareness of the tensegrity schema interconnecting body, space and image. These are key elements in Tufnell's inquiry, and the title of her seminal book co-authored with Chris Crickmay, *Body, Space, Image: notes towards improvisation and performance* (2003). Her approach is not a formulaic method. Tufnell states,

For me there has never been one way, I have needed to explore between moving, writing, making, sound and visual imagery; between working with others in bodywork or movement and working as a performer – shifting between the poetry of metaphor and language, the sensuousness of making and materials and the feeling world of the body, to make visible the elusive multi-layered nature of our experience. (Tufnell, n.d.)

One of my subsequent explorations of this type of approach draws on the 'rapid shift' idea to establish something of a 'perception gym'. For example, I worked on juggling awareness between in-depth, surface, situated, and imaginative body layers – bones, skin, space (actual and imagined) – to bring attention to the skeletal structure, the skin boundary, and the immediate environment. To heighten awareness of the bones, I drew on exercises from Klein Technique developed by Susan Klein. Many of these exercises offer situations for scrutinising and reassessing structural patterning at the skeletal level. Klein describes the focus of the work;

---

<sup>98</sup> At the Somatic Gathering, Lancaster, 29-30 October 2010.

Structure is the solid aspect of our body, our container, which holds us together in the connections that create our stability. Energy is the movement within our body that enlivens us and represents our mobility through our life force. In Klein Technique™, by uniquely working on the level of the bone we bring our structure and energy together. Bone is our deepest, densest structural tissue that also conducts the most energy through the body. We are working below the level of the superficial muscles and going directly to the bone and the deepest muscles of postural support. (Klein, 2010)<sup>99</sup>

To bring attention to the skin, I employed some of the practices of tactual acuity which are described in chapter 6, including ‘wind’, ‘pushing hands’, and ‘artificial floor’, and used the sensations awakened by these exercises to fuel an image of the hydroscopic pressure of each of the seventy-five trillion cells of the body pressing out against the surrounding space.<sup>100</sup> This led to a felt sensation of the space having density, which became a physical tool in the practice of inhabiting two superimposed worlds – one observed, here and now, the other imagined, there and then – and then improvising with the idea that one could pass between them through slits in time and space,<sup>101</sup> rather like the passing in and out of the light in théâtre-noir described in chapter 4.

## 5.9 conclusions

*Bodytext* involves speech, script, (re)action, (re)iteration and as such constitutes an enactive, interactive inquiry into embodiment and language. The choreographic processes interrogate the notions that language informs and scripts the movement and tension patterns of bodyscape, creating ghost gestures which may haunt these

---

<sup>99</sup> I first studied Klein Technique with Susan Klein and Barbara Mahler in New York in the late 1990s, in the context of rehearsals for Rambert Dance Company’s reworking of Trisha Brown’s *Opal Loop*. Aspects of the work have informed my own practice since.

<sup>100</sup> Deborah Hay organises her choreographic and performance practice around a set of *what ifs*, which include *what if* “I imagine every cell in my body has the potential to perceive action, resourcefulness, and cultivation at once” (Hay, 2000, p.xiii), and “what if ‘I’ is the reconfiguration of my body into fifty-three trillion cells at once?” (ibid, p.1). When Hay began these explorations in 1970, she used the image of the body comprising five million cells. At the point of her writing her book, this number had been revised to fifty-three trillion, but has more recently been revised again, as new scientific imaging technologies permit greater accuracy in body-cell counting. She now postulates the body “as the ever-changing cumulative performance of seventy-five trillion semi-independent cells” (Foster, in Hay, 2000, p.xii.).

<sup>101</sup> In the second part of the *His Dark Materials* trilogy by Philip Pullman, a square window in space and time near a Hornbeam tree, which connects different dimensions of Oxford, is brought to the protagonist’s attention when a cat slips through (1998, p.15).



patterns and which may in turn inform cognition. Bodystories are excavated and reported in words and dance, then subjected to acts of translation as they re- and decompose. The dispersal of the texts of bodystories could function to help loosen the grip of patterns of fixation created by hermeneutic monoliths.

*Bodytext* is not about exerting control over the interactive environment, it is about exploring the potentials and coping with the emergent possibilities of a dynamical system that is complex, unpredictable and unstable. Interactivity both demands and develops polyattentiveness. Outwith such performance environments, practices of attentional alacrity can be employed as valuable pieces of equipment in a 'perception gym' for nurturing interactively capable dance-artists.

## Chapter 6: touching

### Tactile Manoeuvres: haptic choreography

*haptic\_dance* is a tactual dance performance for an audience of one. Audience members are seated to receive *haptic\_dance*, which is a hands-on event aiming to make tangible some impression of the dancer's phenomenal experience of dancing. Following this, the audience is then invited to make any expression of their own, through movement, writing, drawing or speaking.

Unlike the other projects for this research which were developed during relatively concentrated periods of practice, *haptic\_dance* evolved gradually over the entire course of the thesis. Aspects of this work have emerged from each of the previous works, and the ideas were explored over an extended period of time through numerous dance workshops and movement explorations with a range of dancers and somatic practitioners, many of whom are members of the Edinburgh Movement Co-op. For the development of the version used for the pilot trials, I was joined by dancers Hannah Seignior and Freya Jeffs. This later stage of the research and development was supported by Dance Base, Edinburgh and Dance House, Glasgow.

#### 6.1 background

The genesis of *haptic\_dance* emerges from a synthesis of my two main areas of interest and modes of practice – dance and bodywork – and addresses two concerns which regularly resurface. The first is to consider if and how the therapeutic massage or bodywork encounter bears similarities to a 'small dance' (as described in chapter 2). In my own experience of delivering a bodywork session it often feels as if I am engaged in a micro-dance, and many clients report after a treatment that "it feels like I've been dancing." It is as if the client's bodyscape becomes, for the duration of the treatment, the small stage for an improvised movement exploration or performance. In the course of this improvisation I/we may tune in to the resonance of kinetic/kinaesthetic melodies, I/we may meet and negotiate with the ghosts haunting

bodyscape, or encounter the gestures of bodystories. To be clear, I am not suggesting that I approach the therapeutic process of a bodywork session as a dance event. I am a dance-artist and a bodywork therapist, a bodywork therapy session is *not* a dance, and there are clear distinctions between the practices. However it is the similarities that interest me here. I have already proposed in this thesis that the strategies and skills engaged when improvising dance, negotiating bodyscape, and navigating performance environments may contribute to the promotion of psychophysical awareness, alacrity and acuity, all of which possess therapeutic potential.

My second concern is to address the notion of kinaesthetic empathy in watching dance. Bodywork practitioner Ida Rolf proposed that “seeing is touch at a distance” (Thompson, 2009). For this work, I began by inverting the question, to ask whether touch can be considered as ‘seeing close-up’, and by considering the implications for choreography of shifting the emphasis of the audience’s experience from primarily visual toward the tactual. My own observation and a common complaint from dance viewers is that when watching dance they sometimes lose the connection to the kinaesthetic feeling of what happens. In shared social or ritual dances such as folk and court dances this kinaesthetic sense is experienced physically, through participation or viewing at close proximity.<sup>102</sup> However some forms such as classical Ballet, which traditionally promote ideals of dance and dancers as sylph-like, effortless and perspiration-free, are generally viewed by passive, sweat free spectators. The architecture and economy of many western theatre buildings further contributes to the distance between performers and viewers.<sup>103</sup> *Haptic\_dance* explores ways to harness the kinaesthetic aspect of dance and to render it into touch

---

<sup>102</sup> Zola’s account in *Germinal* of the dance at Widow Désir’s captures something of the physicality and effort of a communal, social dance; “the three musicians played furiously; one could only see in the hall the movement of hips and breasts amid a confusion of arms ... the red faces, the dishevelled hair sticking to the skin, the flying skirts spreading abroad the strong odour of perspiring couples. Maheu pointed out Moquette to Etienne: she was as round and greasy as a bladder of lard, revolving violently in the arms of a tall, lean lander” (Zola, 2005, p.156).

<sup>103</sup> Many site-specific performance works within alternative theatre settings such as galleries and warehouses rather than purpose-built theatre spaces *do* explore situations and strategies to overcome the distance and to augment the sensory experience of the audience. The Fluxus performances and *Happenings* of the 1950s and 60s were important catalysts for current site-specific work.

so that it can be ‘seen close up’. Bringing this aspect of the sensorium to attention may heighten the audience’s kinaesthetic empathic experience of the dance.

The concept of touching the audience in order to deliver a dance raises interesting issues concerning professional and ethical codes of practice – in this instance the contract is not of therapist/client but of performer/audience. Part of my choreographic process involved careful consideration of the quality and quantity of the touch material to ensure it would be safe, respectful, non-threatening and non-ambiguous for the receiver. The judgements determining the form, dynamics and pressure of the touches were guided by my professional practice and experience as a bodywork therapist. I wanted to test the relationship and boundaries of the touch version and dance material, and the audience’s apprehension and interpretation of this. I did not seek to challenge provocatively their personal boundaries or trust, as is the intention behind some of the other performance works that engage touch outlined later in this chapter. The haptic senses are complex, involving the whole organism through the proprioceptive, kinaesthetic, vestibular and visceral systems, “a singular sense that corresponds to no single organ” (Paterson, 2007, p.1). Touch is generally the least shared or acknowledged and the most taboo of the senses, certainly in most Western cultures, often tending to be either sexualised, militarised or medicalised. At times during the choreographic process, I adapted my choices and decisions for the touch material, to take this indeterminacy into account.

## **6.2 choreographic process**

This inquiry into using touch as the choreographic medium began by drawing on the practices of improvisational awareness used in previous works. In the exploration of tactual reporting described in *re-membering(s)*, in which the aim is to report on-the-action in-the-action by making physical ‘marks’ on oneself, the dancers initially worked from improvisation as they had done in the verbal reporting exercises. However the actions demanded by the marking seemed to divert the dancers’ activity towards the shaping of the touch, detracting them from following the impulses to move, and intruding into the flow of the improvisation. Drawing on these

explorations with improvisation and the problems they revealed, it seemed most useful to choreograph a short, repeatable solo for *haptic\_dance*. This solo material forms a foundation text from which to explore the broader aim of reporting one ephemeral, unstable medium – dance – through another – touch – via the inherently subjective interface of bodyscape. Stabilising this one element created a fixed point of reference, albeit precarious, for the analysing and translating process used to create the version of *haptic\_dance* presented in the pilot trials. Future versions may be created only with and for touch, thereby removing the translation stage that I use here.

### 6.2.1 set danced material

The dance material for this solo derives from a choreographic device of ‘inhabiting’ a remembered place, focusing on the kinaesthetic sensations of moving through a house.<sup>104</sup> An inspiration was an extract from a poem, *Her House*, by Michael Ondaatje; “When you can move through a house blindfolded it belongs to you. You are moving like blood calmly within your own body” (Ondaatje, 1989, p.155). I was interested to recapture the kinaesthetic memory of moving in a place with the ease of “blood calmly within your own body”. Brian Massumi describes orienting by bodily memory of the shape of the space rather than by vision. For example, he proposes,

Close your eyes and try to make your way to the fridge. Your visual memory of the rooms and the configuration of furniture will start to fade within seconds. But chances are you will ‘intuitively’ find your way to the food with relatively little difficulty ... Orienting is more like intuitively homing in on the food with your eyes closed than it is like reading a map. (2002, p.179)

Massumi’s example alludes to the proprioceptive knowledge which allows us to navigate familiar spaces with the ease described by Ondaatje because we tacitly know the *kinetic dynamics* of the journey. “Kinetic dynamics are [thus] the essence of kinesthetic memory” (Sheets-Johnstone, 2009, p.258). Sheets-Johnstone further

---

<sup>104</sup> As part of her practice-led Ph.D. thesis, dance-artist Siobhan Murphy explores a similar idea through what she terms *emplaced remembering*; “I remembered myself into (I emplaced myself within) a variety of built and natural environments, using textural, aural, visual, olfactory and kinaesthetic images” (2008, p.173).

notes that “kinesthetic memories are not vague, abstract kinetic phantoms but are inscribed in the body as specific bodily dynamics” (ibid). It quickly became apparent that isolating the specific bodily dynamics of kinaesthetic memories is complex – visual, narrative and associative elements tend to flood in, creating a polyphony of episodic memory resonances.<sup>105</sup> Whereas in the choreographic process for *Bodytext I* exploited this polyphony – the dance and text-objects refer to many different modalities of memory as well as to movement or body data, functioning at times as associative indicators or as mnemonic tags – here the focus was to capture a sense of bodyscape re-occupying and being occupied by the mnemonic spaces that shape it. Such an inquiry revealed itself as a project in itself and beyond the scope of the research for *haptic\_dance*. I therefore used the notion of inhabiting the remembered house much more loosely, as a choreographic device to create a map for the set dance material. Because it relates to the mapping of a remembered space the foundation danced material does not adhere to a conventional or easily recognisable dance form, so it is unlikely that the audience can predict the next movements, although I composed it in such a way as to include a range of dynamics, directions and repeats that might provide some anchors to choreographic conventions for the audience. I decided not to use any music as I felt this would colour the emotional response of the receiver, or lead them to predict touches to match the dynamics or phrasing of the music. All participants concurred that they felt this would have been the case and that they were comfortable working without music.

---

<sup>105</sup> Damasio (2010) suggests that categories commonly applied to memories – generic, unique, semantic, episodic, etc. – do not necessarily capture the wealth of the phenomenon, and are contingent on the questions asked to provoke recall (such as being asked about a particular house, as opposed to a general concept of *house*). He argues that “the validity of these categories of memory resides with whether the brain honors the distinction” (ibid, p.140). The distinctions are further complicated because memory draws on mapped representations that result in perceptual images, as well as records of the sensory maps, using perceptual disposition networks. “What we memorize of our encounter with a given object is not just its visual structure as mapped in optical images of the retina. The following are also needed: first, the sensorimotor patterns associated with viewing the object (such as eye and neck movements or whole-body movement, if applicable); second, the sensorimotor pattern associated with touching and manipulating the object (if applicable); third, the sensorimotor pattern resulting from the evocation of previously acquired memories pertinent to the object; fourth, the sensorimotor patterns related to the triggering of emotions and feelings relative to the object” (ibid, pp.132-3).

### 6.2.2 acts of translation

Once this foundation solo material was set, the phenomenal feeling of dancing the material is ‘translated’ into touch. I use the term *translation* in a fairly quotidian sense. It was the name tag we used in rehearsals to indicate a creative process that involved analysis, interpretation, mediation and reporting of the subjective experience through the media of dance, touch and the body. These media are often attributed with linguistic properties – ‘the language of dance’, ‘the language of touch’, ‘body language’, ‘bodystories’ etc. – implying that they fulfill at least some of the requirements of language, such as to hold symbolic value or convey meaning, and therefore lend themselves to translation, if translation involves determining, re-expressing and conveying meaning. Bruno Latour suggests that translation involves “displacement, drift, invention, mediation, the creation of a link that did not exist before” (1994, p.32). In a performance work such as *haptic\_dance* meaning is highly fluid and contingent, and it also becomes apparent that there is uncertainty as to *where* the dance is. Part of the invention of translation for me here is to address expectations that the media be meaning-making or meaning-carrying.

What tools could be used for this type of translation between dance and touch? There are codified systems, such as Laban Movement Analysis (LMA) and Benesh Notation, which offer methods for analysing and recording dance and movement through identifying and reporting aspects such as body, space, time, shape and effort. I chose not to engage these methods of analysis and adopted a very subjective approach – literally ‘feeling our way’ – primarily because the intention is to convey something of the *feeling* of what happens, not to describe *what* happens, and because I did not want my decisions potentially influenced by the approaches and terminology of established dance analysis systems. An avenue for future research will be to compare the decisions and solutions arrived at through my subjective approach, to those made when using a formal system such as LMA.

For this translation process I worked with dancers Hannah Seignior and Freya Jeffs. We would each physically execute the movements or phrases, focusing our attention towards the kinaesthetic experience. We then aimed to identify and select what seemed the most pertinent element of the phrase to report on and suggested touches that might give an *impression* of the feeling of dancing it. One stage of this process was to make marks about the dance onto ourselves. I include a video sequence to illustrate ‘marking’ – in this case the dance material is part of the creative process for *Traces of Places*, a dance for camera work-in-progress that is part of my ongoing and future research into embodiment, and which develops the themes of ‘inhabiting’.<sup>106</sup>

**REFER TO VIDEO SEQUENCE 14**

***TRACES OF PLACES: MARKING***



**fig 20: Marking.** Photo: Roddy Simpson

Jeffs, Seignior and I regularly exchanged roles of dancing the material, marking on ourselves, and giving and receiving touches between each other, until we came to agreement about touch solutions that seemed to best convey our experiences of dancing. In choreographing the touch version I aimed to keep it as minimal as possible and in general to use only one hand or point of contact. This was to reduce the possibility that the receiver experience the contact as either manipulative or moulding. During the course of the pilot-trials however, I found that I had to adapt

---

<sup>106</sup> *Traces of Places* is a dance for camera work being developed in collaboration with photographer and video artist Roddy Simpson, and with dancer Freya Jeffs.



the choreography to incorporate more anchors – using both hands in order to delineate fixed-points from which to generate tension or compression – for reasons outlined later in this chapter. I feel that this then changed the experience for the audience, perhaps lending it more of a quality of massage or bodywork.

For reasons such as having insufficient limbs to replicate and deliver all the movement information, and the impossibility of describing all of the multiple simultaneous sensations that occur at any moment, a large amount of information about the dance material is not translated.

Two examples;

i) a turning jump in which first the left and then the right arms trace a tight arc, providing the shape and impetus for a jumped lift and turn of the torso. Visually it seems to be about the arc of the arms, and the first attempt to translate this move was a descriptive swung rotation of the receiver's arms. However we noted that the physical impetus begins with a reach forward in the left scapula which connects, through core tensegrity, to the right side of the ribcage. At the height of the jump, the arc and turn generate a lift and tensioning of the left sternocleidomastoid muscle. The tactual choreography therefore became a lift and forward drop of the left scapula, immediately followed by the palm sliding up and along the right ribs with pressure, and a lift and tensioning tilt of the left side of the neck.

ii) a big circling movement of the right leg (a grand rond de jambe) while changing the direction of facing by 90°. When executing this move we became more aware not of the movement pathway, but of the 'meatiness' of the limb as its mass swung around. The touch version (which became known as 'meaty leg') was a holding and slight upwards lift of the quadriceps and vastus muscles of the leg. In this case it also seemed essential to let the touch linger for more time than the duration of the actual move, in order to convey the sensation of the mass of flesh.

### **6.2.3 timing**

The timing of the touches was difficult to decide upon. An attempt to deliver a real-time mapping of the touches to match the timing of the danced material resulted in what one participant described as “being poked”. New information seemed to arrive too rapidly and the receiver quickly experienced sensory overload. Each touch seems to demand a timing of its own. When a touch is left to linger, new and different sensations may grow out of it as it becomes more strongly appropriated by the receiver<sup>107</sup>. It then becomes harder for the giver to judge if and how the touch relates to the foundation dance material. In terms of timing, whatever was chosen for the touch translation seemed to have a big impact on the experience for the receiver, so much so that it seemed impossible to alight upon a ‘correct’ timing. The solutions chosen are just one possible timing. The touch version used in the pilot trials is about six and a half minutes long, while the danced material is about three minutes. Interestingly, when asked how long she thought the touch version to have been, one participant estimated it at twenty minutes.

### **6.2.4 placing**

The position of the receiver also impacts on their reception of the material. Lying seems to evoke too many connotations of massage and to encourage over passiveness on the part of the receiver. It also obscures surfaces of the body from contact, so that the giver has to manipulate the receiver in order to access those surfaces, thereby introducing movements that do not refer to the source dance material. If they stand to receive participants are more dynamically engaged, but many then perceived the touch as an invitation to actively participate as a mover. Sitting seems to be the most straightforward transposition of a classic audience-as-seated-spectator in a theatre situation, and also relieves the receiver of the need to balance so that they can feel safe if they close their eyes or relax. Initially I gave participants the option to be

---

<sup>107</sup> The skin’s neural wiring and the way the brain perceives touch can create such phenomenon as the ‘cutaneous rabbit illusion’. In this illusion, discovered by Frank Geldard and Carl Sherrick, rapid taps are delivered first near the wrist then near the elbow. This creates a “manifold of discrete ‘phantom’ impressions connecting the points actually touched” (Geldard & Sherrick, 1972, p.178), and the sensation of the taps moving up the arm, like a rabbit hopping.

either standing or sitting (unless there was any reason that contraindicated one or the other), but later in the trials I removed the option to stand and specified they be seated. I used a round stool for them to sit on, again for the reason of not obscuring one surface of the body with a chair-back, and because it does not predetermine a 'front' – participants could choose which way to face.

### **6.3 pilot trials**

The pilot trials were conducted over several weeks during April - June 2011, with 15 participants. I completed an ethics assessment and produced a consent form and an information sheet for participants which gave a brief explanation of the aim of the work – to make tangible some impression of the dance – and an invitation to make a personal expression after receiving the touch version, through writing, drawing, speaking or dancing. Participants were offered the choice to close the eyes or keep them open (and to change this during the performance if they wished). I clarified that the focus of the touch is choreographic, not therapeutic, and that the exchange is between performer and audience, not between therapist and client. I also recommended that, while I consider the touch used to be safe, respectful, non-threatening and non-ambiguous, should anyone feel that any physical or psychological reason would contraindicate them receiving the work they should not take part. If they chose to participate but become uncomfortable during the session and preferred not to continue, they could ask to stop at any point.



**fig 21: *haptic\_dance* touch version.** Photo: Roddy Simpson.

**REFER TO VIDEO SEQUENCE 15**

***HAPTIC\_DANCE: TOUCH VERSION***

In the first of these trials, I kept the guidelines as open ended as possible, giving minimal instruction to receivers so as to avoid prejudicing participants' responses, which were very varied. Some passively received the touch, some gently yielded or moved minimally, while others interpreted it as directive and an invitation to move, actively responding in movement and dancing away from me. These participants appropriated the dance as *theirs* to the point that *I* became the respondent. At this point, the event became a shared dance improvisation. It was interesting to note this response, but because of it the template of my choreographed material was radically changed, which then shifted the focus of the study. I therefore amended the information sheet for future participants, delineating the roles of audience and performer more explicitly, and removed the option to stand. This was in order to establish a clearer social context for this performance and place them in a position more akin to being seated in a theatre. Audiences rarely get up on to the stage and join in unsolicited (and when audience participation *is* called for, are often reluctant to do so) yet many participants did in *haptic\_dance*. Interestingly some people

seemed quite offended and felt excluded when they learned that the material related to *my* felt-experience of dancing, leading me to question whether proximity changes terms of ownership.

I observed that events, such as the audience ‘carrying the dance away’ into improvisation or a fire-alarm going off unexpectedly during one session, left me quite discombobulated and this sometimes affected the quality of my touch. For example on one day I had several participants in a row who responded very actively in movement during the touch version. My delivery of the first touch – a very light brush against the cheek – to the next participant seemed subconsciously to hold an intent to convey that she not dance away from me, which overshadowed my original intent to convey the feeling of dancing the opening movement. The participant commented,

I was a bit surprised at the beginning ... it almost felt invasive ... almost too firm, and I didn't know what to do with it. So it was almost as if you were giving me this firm touch and I was receiving it in a different way. I don't mind you touching me, so I'm never going to feel violated by you touching me, but there was something about *my* expectation of the touch that really surprised me. (6 May 2011)

Evidently by changing my intention I had lost touch with my touch, and failed to communicate either message. When a fire alarm interrupted a different performance I began the piece again, and the participant commented afterwards, “the first one [touch] was almost like a knife because it felt like it was with the tranche [knife-edge] and it was quite fast, it was a very weird sensation” (19 May 2011).



**fig 22: *haptic\_dance* touch version.** Photo: Roddy Simpson

### **6.3.1 participant feedback**

After they had received the touch version, participants were asked to make any expression they wished through moving, speaking, drawing or writing. Several moved, generally with small, internally focused shifts, almost as if returning to themselves or exploring the vestigial sensations from what they had received. One or two chose to draw or write. Most participants chose to speak about their experience. Here is a selection of anonymised comments;

“I feel prepared to move, far more prepared to dance than I did when I came in here.”

“Constantly being taken by surprise, but in a delightful, playful kind of way.

But then inter-cutting, the slicing, the twisting, made me want to go one way but then I'd get caught back in another ... I think that's what was very fascinating because I was experiencing – with my eyes closed, it was very much sensory – experiencing what you were doing but it was making me want to move in a certain way that I would not necessarily ... and I'm actually feeling like you! It's really strange! You did something like this, and I felt, I thought, I'm Sue!, I'm actually Sue!"

“it would have been really interesting for me to respond with movement to what you were doing, but as you were doing it, not afterwards.”

“when it started to repeat, then I felt, oh, something is going on, something towards aesthetics. Before that I just felt some strokes, just meaningless strokes ... This, when you guided my eyes, it was very cinematic because I felt something take me to the fiction, to somewhere else.”

“I found myself at one point shifting when you were touching me to sort of giving, sort of holding, I started feeling like the marble statues, [this is a reference to the eca Cast Collection s/he had passed en route to the trial] very substantial ... the touches, I was thinking OK they're not therapeutic, but they are not directive. I could *choose* to make them directive but then I'd be the active one.”

“In some parts I could guess your movements. Almost I could see them in my mind ... it was not clear for me if you were dancing, for instance, this kind of dance [demonstrates] and you were intersecting me, or if you are just touching me, like being myself an object. this is a little ambiguous for me.”

“It felt like I was a sort of marionette being created, moulded – not quite moulded, sort of carved-out – and the movements were like T'ai Chi energy, almost like you'd been given life ... I wasn't being forced to do things I didn't want to, just that I could feel the difference slight touches would put my body in a different place, just like a little thing on a marionette can make a big movement. It was more like

that, but it was like I naturally did that, that's what I wanted to do and it didn't take much to do it. But it wasn't me doing it, it was an external thing. So I guess more of an emergent movement, you-and-me, rather than you making me do something.”

“It was almost like the dance energy was also moving through me even though I was sitting very still.”

“I thought it was really beautiful that you were kind of drawn to attend to certain things by the dance, either to points that you move to or to parts of the body ... I did get the sense that it was appropriate to be quite still because I could tell that what you were doing was very much choreographed, a piece that was fashioned around the body, and so I didn't want to interfere with that too much, I wanted to receive. But having said that I really don't feel like I was still.”

“I don't know how to describe it but it just felt kind of a bit like I was just being pushed and pulled around by nature. I felt safe enough to let that happen ... I was just going with whatever was happening to my body, and I didn't feel in any sense threatened by what was happening.”

“It felt like it was like, I don't know, it became a language, as if it were like morse, like a code ... It was very strange, a bit of almost anticipation, what part is going to be next? Is there an order? basically trying to understand the code, in a way [...] I was wondering, why isn't the back of my knees getting something, and then afterwards they did and it was huge relief. I don't know why, I think there was an expectation there that all the body parts had to be touched. And then I thought, what about my ears?! my ears haven't received they've not been talked to! [...] I liked the fact that it felt slightly lopsided, but in a way that makes me effectively want to move in order to re-establish the balance.”

After receiving the *haptic\_dance*, participants were then invited to watch the video of the dance material. Afterwards I asked whether they felt any sense of recognition



when watching the dance material, that may have resulted from the haptic experience. While most participants in the pilot trials did not feel a particularly strong connection, for a few the haptic experience changed their perception of and resulted in a stronger kinaesthetic empathy with the dance they viewed.

“It was like a recognition, it was almost like my body was recognising it before I saw it ... It was kind of like I’d been there but in a different way. It was like I had experienced it, but in a different form.”

“That was very very interesting. I definitely felt such a connection, that’s amazing through just a few touches.”

“I could see where you’d translated bits of it, I could see where its come from and I was like oh, that’s really cool, that’s from there ... There were intricate little bits I thought, ah I remember that.”

“That was the dance wasn’t it! I mean, that was absolutely it ... I take it this is the dance, and that was a translation of it into touch?”

“It feels its very much related to the touches, the beginning is the same really, and there are definitely touches that I could relate to what I was seeing ... having effectively received some of the impulses that are used in the dance you can really relate to them and therefore its almost like a game, you know, which one was which? Is that the jumps? And you are trying to double-guess, this one with the reach, is that the contours, an imitation?”

“When I watched the video ... I was guessing if some of the movements you made around me were these movements.”

“I felt that I could interpret perhaps things from certain movements ... say the pressure on the feet for jumping. In a way as soon as you say, oh that is jumping, you

feel as if you are jumping.”

There was certainly no common or singular response or interpretation. I did not seek to test any hypothesis that a direct link between the touch and danced versions could be established or understood. In an experiment that *was* designed to test people’s capacity to recognise a dance haptically, Sommer Gentry and Roderick Murray-Smith (2003) used codified dance vocabulary from Swing dance, that was transferred to the receiver as haptic information through a PHANToM haptic device. The dance material that participants were attempting to decode consisted of four previously known moves which were sequenced unpredictably, and were synchronised to music. Participants held the PHANToM device and followed its lead. The researchers demonstrated that the follower can decode aspects of a leader’s moves from haptic cues. However they also recognised the difficulty of unpacking the extent to which participants’ prior knowledge of the movements or the music influenced their responses. In the case of *haptic\_dance*, the choreography was not codified and there was no music. The lack of prior knowledge, predictable cues or a shared code serves to highlight the phenomenological gap between individual subjective experiences. The predictability is of unpredictability, reflected in the variations in participants’ feedback. In contrast to those who did feel they recognised a connection between the touch and danced versions, or those who sought the code – “almost anticipation, what part is going to be next? Is there an order? ... basically trying to understand the code” – other responses give the opposite interpretation; “[was the video] connected to what I felt? No, apart from just the sense of confusion, like who’s which? what is this for? what is this? ... I couldn’t spatially link them together.” For one participant, the touches emphasised the choices available to her that might determine the unfolding of the work; “they are not therapeutic, but they are not directive. I could *choose* to make them directive but then I’d be the active one.” As such, *haptic\_dance* reveals itself as another open work wherein the audience is invited “to *make the work* together with the author” (Eco, 1989, p.11), engaging in the collaborative making of choices (or no choices).

## 6.4 practices of tactual acuity

The germ of the idea behind *haptic\_dance* was planted during the development of *remembering(s)*, when the dancers undertook a series of exercises exploring the use of different sensory modalities to report on their phenomenal experience of a dance.

These explorations in tactual reporting are discussed in chapter 3. Interesting outcomes were dancers' reflections on their experiences of being 'under the skin' of another dancer, or of not knowing how to initiate their next movement because their personal patterning was disrupted and now resonated with the movement signature of someone else, or as one dancer commented "seeing other people's things come out on other people."

### 6.4.1 tactile manoeuvres

To address the issues raised by these initial explorations into tactual reporting I developed a movement workshop, engaging practices for training and developing acuity of touch. The workshop format was trialled with independent dancers in Edinburgh and presented at the *Watching Dance* conference at the University of Manchester.<sup>108</sup> It includes individual exercises for focusing and centering, and partner exercises for 'listening' and 'looking' through touch. The emphasis is upon intention, attention, and the interface between performers. One exercise draws on the Bodyweather training of Butoh dancer Min Tanaka. In an exercise called 'wind', participants work with partners to explore and exchange movement information through touch. This begins with single touch points which indicate movement direction and dynamics. The receiver is anchored but flexible, like a reed blown in the wind. She responds by yielding to the impulse of the touch, allowing it to follow through in her own body and then to dissipate, so that she returns to a neutral stance ready to receive the next touch instruction. The main focus here is on being present in the moment and noticing any tendency to anticipate the touch or the response. The return to neutral stance is therefore part of the process of learning to differentiate one

---

<sup>108</sup> *Watching Dance: Kinesthetic Empathy* is a multidisciplinary AHRC funded research project involving Manchester University, York St. John University, Imperial College London and University of Glasgow. The conference, *Kinesthetic Empathy: Concepts and Contexts*, took place in Manchester 22-23 April 2010.

movement from another, and reflects the practices of inhibition described in chapter 3. One or both dancers work with the eyes closed to enhance their haptic perception.



**fig 23: receiving and responding to directive touch.** Photo: Maria Falconer

After exploring this very minimal engagement with touch, the constraint of the anchored stance which delimits the receiver to one position is gradually freed up, enabling the dancer to follow through the movement impulse into space. She then begins to elaborate upon the original impulse with her own expressive movement, thereby investing her response with her own agency. One surprising outcome of this exercise was when participants began choosing ‘anti-anatomical’ touches such as a pressure onto the patella counter to the fold of the knee joint. These obliged the receiver to consider their response in different ways to the touches that followed the more obvious, organic patterns of bodyscape, and in particular brought to attention the possibility to choose stillness as a response.



**fig 24: *haptic\_dance* - danced response to touch.** Photos: Maria Falconer.

A second exercise I used in the workshop is similar to Pushing Hands from T'ai Chi Ch'uan, which involves pushing-while-yielding. The partners stand facing one another, touch the palms of the hands together and 'stick' so that they maintain constant contact. One partner leads the other, who has to apply enough pressure to stay in contact whilst at the same time yielding in order to follow. Once both partners become attuned to either leading or following, the roles are gradually folded into a shared intention both to lead and follow. The contact at the palms becomes the interface for anticipating the action and intention of the other. Throughout, the centre of balance and force is in the lower abdomen at the Tan T'ien, and the integration of the limbs to the axial spine is emphasised. In another iteration one person is designated as leader, but divides their attention by focusing on and following their *own* impulse to move, while *at the same time* remaining mindful of the responsibility to lead. The partners work with the eyes open or closed. This deliberate shifting and splitting of attention brings to the fore how such practices can create 'leakiness' in the sense of bounded self.<sup>109</sup>

---

<sup>109</sup> Dance artist Siobhan Murphy explored a similar practice for her Ph.D. thesis, which she termed choreographic tactility in which she instigates movement through tactile prompts. She describes how the disturbed notions of self boundedness "can feel like inhabiting a multi-faceted evolving topography rather than a bi-directional relationship with one other person." (2008, p.92)



**fig 25: haptic\_dance - pushing hands.** Photos: Maria Falconer.

A similar practice draws on a Feldenkrais exercise using an ‘artificial floor’. The receiver – lying supine – places one foot onto a flat board which acts as a small floor, and the partner applies subtle pressure to the sole of the foot through this floor, giving proprioceptive cues to simulate walking and standing. The learning elicited by such an exercise relies on partial cues and paradoxical techniques which are a characteristic of the Feldenkrais approach (Reese, n.d.). Like Pushing Hands which enlivens the hands and upper limb connection to the core, artificial floor enlivens the feet and lower limb connections. Both exercises highlight the agency of the receiver through their choices of where to create fixed points in the joints between the proximal and distal points, and therefore the contingent relationship with the surfaces where we meet the environment.<sup>110</sup> In order to stay connected to her partner, the

---

<sup>110</sup> In March - April 2009 CIRCLE research group undertook a number of experiments with interactive media exploring concepts emergent from *Scale*, an earlier prototype research laboratory by the same group investigating the integration of multi-scale motion sensing systems. CIRCLE members involved in this particular experiment were Simon Biggs, Mariza Dima, Henrick Ekeus, Sue Hawksley, Sophia Lycouris, Wendy Timmons and Mark Wright. A SenseAble PHANToM haptic-pen interface was coupled with a video motion tracking system via a protocol written by Henrik Ekeus, using Max/MSP Jitter and Processing softwares. The video-tracking registered data about the movement of the interactor in the research space – change in the spatial position, direction, distance, dynamics etc. – and used this data to create motion and direction vectors. Ekeus’ protocol converts these vectors into energy, experienced as tactile force-feedback through the pen, which allows the receiver to infer information about the movement. Because it derives from a single point, the interpretation of the tactile feedback depends upon how active or passive the receiver is on reception of the data. In particular, the effort required by the user, and the choices to create fixed points either at distal or proximal joints changed both perception and movement response. My own experience was that when held very loosely the device felt like a robotic arm leading me. Anchoring at the wrist and tensioning the arm and torso while still allowing some play in the palm of the hand and fingers, allowed me to infer a certain amount

receiver needs both to push and yield, to simultaneously reach out to the stimulus and remain anchored to their own centre.

Another practice I explored briefly but chose not to include in the workshop is to learn a movement sequence through touching a moving dancer. One dancer executes a dance sequence, while another learns whatever she can by feeling the shape and form of the mover.<sup>111</sup> This practice brings tactual acuity to the fore, but also emphasises the aspects of recall and the difficulty of retention of detail, which inspired some of the creative decisions for *re-membering(s)*, but which I felt would detract from my aims in *haptic\_dance*. Of course another well established dance practice in which touch is a key element is Contact Improvisation (CI). I chose not to use CI in this research, partly because the form is already well researched and practised whether for training, choreography or performance, and because the focus of *haptic\_dance* is specifically to explore touch as the mode of performance. The aim is to convey impressions of the dance, by a performer for an audience, rather than to engage touch as a mode of movement and expressive vocabulary shared by participants (and possibly viewed by an audience).

#### **6.4.2 intricate tactile sensitivity**

My own knowledge and skill in the delivery of touch, and my sensitivity to anticipate possible client responses, has been accrued over more than 20 years of hands-on

---

about the quality, quantity and direction of movement from the force-feedback. With the fixed-point at either the elbow or shoulder joints, specific impulses and dynamics become less clear. Establishing the fixed point at the sternum, connecting the distal palm to the axial spine, made the relationship to the haptic pen much more fluid and required me to constantly negotiate my degree of agency – active/passive, leading/following. This sensation was rather like that experienced in the Pushing Hands exercise, and is also similar to the relationship between puppet and puppeteer in Bunraku, which uses marionettes with rod controls. In order to enliven the object, it is essential to know the centre and orientation of the puppet relative to itself, the manipulators and the audience, the dynamic impulse that initiates a movement and breaks inertia, and the fixed and moving points. In general, one wants to produce the least amount of movement to avoid ‘ballayage’ or sweeping moves, which tend to kill the illusion of life. This correlates with the difficulty of establishing still points encountered in *haptic\_dance* and the variations in participant responses.

<sup>111</sup> I initially explored this device during the RODA choreographic lab in Leeds in 2006, as part of the choreographic process for Passport. Siobhan Murphy describes a similar exercise used by Lisa Nelson in which the dancer “learns the movement through synthesising multiple tactile images.” (2008, p.146)

professional experience. Don Hanlon Johnson describes this type of knowledge and skill as *intricate tactile sensitivity* (ITS). He identifies three qualities that distinguish this sensitivity – discreteness, pattern sensitivity, and a sensitive contact between therapist and patient (2000). An aspect of ITS involves the therapist’s capacity for tactful engagement and to discern information from visual and tactual clues, accompanied by a parallel cultivation of their own bodily sensitivity. “Like mindfulness meditation, the cultivation of this touch involves a sustained practice of learning how to pay attention to specific realms of human experience” (ibid). I concur with his proposal that ITS is in large part an attentional practice. According to Johnson, the qualities of ITS are systematically taught in major schools of Western Integrative Bodyworks – this umbrella term includes somatic practices such as those outlined elsewhere in the thesis – and, he argues, develop practitioner skills that are distinctively different from mental, analytical, spiritual or formulaic approaches to touch (ibid).<sup>112</sup>

Over the course of the research I shared and tested ideas with many other massage and bodywork therapists, as well as with dancers. However for the pilot trials and performance of *haptic\_dance* I decided that only I would deliver the work, rather than ask other dancers to do so. This is partly because of potential ambiguity concerning therapeutic and performance boundaries. The information for participants expressly states that the touch is for performance, not therapeutic purpose. This then means that the touch is not framed by certain established boundaries of the therapeutic context regarding professional ethics and code of conduct. Because of my experience, I feel confident that my touch will be safe and unambiguous, and also that should any participant have an unexpected or negative response to the touch I possess the skills to manage such a situation (although this never arose). Equally, by having only myself deliver the haptic version all the participants interfaced to the

---

<sup>112</sup> Johnson acknowledges the difficulty of designing an effective research study to empirically test the claims for ITS; much of the evidence is thus far anecdotal. The Touch Research Institute in Miami, established in 1992, is a leading centre for the development of research methods to study the impact of touch in science and medicine. Test results do indicate that touch therapy has beneficial effects on health and well-being. (Touch Research Institute, n.d.)



tactile sensitivity of the same person, giving some kind of constant measure by which to compare responses. I could also make judgements about the subtle changes and movements that occurred during *haptic\_dance*, deriving a lot of unspoken information in addition to the expressive feedback that participants consciously produced after receiving it. Finally, as a dance-artist I bring my personal knowledge of the dance from the inside; my understanding of the dance material is invested with the bodily sensitivity advocated by Johnson, cultivated by a sustained practice, and imbued with personal images and memories from which the movements derive. However, all the practices I have outlined here contribute to the skills and knowledge for anyone to undertake this work.

The practices of tactual acuity, the techniques of marking and the process of translating the dance material also have potential as tools for learning, teaching and analysis of dance and movement. One of the dancers commented that she was able to remember the dance material more easily, and felt she had a deeper understanding of it through having made marks and received impressions, as if the physical mnemonics were being re-inscribed onto her bodyscape. This performative aspect of the practices suggest their potential pedagogical, and also therapeutic, value.<sup>113</sup>

---

<sup>113</sup> *haptic\_dance* began by questioning whether touch can be considered as ‘seeing close-up’, inverting Rolf’s dictum that “seeing is touch at a distance” (Thompson, 2009). This, and the metaphorical notion of ‘seeing with the hands’ is raised in Mark Paterson’s discussion of the Molyneux question (2006). In the 1692 monograph *Dioptrica Nova*, William Molyneux posed the question of whether a person blind from birth who suddenly regained sight would be able to differentiate a cube and a sphere by vision alone. The question inquires into the interaction of touch and vision and their role in spatial cognition, into whether perceptions are amodal or cross-modal at birth, and/or into whether cross-modal perception must be learned through repeated experience. The potential for cross-modal transfer is the foundation for studies of sensory substitution systems that capitalise on the brain’s capacity for neural plasticity, such as the tactile-vision substitution system (TVSS) developed by neuroscientist Paul Bach-y-Rita in the 1960s. He initially used a chair with small vibrating points to stimulate the user’s back, creating a felt map of the field of vision, and later developed a tongue applied system working on the same principal. Studies show that through use of the tongue applied TVSS, for example, the visual cortex of blind people is engaged and enhanced. (Bubic et al, 2010) Recent studies also indicate potential that enhanced tactual acuity through long-term attentional practices such as T’ai Chi (Kerr et al., 2008) may contribute to enhanced neural plasticity. If this is demonstrated to be the case, the practices of tactual acuity can be considered to be performative in every sense.



**fig 26: *haptic\_dance* - intricate tactile sensitivity.** Photo: Maria Falconer

## 6.5 Where the dance is

In amongst the issues and complexities raised by *haptic\_dance* a crucial question has to be *where* the dance is? In order to translate and deliver the dance, one needs first to know its location.

At the still point of the turning world. Neither flesh nor fleshless;  
Neither from nor towards; at the still point, there the dance is,  
But neither arrest nor movement. And do not call it fixity,  
Where past and future are gathered. Neither movement from  
nor towards,  
Neither ascent nor decline. Except for the point, the still point,  
There would be no dance, and there is only the dance.

This passage from T.S. Eliot's 1935 poem *Burnt Norton* (1959, p.15) has become something of a mantra among dancers. Here I interrogate Eliot's proposal that the dance is at the still point. After they had received the *haptic\_dance* I asked the same question of all participants – whether they had felt any sense of a dance, and if so, *where* the dance was for them. Participants' responses included comments such as;

“The dance for me was in *your* body.”

“it was in *me*. *My* body’s response to what you were doing was the dance.”

“Well it was not exactly just your dance, it was also *my* dance, which means that it’s rather immersive.”

“I sensed it to be between what was going on, what was happening; it was *between*. It wasn’t just a translation of what you were giving me ... it went in a pattern somehow.”

“I felt a pattern, but it wasn’t your pattern that you were doing on the outside, it was my own pattern.”

“it did feel like a dance but it felt like I was part of the dance ... Even though I wasn’t by my own volition dancing, I did feel like I was on a stage within a dance.”

“It was definitely in me, and it was definitely in you, so it was sitting in the space between us.”

“It was just flowing around me and moving me around. So I was part of it as well.”

“I was reacting to the dance. You are the dancer. [SH: So its in me?] Yes, it’s that simple.”

“It was in *my* body, although I know it could be somewhere else as well.”

“Sometimes it was in you, sometimes it was more within me, kind of internally, other times it was very much in my head when my imagination floated off ... it was more kinaesthetically imagined, really.”

Any text leads to a multiplicity of possible readings, but the haptic is a complex sense and it is difficult to anticipate reception of a touch-text; “the tactile impression is ‘interpreted’ in the light of the nature and number of the parts of the body brought into play, and even of the physical circumstances under which it appears” (Merleau-Ponty, 2002, p.366). Touch may be experienced as directive or indicative; the impulse to respond may be immediate, or come to awareness gradually. The response may reflect the intention of the touched as subject or as agent. Touch brings attention to the multiple layering of selves, and to the constantly changing possibilities and choices to involute or evolute attention. The two bodyscapes – of giver and receiver – are the terrain of this attentional folding and unfolding, in which the forces of tensegrity destabilise the shared environment created by two evanescent, fugitive and motile media. The point of contact is the site of a fluid transfusion of interpretation, a syncopation of agency.

The variations in responses to the question of *where* the dance is highlight a need to determine fixed points in order to get some kind of purchase in this volatile terrain. It is necessary to negotiate degrees of agency – the extent to which either of the two people involved in *haptic\_dance* offer the resistance that creates the fixed point, the still point. If the receiver is very passive, or allows the movement to follow through, then they are no longer in an arrangement to receive the next impulse according to the tensegrity connections I intended to deliver. In the early pilot trials I gave as little information as possible concerning the receiver’s agency, in order to test the extent to which this negotiation could be achieved non-verbally. I found that if I wished to remain within the choreographic score I had crafted, I needed to increase the amount of information provided. The wording of this information aimed to establish a clearer social context for the work, defining more conventional roles and responsibilities for performer and audience. However to clearly establish rules and precisely determine the degrees of compression and counter-tension exercised by the receiver in order to fix the the still points, one would have to deliver a performance that is the very opposite of the Open Work. Marcel Duchamp playfully highlights the absurdity of attempting to instruct the viewer to make such a ‘closed’ reading of a work in the

title of his 1918 piece, *To Be Looked at (from the Other Side of the Glass) with One Eye, Close to, for Almost an Hour*.

In addition to the question of whether the audience need instructions for viewing, we can ask whether they would benefit from training in the practices of tactual acuity prior to attending the show. *Double Skin, Double Mind* (2007) by Chris Zeigler with Emio Greco | PC is an interactive installation “designed as a visual and acoustic toolset to improve movement awareness in a new media environment” (Zeigler, 2007), in which the audience are ‘skilled-up’ through experiencing a 30-minute version of the company’s own training regime prior to watching the performance. Many audience members reported an enhanced viewing experience after this somatic preparation. At this stage in my research I have simply adapted the written information for participants, in order to better establish roles and agency. However, the approach adopted by Zeigler and Greco may offer a useful model of ways to enhance somatic understanding through somatic engagement. Such an undertaking is beyond the scope of this thesis but presents interesting avenues for future research.

## **6.6 tangible acts: touch in performance**

Art historian Jennifer Fisher suggests that “In contrast to the visualist legacy, which carries a logic separating subject and artwork, a haptic aesthetic [in performance work] engages knowledge emergent in proximity, undeferred presence, and the in-between spaces of becoming” (in Banes & Lepecki, 2007, p.176). Fisher outlines a number of tangible acts and touch performances which create this proximity, undeferred presence or spaces of becoming, some by touching the audience, others by inviting them to touch. For example, Marinetti’s *Sudan-Paris* presents the audience with a touch-scape – the audience touches the artwork; Valie Export’s *Tapp und Tastino* (1968) – the audience touches her breasts inside the mini-proscenium of a cardboard bra-theatre; Marie Ange Guillemont’s *Le Paravent* (1997) – the audience is touched through a foot massage. Mierle Laderman Ukeles’ *Touch Sanitation* (1979-80) uses touch as social commentary – the artist shakes hands with New York’s sanitation workers. In Praxis’ *The New Economy* (1999-2001) touch is used

as social healing – the audience receives hugs from the artists. In Marina Abramovic & Ulay's *Imponderabilia* (1977) touch is provocation – the audience having to squeeze between their two naked bodies to enter a room.

The specific application that I propose to develop for *haptic\_dance*, of using touch to translate and deliver a dance performance, is relatively little explored. The mediation of dance in performance remains predominantly visual. Frank Bock and Simon Vincenzi used touch in the development process of their performance work *invisible dances*... “physically ‘putting’ a journey onto somebody’s body with emotion, with pressure, with textures” (Bock, in Fleming, 2004, p.19). In this case touch informed the development of performance material, but was not the medium experienced by the audience. *The Art of Touch* (1995), a dance work by Siobhan Davies, is imbued with a choreographic exploration of touch. The work is inspired by the baroque composer François Couperin’s exercises for training the touch of the keyboard, and “the quality and weight of the foot against the surface of the floor, the imprint of the body on the surrounding air and the different dynamics of the sense of touch” (Siobhan Davies RePlay, 2009). However the performance is still a viewed experience and ‘touches’ the audience empathically.

Members of Touchdown Dance company include sighted and visually impaired people, and specialise in using touch and sensory feedback techniques. Their workshops employ many practices of tactual acuity that are similar to those outlined earlier, and Contact Improvisation is a central choreographic mode.<sup>114</sup> Choreographer Eva Karczag’s practice also uses touch for both therapeutic and aesthetic purposes. As a practitioner of T’ai Chi Ch’uan, Alexander Technique, Release Technique and CI, much of Karczag’s teaching engages tactual practices to facilitate the ease and expansiveness of a dancer’s movement. She discusses how using touch as the

---

<sup>114</sup> Touchdown was founded by Steve Paxton and Anne Kilcoyne in 1986 at Dartington College of Arts. It is now based in Manchester and directed by Katy Dymoke. “Our specialist area is in the use of touch; firstly, as a mirror in the learning process and secondly as the primary sense in the process of movement excavation. Touch is our common sense and provides us with a language of communication; we work with the intention to normalise the perception of touch and to reaffirm its potency in both learning and teaching practices” (Touchdown Dance, 2003).

primary source for choreographic purpose, as opposed to in teaching or workshop material, changes this aim; “In this other work [i.e. choreographic rather than teaching] it may be that someone will go into their contractions or their screwing up of themselves, their ugly unproductive stuff, whatever that is; it doesn’t really matter” (in Dempster, 1995, p.46). Karczag explores and exploits touch to open new possibilities for finding and creating movement material, disrupting and bringing into question habitual patterns. However, touch is again not the mode of reception for the audience.

In works such as *Ring*, *Love University* and *Secret Service*, choreographer Felix Ruckert does use touch as the choreographic material for performances which explore provocation, domination, sensuality and pain. *Secret Service* is grounded in practices of BDSM.<sup>115</sup> In the first level the audience,

are moved around, stretched out on the floor, lifted up, pushed around a bit, striked [sic], caressed and touched in very different ways, according to how and what they physically communicate to us. We try to read their body language ... Everything is fine as long as it is safe ... [The second level] demands a lot of trust. As a preparation, the guests are not just blindfolded but also stripped to their underwear and cuffed. Inside we give them a rather soft introduction to D/S situations, Bondage, clothspins [sic], whips and more. (Ruckert, 2005)

In this work, touch is delivered *to* the audience members, who are placed in a position of exposure and vulnerability; there is a negotiation of trust and testing of boundaries, and the content of the dance is determined by what the dancers interpret from the audience’s body language.

*the puppet* (2005) by kondition pluriel is an interactive performance work in which the audience can activate touch-sensors distributed within a multi-sensory installation environment and on the costumes of the performers. The invitation to touch the

---

<sup>115</sup> The compound acronym, BDSM, is derived from the terms bondage and discipline (B&D or B/D), dominance and submission (D&S or D/S), and sadism and masochism (S&M or S/M) (wikipedia.org, 2011)

performers' bodies generates a relationship between the spectators and the dancers which "fluctuates between dialogue, confrontation, collaboration, domination and play" (kondition pluriel, 2011). When the company were researching the work, one difficulty they encountered was audience' reluctance to touch the dancers<sup>116</sup> raising the question, "In what state of mind must the performers place themselves to encourage the spectators to enter into relation with them?" (ibid)

Susan Kozel performed within Paul Sermon's interactive work, *Telematic Dreaming* in which she and participants occupied identical beds in remote spaces. Above each was a video camera and projector, and the virtual image of the occupant of one bed was projected beside the other. Kozel's improvised choreography involved a physical shaping of her real body to meet the touch and movement of the virtual image of her partner. In this work, the touch is delivered to and by the audience, but from and to virtual bodies. Kozel's experience is interesting in that, by committing herself to this choreographic task of responding as precisely as possible to whatever was presented by the other person, although she came to no physical harm, the effort of contorting and tensioning her body to meet the (absent) touch was physically and emotionally taxing, enriching, and at times overwhelming (Kozel, 2008). Furthermore her experience was that once people became familiar with the situation, their reluctance to cross the social boundaries that inhibit touch – alluded to by kondition pluriel – sometimes shifted toward quite dramatic transgressions. People interacted with her virtual image in increasingly intimate ways, at first tender, then more sexually extreme or even abusive. "Someone took out a knife "... Someone elbowed me in the stomach and I doubled over" (2008, p.97). On another occasion, "Two men in leather jackets jumped my image on the bed. One attacked my head and the other my pelvic area" (ibid, p.98).<sup>117</sup> The absence of Kozel's physical body may have contributed to

---

<sup>116</sup> Comment made during an informal conversation with choreographer Marie-Claude Poulain at Digital Cultures Lab, Nottingham Trent University, 2005.

<sup>117</sup> A similar transgression of boundaries occurred in the performance of Marina Abramović's work *Rhythm 0* (1974). The artist placed 72 objects on a table, including a feather, a whip, a gun and a single bullet. She then remained passive for 6 hours and invited the public to touch or manipulate her body and to use the objects in any way they chose. "Interactions escalated to intimate touching, the cutting of her skin, and eventually, to placing the gun to her head with her finger wrapped



these audience members feeling empowered to act out fantasy scenarios, and it is possible that the social context of the bed was also perceived as provocative. The haptic clearly does not readily lend itself to singularity of experience or interpretation, and while technological mediation may alter this, it does not (yet) seem to simplify it. As kondition pluriel observe, the introduction of touch into the relationship between performer and audience can be interpreted as an invitation to dialogue, confrontation, collaboration, domination or play.

## 6.7 conclusions

The making and performance of this work revealed the potential for haptic choreography as a novel and challenging means for communicating dance. In my initial thinking about *haptic\_dance* I had imagined employing something like a body-suit to mediate the haptic experience through imposing the movement signature of one person onto another.<sup>118</sup> Future development of my research will explore the

---

around the trigger” (Fisher, in Banes & Lepecki, 2007, p.169).

<sup>118</sup> The idea of a body-suit has been researched by others within biomedical, therapeutic, gaming and artistic contexts. Gaming vests – shirts which simulate the impacts of punches, kicks and bullets – are becoming a standard part of an average PC gamer’s equipment. Philips Electronics has made a jacket to study the effects of emotional immersion on movie viewers. “We want people to feel Bruce Lee’s anxiety about whether he will get out alive” (Lemmens in Jones, 2009). The jacket uses an array of 64 actuators to respond to signals encoded in a DVD or to a control programme, and according to Lemmens, can send a shiver up the viewer’s spine or tense the limbs (ibid). CuteCircuit’s *Hug Shirt* delivers hugs to the receiver through actuators embedded in the shirt (cutecircuit.com). The HAL (Hybrid Assistive Limb) Cybernetic Suit is a cybernetic bodysuit that augments body movement and increases user strength. Pads placed on the body detect faint bioelectrical signals, which then move the suit (Guillford, 2009). The Tangible Media Group at the MIT Media Lab have developed a number of wearable haptic interfaces, including *Touch Sensitive*, a sensory cocoon which transmits compression and warmth to simulate the therapeutic touch of massage (Vaucelle & Abbas, 2007), and the *TapTap* “a wearable haptic system that allows nurturing human touch to be recorded, broadcast and played back for emotional therapy” (Bonnani et al, 2006). For the work *cyberSM* (1993) artists Stahl Stenslie and Kirk Woolford built a full body, tele-tactile communication system (Stenslie, 2011). In Stenslie’s *inter\_skin* project (1994) participants wear a more advanced sensoric outfit that both transmits and receives multi sensoric stimuli. “By touching my own body I transmit the same touch to my recipient” (ibid). In another work *Psychoplastics*, Stenslie asks, “How does it feel to become someone else? From the inside?” (Psychoplastics, 2010). To experience this work, users wear a vibrotactile bodysuit and binaural sound system which “imprints stories about corporeal ecstasy” (ibid). Artist Ka5 is researching concepts of body memory and technological narratives. One current project – part of *Prospectus for a Future Body* – seeks to recreate a 1973 performance by Butoh dancer Tasumi Hijikata. Electric sensor pads applied to the muscles of the artist are programmed to stimulate muscle contractions. The contractions cause the body to move in patterns which replicate the choreography of Hijikata, learned from video and coded into a database, thereby generating a “muscle memory transfer” (KA5, 2010).

potential of haptic mediation technologies within a choreographic context. However, by beginning this research with what seemed the simplest of mediating tools – the hands – I encountered the fascinating complexities of delivery and interpretation of interpersonal touch, which then became the subject of the work, together with the need to locate the dance and establish how it might be translated into touch. The choreographic processes for *haptic\_dance* demonstrated that there is no straightforward ‘translation’ of dance to touch. The practices of tactual acuity, the techniques of marking, and the process of translating the dance material all have pedagogical and therapeutic value.

## Chapter 7: concluding

In this thesis I have employed choreographic and somatic practices, and their mediation through performance and technologies to facilitate critical engagement and apprehension of embodiment. The heuristic methodology employed advocates following the materials and laying down a path in walking. The journey is characterised by the resonance and rhythms of understanding providing the score for dancing, and vice versa. En route I have engaged a broad range of disciplinary and theoretical methods which emphasise movement and mindful awareness, deliberately keeping the scope of such disciplines open so as to account for the fluidity of subjectivity and the mutability of the materials and tools. I am not advocating a ‘pick & mix’ attitude to the other disciplinary practices referred to. Rather, the aim is to explore and highlight the in-betweens.

### 7.1 reviewing the research journey and outcomes

As the starting point for the research, *danced process #1* engages talking-while-dancing. The aim is to create a cognitively challenging choreographic taskscape as a practical situation for critical reflection on what might be meant by such terms as embodied mind and cognition. The questions and findings made through this practice-led approach offer novel contributions of relevance to research into embodiment within philosophy, cognitive science, and gesture studies. Talking-while-dancing also constitutes a ‘practice of improvisational awareness’, which cultivates skills to describe the movement in the moment. This illuminates aspects of the subjective experience of movement and is of value in dance analysis and pedagogy.

*re-membering(s)* focuses on interfaces – between music and dance, between performers, and between performers and audience. The choreographic taskscapes emphasise the activities of remembering and reporting, aiming to illuminate thinking processes and highlight the difficulty of retaining mnemonic detail. The aleatoric methods establish an ‘open work’ which engages all collaborators in an active

dynamical system. The choices, complexity and unpredictability of the performance environment demand and develop perceptual alertness. Learning to cope with the choreographic situation functions as and benefits from ‘practices of inhibition’.

*InTensions* engages themes of tension and tensegrity. One aim is to illuminate and deepen understanding of the postural and movement habits that pattern bodyscape. The choreographic processes evoke the effects of trauma by disrupting this patterning, through the use of imagination and through creating situations that make multiple and often contradictory attentional demands. Learning to navigate these demands constitutes and is enriched by ‘practices of embodied reflection’. These allow development of attentional skills for coping with the environment, whether in specialized performance settings or everyday experience. The practice therefore has potential therapeutic value and makes a contribution to the fields of Dance and Movement Therapy, and Body Psychotherapy.

*Bodytext* involves speech, reading, writing and the moving body. The choreographic inquiry explores embodied memory and the notion of ‘bodystories’. Excavating and reporting bodily narratives through written and danced texts brings attention to ‘ghost gestures’ relating to the stories’ telling that are implicated in scripting characteristic movement patterns. There is a focus on technological mediation to create an interactive environment employing an innovative combination of video tracking, voice recognition, audio synthesis techniques and interpretive grammar engine. The dancer’s movement causes texts and sound to re- and de-compose, thereby destabilising and bringing into question notions of meaning. A crucial aspect of this work is that the performance environment is a dynamic system that is complex, unpredictable and emergent. The performer is immersed in an environment that changes and is changed by her interaction. I examine how this constitutes and is supported by ‘practices of attentional alacrity’. These are of particular relevance for contemporary dancers and performers who work in technologically mediated or interactive performance environments.

*haptic\_dance* aims to interpret, translate and transfer aspects of the dancer's subjective kinaesthetic experience through touch. The use of touch to deliver or communicate a dance is a novel and little explored choreographic approach. By employing what seemed the simplest of mediating tools – the hands – I encountered the complexities of delivery and interpretation of interpersonal touch. This then became the subject of this work, together with the need to locate 'the dance'. The uncertainty as to the whereabouts of the dance disrupts and brings into question dance's ontology. *haptic\_dance* expands the boundaries between action, perception and cognition in both dancer and audience and contributes to current research into kinaesthetic empathy. The 'practices of tactual acuity' and the process of translating the dance material are of value for dance and movement analysis and pedagogy, and in somatic practices.

## **7.2 reflections**

Over the course of the research, dance has been stilled, spoken, scripted, translated and mediated through the spoken reports of *danced process #1*, the gesture-for-speaking of *re-membering(s)*, through the imaginative transformations of *InTensions*, the writing and rewriting of *Bodytext* and the acts of translation of *haptic\_dance*.

Through the choreographic practice I have encountered themes of action, perception, polyattentiveness, memory and language. Methods of reporting and translating across media have revealed embodied experience as multi-layered, sensorial, perceptual, mnemonic, imaginative and linguistic.

That the inquiry is permeated by encounters with language indicates, as Lepecki suggests, that the modern body "reveals itself fully as a linguistic entity" (2006, p.7). This outcome was for me the most surprising, and revealed the extent to which my initial premise carried a prejudice that 'embodied knowledge' should be tacit and unspoken, and that language is somehow a construct distancing us from an 'organic' or 'authentic' lived experience. A mistrust of language is prevalent among many dancers. Reassessing this has radically altered the course of my thinking about embodiment and is at the core of the contribution I hope this thesis will make within

the fields of dance, somatic practice and in related domains of practice and epistemology.

I have argued for models of bodyscape and tensegrity schema whereby layers of attention are considered to be multiple and simultaneous and can be accessed to differing depths and degrees of conscious awareness, and for an attitude of perceptual alertness and attentional alacrity. There is a focus on polyattentiveness and complexity. Many of the choreographic processes and taskscapes place multiple attentional demands on the performers that are often frustrating and might be impossible to achieve. My aim is not to establish that complexity and polyattentiveness is better than focused attention – it may sometimes be much more useful to demarcate a single circle of attention than to multi-task. However the taskscapes and practices demand and enhance the capacity to cope in more complex situations. The arguments I have been developing here lean to a ‘rich’ view of conscious experience, rather than ‘thin’;

The phenomenological difference between the rich and thin views is vast. On the first view, our stream of conscious experience is aswarm with detail in many modalities at once, both inside and outside the field of attention; on the second, the stream of experience is limited to one or a few attention-occupying activities or perceptions at a time. (Schwitzgebel, 2007, p.31)

Perhaps a next step in the inquiry into embodiment could be to simplify the choreographic approach. What if, for example, I ask dancers to ‘just do’ the material without all the complications of dealing with complex multi-task environments? Merce Cunningham, critiquing expectations that dance be representational or a carrier of meaning, suggests,

it seems enough ... that what is seen, is what it is. I do not believe it is possible to be too simple. What the dancer does is the most realistic of all possible things. And to pretend that a man standing on a hill could be doing everything except just standing is simply divorce. Divorced from life, from the sun coming up and going down, from clouds in front of the sun, from the rain that comes from the clouds and sends you into the drug store for a cup of coffee. (Cunningham, 1952)

I agree with the ethos of Cunningham's statement and I feel it *is* enough for the dancer to do the most realistic thing possible; to execute the material with an attitude of perceptual alertness. However neither the material, the dancer nor the standing man are socioculturally neutral. The man on the hill may be a climber celebrating his ascent or a suicide contemplating his descent. They carry their history – their bodyscapes are complexes of signs, micro-landscapes of differences, with bodystories and ghost gestures haunting the movement patterns. Further, as I have shown, self-movement is at once a tactile-kinaesthetic and a kinetic happening perceivable from within and without, and awareness-levels for experiencing it can vary along a gradient. To stand on a hill or to dance is not attentionally neutral. One always has the potential to be doing more than just standing or just dancing; “any time we care to pay closer attention to our tactile-kinesthetic body, there it is” (Sheets-Johnstone, 2009, p.261). Schwitzgebel reminds us that “the mere fact of thinking about whether you have experience of your feet in your shoes may itself create that experience” (2007, p.13). In his essay, *Lumbar Thought* (1986) Umberto Eco's concern is the attentional demands of his new trousers;

The jeans didn't pinch but they made their presence felt ... As a result I lived with the knowledge that I had jeans on ... I thought about the relationship between me and my pants, and the relationship between my pants and me and the society we lived in. I had achieved heteroconsciousness, that is to say, an epidermic self-awareness. (1986, p.194)

Steve Paxton's small dance *The Stand* demonstrates the complexity of 'just' standing; to stand with attention is to reveal the layers of miniscule motions and the microseconds of stillness between movements on multiple, simultaneous levels. To 'just dance' one generally has to pay attention to at least one layer – be it tactile awareness of the surface of the floor, visual awareness of the light, the kinaesthetic sensation of moving or of clothing on skin, a pain in the body, etc. This returns to the premise established in *re-membering(s)* and developed through the concept of the tensegrity schema, that an attitude of attentional alacrity alerts us to the choices available to us at any new 'now', including the choice to make no choice. A proposal to simplify, for example by just standing, still seems to return us to themes of

complexity and attention. To choose an attitude of polyattentiveness seems therefore more accessible than to choose *not* to pay attention to the myriad things that populate the field of awareness and offer a richness of experience, any time we care to pay closer attention.

I began by questioning whether knowledge and meaning can be created or apprehended through the body and movement. The outcomes do not claim to prove the existence of embodied knowledge. They do, however, demonstrate the value of ‘thinking in movement’ and following the materials. The thesis makes an original contribution to research into embodiment. Leading the inquiry by practice has raised novel questions and revealed creative solutions and lends fuel to views that the lived bodily experience is an essential ingredient of embodiment. Works such as *Bodytext* and *haptic\_dance* make significant and original contributions to choreographic practices through innovative engagement with language, technology and touch, and the challenges they present to dance’s ontology. The interdisciplinary and collaborative nature of the research has highlighted novel connections and paths between disciplines, and the potential for new knowledge that emerges at the border crossings. This contributes insights of value to a wide set of disciplinary fields including informatics, cognitive science and consciousness studies, dance analysis, dance, movement and body psychotherapy, gesture studies and philosophy.

This thesis offers an example of how a reflective practice-led approach – dancing to understand – presents a means to apprehend the richness and complexity of embodiment, and to identify practices that facilitate coping. This, most importantly, enriches the practice of everyday life.

### **7.3 continuing**

Future developments of the research undertaken in this thesis will deepen the inquiries begun in *haptic\_dance* which, as the final work of the practice, opens up more avenues for exploration than the scope of this thesis permits. Had I begun with this work, it would no doubt have consumed the whole Ph.D. I will explore the



potential of haptic mediation technologies within a choreographic context as part of the ongoing inquiry into means for identifying and making tangible aspects of the subjective experience of movement. Versions of *haptic\_dance* may be created only with and for touch, thereby removing the ‘translation’ stage, while another avenue for research will be to compare the subjective approach to translation employed here with formal systems such as Laban Movement Analysis.

The choreographic process for *haptic\_dance* loosely engages concepts of inhabiting. One aim in the practices of inhabiting was to capture a sense of embodied presence – both in the present *here and now* and, through the use of imagination, in the remembered *there and then* – and of bodyscape re-occupying and being occupied by the mnemonic spaces that shape it. This has revealed itself as a larger project and introduces questions of *presence*. This shifts the focus of the inquiry into embodiment away from that of attention, which has been predominant throughout the thesis. However attention and presence are intimately linked, and both are of particular relevance for performers working in open, mediated or interactive performance environments. For Zarrilli, “if there is something like ‘presence’ it’s emergent ... what is important is to see what happens as it’s happening. So ‘presence’ is this sense of constantly and unremittingly ... attempting to inhabit that space of the unknown, or of ‘play’, in the moment” (Zarrilli, 2007b). The cultivation of presence may be another means whereby, when standing, we fully inhabit the space we stand in; when walking, we know we are walking; and when dancing we can exploit the spontaneity and richness of each danced moment.

Above all I will continue *Dancing To an Understanding of Embodiment*. Throughout the course of this thesis it has been a fulfilling duet which contributes creative and conceptual ideas for critical engagement with notions of embodiment.

## Bibliography

Adshead-Lansdale, J. (ed) (1999) *Dancing texts: Intertextuality in interpretation*. London: Dance Books.

Agamben, G. (2009) *What is an Apparatus? And Other Essays*. Stanford, CA: Stanford University Press.

Albright, A. (1997) *Choreographing Difference: The Body and Identity in Contemporary Dance*. Hanover, NH: University Press of New England.

Albright, A. & D. Gere (eds) (2003) *Taken by Surprise: a Dance Improvisation Reader*. Middletown, CT: Wesleyan University Press.

Alexander, F.M. (1985) *The Use of the Self*. London: Victor Gollancz Ltd.

Allsopp, R. & S. DeLahunta (eds) (1996) *The Connected Body?: an Interdisciplinary Approach to the Body and Performance*. Amsterdam: Amsterdam School of the Arts.

Armstrong, K. (2005) Intimate Transactions: The Evolution of an Ecosophical Networked Practice. *Fibreculture Journal*. issue 7. Available from <[http://journal.fibreculture.org/issue7/issue7\\_armstrong.html](http://journal.fibreculture.org/issue7/issue7_armstrong.html)> [accessed 19 July 2011].

Atzori, P. and K. Woolford (1995) Extended-Body: Interview with Stelarc. *CTheory*. Available from <<http://www.ctheory.net/articles.aspx?id=71>> [accessed 14 March 2012].

Auslander, P. (2008) *Liveness: Performance in a Mediatized Culture*. London: Routledge.

Banes, S. & A. Lepecki (eds) (2006) *The Senses in Performance*. London: Routledge.

Banes, S. (1987) *Terpsichore in Sneakers: Postmodern Dance*. Middletown, CT: Wesleyan University Press.

— (1998) *Dancing Women: Female Bodies Onstage*. London: Routledge.

— (1993) *Democracy's Body: Judson Dance Theater 1962-1964*. Durham, NC: Duke University Press.

— (1994) *Writing Dancing in the Age of Postmodernism*. Hanover, NH: Wesleyan University Press.

Bartenieff, I. & D. Lewis (2002) *Body Movement: Coping with the Environment*.

(2nd edition) London: Routledge.

Barthes, R. (1964) *Elements of Semiology*. Available from  
<<http://www.marxists.org/reference/subject/philosophy/works/fr/barthes.htm>>  
[accessed 19 July 2011].

Bergson, H. (2004) *Matter and Memory*. New York: Dover Publications.

Bermudez, J., A. Marcel, N. Eilm (eds) (1995) *The Body and the Self*. Cambridge MA: MIT Press.

Berthoz, A. (1984) *The Brain's Sense of Movement*. Cambridge, MA: Harvard University Press.

Biggs, S., M. Dima, H. Ekeus, S. Hawksley, W. Timmons, M. Wright (2009) The 'H' in HCI: enhancing perception of the interactive through the performative. in: Schumaker, R. (ed) *Third International Conference 2009, Virtual and Mixed Reality, San Diego, CA., 19-24 July 2009*. Proceedings. *Lecture Notes in Computer Science*, Vol.5622, pp.3-12. Berlin: Springer-Verlag.

Biggs, S. & S. Hawksley (2006) Memory Maps in Interactive Dance Environments. *International Journal of Performance Arts and Digital Media*, Vol.2 (2), pp.123-137.

Birdwhistell, R. (1952). *Introduction to Kinesics: An Annotation System for Analysis of Body Motion and Gesture*. Louisville, Kentucky: University of Louisville Press.

Birringer, J. (1998) *Media & Performance: along the Border*. Baltimore: The John Hopkins University Press.

— (2004) Dance and Interactivity. *Dance Research Journal*, Vol.35/36 (2/1), pp.88-112.

— (2005) Tanz im Kopf/Dance and Cognition. *Jahrbuch 15 der Gesellschaft für Tanzforschung*. Hamburg: LIT Verlag.

— (2008) *Performance, Technology, & Society*. New York: PAJ Publications.

Bishko, L. (1994) Expressive Technology: The Tool as Metaphor as Aesthetic Sensibility. *Animation Journal*, Vol.3 (1), pp.74-91.

Bither, P. (2008) *Trisha Brown: So That the Audience Does Not Know Whether I Have Stopped Dancing*. USA: Walker Art Centre.

Black, C. (2009) How Absence makes the Heart Grow Fonder. *The Scotsman*, 16th August 2009.

Blanke, O. & C. Mohr (2005) Out-of-body experience, heautoscopy, and autoscopic hallucination of neurological origin. Implications for neurocognitive mechanisms of corporeal awareness and self consciousness. *Brain Research Reviews*, Vol.50, pp.184-199.

Bonnani, L, J. Lieberman, C.Vaucelle, O. Zuckerman. (2006) TapTap: A Haptic Wearable for Asynchronous Distributed Touch Therapy. *CHI 2006*, April 22-27 2006, Montréal, Québec, Canada.

Bourdieu, P. (1977) *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.

Brandstetter, G & H. Völckers (eds) (2000) *ReMembering the Body*. Ostfildern: Hatje Cantz Verlag.

Bremmer, J. & H. Roodenburg (eds) (1991) *A Cultural History of Gesture: from antiquity to the present day*. Cambridge: Polity Press.

British Library (n.d.) *Archival Sound Recordings Project (2004-2009)* Available from <<http://sounds.bl.uk/Browse.aspx?collection=Soundscapes>> [accessed 01 August 2011].

Broadhurst, S. & J. Machon (eds) (2006) *Performance and Technology: Practices of Virtual Embodiment and Interactivity*. Basingstoke: Palgrave Macmillan.

— (2009) *Sensualities/Textualities and Technologies*. Basingstoke: Palgrave Macmillan.

Brook, P. (1968) *The Empty Space*. London: Penguin.

Brooks, V. (2007) *Dance and Media Timeline*. Dance Films Association. Available from <<http://dancefilms.org/resources/dance-and-media-timeline/>> [accessed 06 August 2011].

Brown, C. (2007) *Chance and Circumstance: Twenty Years with Cage and Cunningham*. New York: Alfred A. Knopf.

Bubic, A., E. Sterim-Amit, A. Amedi. (2010) “Large-Scale Brain Plasticity Following Blindness and the Use of Sensory Substitution Devices”. In: Naumer, M. & J. Kaiser (eds) *Multisensory Object Perception in the Primate Brain*. New York: Springer, pp.351-380.

Bulwer. J. (1644) *Chirologia: or the naturall language of the hand. Composed of the speaking motions, and discoursing gestures thereof. Whereunto is added Chironomia: or, the art of manuall rhetoricke. Consisting of the naturall expressions, digested by art in the hand, as the chiefest instrument of eloquence.*

London: Thomas Harper.

Burns, R. (2000) *Introduction to Research Methods*. London: Sage Publications.

Burt, R. (2006) *Judson Dance Theater: performative traces*. Abingdon: Routledge.

Butler, J. (1988) Performative Acts and Gender Constitution: an Essay in Phenomenology and Feminist theory. *Theatre Journal*, Vol.40 (4), pp.519-531.

— (1989) Foucault and the Paradox of Bodily Inscriptions. *The Journal of Philosophy*, Vol.86 (11), pp.601-607.

Butterworth, J. & L. Wildschut (eds) (2009) *Contemporary Choreography: a critical reader*. London: Routledge.

Carter, A. (1998) “Feminist Strategies for the Study of Dance”. In: Goodman, L. & J. De Gay (eds) *The Routledge Reader in Gender and Performance*. London: Routledge, pp.247-250.

— (ed) (2004) *Rethinking dance history: a reader*. London: Routledge.

Carr, W. & S. Kemmis (1986) *Becoming critical: education, knowledge, and action research*. London: Deakin University Press.

Casey, E. (1976) *Imagining: a Phenomenological Study*. Bloomington: Indiana University Press.

— (1987) *Remembering: a Phenomenological Study*. Bloomington: Indiana University Press.

Cassinelli, A. (2005) *The Khronos Projector*. Available from <<http://www.k2.t.u-tokyo.ac.jp/members/alvaro/Khronos/>> [accessed 18 July 2011].

Clark, A. (1997) *Being There: Putting Brain, Body and World Together Again*. Cambridge, Mass: MIT Press.

— (1999) *From Fish to Fantasy: Reflections on an Embodied Cognitive Science*. Available from <<http://www.philosophy.ed.ac.uk/people/clark/pubs/TICSEmbodiment.pdf>> [accessed 30 July 2011].

— (2000) *Mindware: an Introduction to the Philosophy of Cognitive Science*. New York: Oxford University Press.

— (2003) *Natural Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*. New York: Oxford University Press.

- (2008a) Pressing the Flesh: A Tension in the Study of the Embodied, Embedded Mind? *Philosophy and Phenomenological Research*, Vol.76 (1), pp.37-59.
- (2008b) *Supersizing the Mind: Embodiment, Action, and Cognitive Extension*. Oxford: Oxford University Press.
- Classen, C. (ed) (2005) *The Book of Touch*. Oxford: Berg Publishers.
- Cohen, B. (1993) *Sensing, Feeling, and Action: The Experiential Anatomy of Body-Mind Centering*. Northampton, Mass: Contact Editions.
- Conibere, N. (2008) This is not Sublime. *Dance Theatre Journal*, Vol.22 (4), pp.8-14.
- Coniglio, M. (2005) “The Importance of Being Interactive” in: Carver, G. & C. Beardon (eds) (2005) *New Visions In Performance*. Taylor & Francis e-library, pp.5-12.
- contactimprov.net [website] Available from <<http://www.contactimprov.net/>> [accessed 29 July 2011].
- Cooperrider, K. & R. Núñez (2007) Doing Time: Speech, gesture and the conceptualization of time. *CRL Technical Report*, Vol.19 (3), pp.3-19.
- Copeland, R. (1999) Cunningham, Collage, and the Computer. *PAJ 63*, Vol.21 (3), pp.42-54.
- (2004) *Merce Cunningham: Modernizing the Modern Dance*. London: Routledge.
- Corballis, M. (2010) The Gestural Origins of Language. *WIREs Cogn Sci*, Vol.1, pp.2-7.
- Cranny-Francis, A. (1995) *The Body in the Text*. Australia: Melbourne University Press.
- Crossley, N. (1995) Merleau-Ponty, the Elusive Body and Carnal Society. *Body & Society*, Vol.1 (1), pp.43-63.
- (1996) Body-Subject/Body-Power: Agency, Inscription and Control in Foucault and Merleau-Ponty. *Body & Society*, Vol.2 (2), pp.99-116.
- Csikszetmihali, M. (1990) *Flow: The Psychology of Optimal Experience*. New York: Harper & Row.
- Cull, L. (ed) (2009) *Deleuze and Performance*. Edinburgh: Edinburgh University

Press.

Cunningham, M. (1952) *Space, Time and Dance*. *Aspen no.5+6, 1967*. Available from <<http://www.ubu.com/sound/cunningham.html>> [accessed 07 August 2011].

Cute Circuit (2011) *Cute Circuit* [website] Available from <<http://www.cutecircuit.com/>> [accessed 25 July 2011].

Damasio, A (2000) *The Feeling of What Happens: Body, Emotion and the Making of Consciousness*. London: Vintage.

— (2006) *Descartes' Error: Emotion, Reason, and the Human Brain*. London: Vintage.

— (2010) *Self Comes to Mind: Constructing the Conscious Brain*. London: William Heinemann.

De Lahunta, S, P. Barnard, I. Nimmo-Smith, J. Potts, & C. Ramponi (2006) Density of Agreement: Making Visible some Intangible Properties of Dance. *Dance Theatre Journal*, Vol.21 (3), pp.17-23

De Lahunta, S. (2005) Moving Ideas: some good questions for the dancing mind. *Ballettanz*, Vol.10, 2005, pp.20-23.

Deleuze, G. (2005) *Francis Bacon: the Logic of Sensation*. London: Continuum.

— (2004) *Difference and Repetition*. London: Continuum.

Deleuze, G. & F. Guattari (2004) [trans. Brian Massumi] *A Thousand Plateaus*. London: Continuum.

Dennett, D. (1993) *Consciousness Explained*. London: Penguin Books

— (2007) Heterophenomenology Reconsidered. *Phenomenology and the Cognitive Sciences*, Vol.6 (1-2), pp.247-270.

Dempster, E. (2003) Touching Light. *Performance Research*, Vol.8 (4), pp.46-51.

— (1995) Explorations Within the New Dance Aesthetic: An Interview with Eva Karczag. *Writings on Dance*, Vol.14, pp.39-52.

Denzin, N. & Y. Lincoln (2003) *Strategies of Qualitative Inquiry*. London: Sage Publications.

De Preester, H.& V. Knockaert (eds) (2005) *Body Image and Body Schema: interdisciplinary perspectives on the body*. Amsterdam: John Benjamins.

De Preester, H. (2007) To Perform the layered body – a short exploration of the body in performance. *Janus Head: Journal of Interdisciplinary Studies in Literature, Continental Philosophy, Phenomenological Psychology, and the Arts*, Vol.9 (2), pp.349-383.

De Quincey, T (2001) *Bodyweather: Dance in Practice*. Available from <<http://dequinceyco.net/media-archive/articles/>> [accessed 01 August 2011].

Derrida, J. (1988) “Signature, Event, Context”. In: *Limited Inc.* [trans: Samuel Weber and Jeffrey Mehlman] Evanston: Northwestern University Press, pp.1-23.

— (2005) *On Touching – Jean-Luc Nancy*. Stanford, California: Stanford University Press.

Desmond, J. (1997) *Meaning in Motion: New Cultural Studies of Dance: Post-Contemporary Interventions*. Durham, NC: Duke University Press.

Dewey, J. (2005) *Art as Experience*. New York: Perigree Books.

Dils, A. & A. Cooper Albright (eds) (2001) *Moving History/ Dancing Cultures: A Dance History Reader*. Connecticut: Wesleyan University Press.

Dixon, S. (2006) *Digital Performance: A History of New Media in Theater, Dance, Performance Art, and Installation*. Cambridge, Mass: MIT Press.

Doughty, S. (2007) Improvisation: what do I do and why do I do it? *Animated*, Winter 2007, pp.35-37.

Dourish, P. (2001) *Where the Action Is: the Foundations of Embodied Interaction*. Cambridge Mass: MIT Press.

Duggan, P. (2007) Feeling Performance, Remembering Trauma. *Platform*, Vol.2 (2), pp.44-58.

Eco, U. (1986) *Travels in hyperreality*. [trans: William Weaver] San Diego, CA: Harcourt Brace Jovanovich.

— (1989) *The Open Work*. [trans. A. Cancogni] Cambridge, Mass: Harvard University Press.

Eddy, M. (2002) Somatic Practices and Dance: Global Influences. *Dance Research Journal*, Vol.34 (2), pp.46-62.

Elgelid, S. (1999) Feldenkrais and the Body Image. *IFF Academy Feldenkrais Research Journal*, Vol.2, p.58. Available from



<<http://iffresearchjournal.org/volume/2>> [accessed 19 March 2012].

Eliot, T.S. (1959) *Four Quartets*. London: Faber and Faber.

Elliot, J. (1991) *Action Research for Educational Change*. Milton Keynes: Open University Press.

Emmorey, K. & J. Reilly (eds) (1995) *Language, Gesture, and Space*. Hillsdale, NJ & Hove: Lawrence Erlbaum Associates.

Faisal A, D. Stout, J. Apel, B. Bradley (2010) The Manipulative Complexity of Lower Paleolithic Stone Toolmaking. *PLoS ONE*, Vol.5 (11), e13718.

Feldenkrais, M. (1972) *Awareness Through Movement: Health Exercises for Personal Growth*. London: Penguin Books.

Fitt, S. (1998) *Dance Kinesiology*. New York: Shirmer Books.

Foster, S. (1986) *Reading Dancing: Bodies and Subjects in Contemporary American Dance*. Berkeley, CA: University of California Press.

— (ed) (1995) *Choreographing History*. Bloomington: Indiana University Press.

— (ed) (1996) *Corporealities, Dancing Knowledge, Culture and Power*. London: Routledge.

— (2002) Walking and Other Choreographic Tactics: Danced Inventions of Theatricality and Performativity. *SubStance*, Vol. 31 (2/3), issue 98/99, pp.125-146.

Fleming, M. (2004) *Molten all the Time*. *Dance Theatre Journal*, Vol.20 (3), pp.17-22).

Flemons, T. (2006) *The Geometry of Anatomy*. Available from <[http://www.intensiondesigns.com/geometry\\_of\\_anatomy.html](http://www.intensiondesigns.com/geometry_of_anatomy.html)> [accessed 19 July 2011].

Forsythe, W. (n.d.) *Choreographic Objects*. Available from <<http://www.williamforsythe.de/essay.html>> [accessed 19 July 2011].

Foucault, M. (1980) *Power/Knowledge Selected Interviews and Other Writings 1972-1977*. (ed: C. Gordon) Hemel Hempstead: Harvester Wheatsheaf.

— (1991) *Discipline and Punish: The Birth of the Prison*. [trans. Alan Sheridan] London: Penguin Books.

— (2001) *The Order of Things: Archaeology of the Human Society*. London:

Routledge.

— (2002) *Archaeology of Knowledge*. [trans: A.M. Sheridan Smith] London: Routledge Classics.

Fraleigh, S. (1987) *Dance and the Lived Body: a Descriptive Aesthetics*. Pittsburgh, Pennsylvania: University of Pittsburgh Press.

— (2000) Consciousness Matters. *Dance Research Journal*, Vol. 32 (1), pp.54-62.

— (2004) *Dancing Identity: metaphysics in motion*. Pittsburgh, Pennsylvania: University of Pittsburgh Press.

Fraleigh, S. & P. Hanstein (eds) (1999) *Researching Dance: Evolving Modes of Inquiry*. London: Dance Books.

Franklin, E. (1996) *Dynamic Alignment Through Imagery*. Champaign, Ill: Human Kinetics.

Fulkerson, M. (1975) The Language of the Axis. *Theatre Papers 1975*. Totnes: Dartington College of Arts.

Fuller, B. (1997) *Synergetics: explorations in the geometry of thinking*. [online html version] Available from <<http://www.rwgrayprojects.com/synergetics/synergetics.html>> [accessed 12 August 2011).

Gallagher, S. (2006) *How the Body Shapes the Mind*. Oxford: Oxford University Press.

Gallagher, S. & D. Zahavi (2008) *The Phenomenological Mind: an introduction to philosophy of mind and cognitive science*. Abingdon: Routledge.

Gallagher, S. & J. Cole (1995). Body image and body schema in a deafferented Subject. *The Journal of Mind and Behaviour*, Vol.16 (4), pp.369-390.

Gardner, H. (1993) *Frames of Mind: the theory of multiple intelligences*. London: Fontana.

Geldard, F. & C. Sherrick (1972) The Cutaneous “Rabbit”: a perceptual illusion. *Science*, Vol.178 (4057), pp.178-9.

Geller, P. (2009) Bodyscapes, Biology, Heteronormativity. *American Anthropologist*, Vol.111 (4), pp.504-516.

Gendlin, E. (1981) *Focusing* New York: Bantam New Age Books.

- Gentry, S. & R. Murray-Smith (2003) *Haptic dancing: human performance at haptic decoding with a vocabulary*. In: *IEEE International Conference on Systems Man and Cybernetics, Washington, D.C., 5-8 October 2003. Proceedings*, Vol.4, pp.3432 - 3437.
- Gershon, M. (1999) *The Second Brain: a Groundbreaking New Understanding of Nervous Disorders of the Stomach and Intestine*. London: Harper.
- Glaser, B.G. & A. Strauss (1999 [1967]) *The Discovery of Grounded Theory. Strategies for Qualitative Research*. Chicago: Aldine Pub.
- Goldin-Meadow, S. (2003) *Hearing Gesture: How our hands help us think*. Cambridge, MA: Harvard University Press.
- Goldin-Meadow, S. & S. Wagner (2004) How our hands help us learn. *Trends in Cognitive Sciences*, Vol.9 (5), pp.234-241.
- Goldman, D. (2010) *I Want to be Ready: Improvised Dance as a Practice of Freedom*. Ann Arbor: University of Michigan Press.
- Greenblatt, S. (1995). "Towards a universal language of motion: Reflections on a 17th century muscle man". In: Foster, S. (ed) *Choreographing History*. Bloomington: Indiana University Press.
- Grunbaum, T. (2008) The Body in Action. *Phenom Cogn Sci*, Vol.7 (2), pp.243-261.
- Grünwald, M. (ed) (2008) *Human Haptic Perception: Basics and Applications*. Basel: Springer.
- Grosz, E. (1994) *Volatile bodies: toward a corporeal feminism*. Bloomington: Indiana University Press.
- (2001) *Architecture from the Outside: Essays on Virtual and Real Space*. Cambridge, Mass: MIT Press.
- Grove, R., C. Stevens & S. McKechnie (eds) (2005) *Thinking in Four Dimensions: creativity and cognition in contemporary dance*. Melbourne University publishing e-book.
- Guillford, T. (2009) I am Ironman! *h+magazine*, March 18 2009. Available from <<http://hplusmagazine.com/2009/03/18/i-am-ironman/>> [accessed 25 July 2011].
- Hackney, P. (1998) *Making Connections: Total Body Integration through Bartenieff Fundamentals*. New York: Routledge.

- Hagendoorn, I.G. (2003) Cognitive dance improvisation: how study of the motor system can inspire dance (and vice versa). *Leonardo*, Vol.36 (3), pp.221-227.
- Hall, E. (1966) *The Hidden Dimension*. New York: Doubleday
- Hanna, T. (1988) *Somatics: reawakening the Mind's Control of Movement, Flexibility, and Health*. Cambridge, MA: Da Capo Books.
- Hartley, L. (1995) *Wisdom of the Body Moving: an introduction to Body-Mind Centering*. Berkley, California: North Atlantic Books.
- (2005) Seeking a Sense of Self: the Integration of Authentic Movement, and the Body-Mind Centering® approach to developmental Movement Therapy in Body Psychotherapy Practice. Available from <<http://www.ismeta.org/downloads.html>> [accessed 20 July 2011].
- Hay, D. (2000) *My Body, the Buddhist*. Middletown, CT: Wesleyan University Press.
- Hayles, N.K. (1999) *How We Became Posthuman: virtual bodies in cybernetics, literature and informatics*. Chicago: University of Chicago Press.
- Hayward, V. (2001) Survey of Haptic interface research at McGill University. *Workshop in Interactive Multimodal Telepresence Systems. TUM, Munich, Germany March 29-20 2001*. Proceedings, pp.91-98.
- H'Doubler, M. (1940) *Dance: a Creative Art Experience*. New York: Appleton-Century-Crofts.
- Heathfield, A. (ed) (2000) *Small Acts: Performance, the Millennium and the Marking of Time*. London: Black Dog Publishing.
- Heidegger, M. (1962) *Being and Time* [trans. J. Macquarrie & E. Robinson] Oxford: Blackwell.
- (1977) *The Question Concerning Technology and other essays*. [trans. William Lovitt] New York & London: Garland Publishing Inc.
- Hewes, G. (1973) Primate Communication and the Gestural Origin of Language. *Current Anthropology*, Vol.14 (1-2), pp.5-24.
- Hodgson, J. (2001) *Mastering Movement: the life and work of Rudolf Laban*. London: Methuen Publishing Ltd.
- Hoffman, J. & J. Jonas (2005) *Perform*. London: Thames & Hudson.
- Husemann, P. (2004) Thoughts on Project by Xavier Le Roy or How language and

action inform each other or how discourse and choreography inform each other. *Dance Theatre Journal*, Vol.20 (1), pp.27-31.

Ihde, D. (1995) *Postphenomenology: Essays in the Postmodern context*. Evanston, Ill.: Northwestern University Press.

— (2002) *Bodies in Technology*. Minneapolis: University of Minnesota Press.

— (2003) *Postphenomenology –Again?* Working paper 3, 2003. Aarhus: The Centre for STS Studies.

Ingold, T. (2010) The textility of making. *Cambridge Journal of Economics*, Vol.34 (1), pp.91-102.

— (2010) *Bringing Things Back to Life: Creative Entanglements in a World of Materials*. NCRM Working Paper. Realities / Morgan Centre, University of Manchester. Available from <<http://www.socialsciences.manchester.ac.uk/realities/publications/workingpapers>> [accessed 20 July 2011].

Inside Movement Knowledge (2009) [website] Available from <<http://insidemovementknowledge.net/>> [accessed 20 July 2011].

Institut für Franklin-Methode (2008) [website] Available from <<http://www.franklin-methode.ch/>> [accessed 20 July 2011].

Iverson, J. & S. Goldin-Meadow (1998) Why People Gesture When they Speak. *Nature*, Vol.396 (6708), p.228.

Jenkins, R. (2002) *Pierre Bourdieu*. London: Routledge.

Johansson, G. (1973) Visual Perception of Biological Motion and a model for its Analysis. *Perception and Psychophysics*, Vol.14 (2), pp.201-211.

Johnson, D. H. (ed) (1995) *Bone, Breath and Gesture: Practices of Embodiment*. California: North Atlantic Books.

— (1997) *Groundworks: Narratives of Embodiment*. Berkeley, CA: North Atlantic Books.

— (2000) “Intricate tactile sensitivity: A Key Variable in Western Integrative Bodywork”. in: Saper, C. & E. Mayer (eds) (2000) *The Biological Basis for Mind Body Interactions*. Amsterdam: Elsevier. Available from <<http://www.donhanlonjohnson.com/articles/intricate.html>> [accessed 20 July 2011].

Johnson, M. (1987) *The Body in the Mind: The Bodily Basis of Meaning*,

*Imagination and Reason*. Chicago: University of Chicago Press.

— (1989) Embodied Knowledge. *Curriculum Inquiry*, Vol.19 (4), pp.361-377.

Jones, F. (1976) *Body Awareness in Action: a study of the Alexander Technique*. New York: Schocken Books.

Jones, W. (2009) *Jacket Lets You Feel the Movies*. Available from <<http://spectrum.ieee.org/biomedical/devices/jacket-lets-you-feel-the-movies>> [accessed 19 July 2011].

Juhan, D. (1987) *Job's Body: A Handbook for Bodywork*. New York: Station Hill.

Jütte, R. (2005) *A history of the Senses: from antiquity to cyberspace*. Oxford: Polity.

— (2008) "Haptic Perception: an historical approach". In: Grünwald, Martin (ed) (2008) *Human Haptic Perception: Basics and Applications*. Basel: Springer, pp.3-13.

KA5 (2010) *Prospectus for a Future Body*. Available from <<http://www.ka5.info/prospectus.html>> [accessed 25 July 2011].

Kam, V. (2005) *Merce Cunningham in conversation with John Rockwell*. Stanford Presidential Lectures in the Humanities and Arts. Available from <<http://prelectur.stanford.edu/lecturers/cunningham/>> [accessed 28 July 2011].

Kaye, N. (1994) *Postmodernism and Performance*. Basingstoke and London: Macmillan.

Kaylo, J. (2007) *The History of Movement Pattern Analysis*. Available from <<http://www.labancan.org/articles/MPA.pdf>> [accessed 20 July 2011].

Keleman, S. (1985) *Emotional Anatomy: the Structure of Experience*. Berkeley, CA: Center Press.

Kember, D. (2000) *Action Learning and Action Research: improving the quality of teaching and learning*. London: Kogan Page.

Kendon, A. (2004) *Gesture: Visible Action as Utterance*. Cambridge: Cambridge University Press.

Kerr, C., J. Shaw, R. Wasserman, V. Chen, A. Kanjia, T. Bayer, J. Kelley (2008) Tactile acuity in experienced Tai Chi practitioners: evidence for use dependent plasticity as an effect of sensory-attentional training. *Exp Brain Res*, Vol.188 (2), pp.317-22.

- King, K. (2003) *Writing in Motion: body—language—technology*. Middletown Conn: Wesleyan University Press.
- Kristeva, J. (1982) *Desire in Language: a semiotic approach to literature and art*. Oxford: Basil Blackwell.
- Kolb, D. A. (1984) *Experiential Learning. Experience as the source of learning and development*. NJ: Prentice-Hall.
- kondition pluriel (n.d.) [website] Available from <<http://www.konditionpluriel.org/>> [accessed 21 July 2011].
- Kostelanetz, R. (2003) *Conversing with Cage*. New York: Routledge.
- Kovich, Z. (2007) Promoting dexterity in technical dance training using the Feldenkrais Method. *IFF Academy Feldenkrais Research Journal*, Vol.3. Available from <<http://iffresearchjournal.org/volume/3>> [accessed 19 March 2012].
- Kozel, S. (2008) *Closer: Performance, Technologies, Phenomenology*. Cambridge, MA: MIT Press.
- Laban, R. (1988) *The Mastery of Movement*. [5th edition] Plymouth: Northcote House.
- Laban, R. & F.C. Lawrence (1974) *Effort*. Braintree, MA: Macdonald & Evans.
- Lacan, J. (1980) *Écrits: a selection* [trans: Alan Sheridan] London: Routledge.
- Lakoff, G. & M. Johnson (1999) *Philosophy in the Flesh: Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.
- (2003) *Metaphors We Live By*. Chicago: Chicago University Press.
- Langevin, H. (2006) Connective Tissue: A body-wide signalling network? *Medical Hypotheses*, Vol.66, (6), pp.1074-1077.
- Latour, B. (1994) On Technical Mediation—Philosophy, Sociology, Genealogy. *Common Knowledge*, Vol.3 (2), pp.29-64.
- (2007) *Reassembling the Social: an Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.
- Lecoq, J. (2001) *The Moving Body (Le Corps Poétique)* [trans: D. Bradby] New York: Routledge.
- Leder, D. (1990a) Flesh and blood: A proposed supplement to Merleau-Ponty.

*Human Studies*, Vol.13 (3), pp. 209-219.

— (1990b) *The Absent Body*. Chicago: University of Chicago Press.

Legrand, D. & S. Ravn (2009) Perceiving subjectivity in bodily movement: The case of dancers. *Phenom Cogn Sci*, Vol.8 (3), pp.389-408.

Lepecki, A. (1999) Skin, Body, and presence in Contemporary European Choreography. *The Drama Review*, Vol.43 (4), pp.129-140.

— (2000) “Still: On the Vibratile Microscopy of Dance”. In: Brandstetter, G & H. Völckers (eds) (2000) *ReMembering the Body*. Ostfildern: Hatje Cantz Verlag, pp.332-366.

— (ed) (2004) *Of the Presence of the Body: Essays on Dance and Performance Theory*. Middletown: Wesleyan University Press.

— (2006) *Exhausting Dance: Performance and the Politics of Movement*. London and New York: Routledge.

— (2010) The Body as Archive: Will to Re-Enact and the Afterlives of Dances. *Dance Research Journal*, Vol.42 (2), pp.28-48.

Levin, S. (2002) The Tensegrity-Truss as a Model for Spine Mechanics: Biotensegrity. *Journal of Mechanics in Medicine and Biology*, Vol.2 (3 and 4), pp.375-388.

Manning, E. (2008) *Creative Propositions for Thought in Motion. Inflexions*, Vol.1. Available from <[http://www.inflexions.org/volume\\_4/n1\\_manninghtml.html](http://www.inflexions.org/volume_4/n1_manninghtml.html)> [accessed 20July 2011].

Maravita, A. & A. Iriki (2004) Tools for the Body (Schema). *Trends in Cognitive Sciences*, Vol.8 (2), pp.79-86.

Marks, L. (2002) *Touch: Sensuous Theory and Multisensory Media*. Minneapolis, MN: University of Minnesota Press.

Marshall, L. (2002) *The Body Speaks: performance and expression*. New York: Palgrave Macmillan.

Massumi, B. (2002) *Parables for the Virtual: movement, affect, sensation*. Durham & London: Duke University Press.

Maturana, H. & F. Varela (1980) *Autopoiesis and Cognition: the Realization of the Living*. Dordrecht: D.Reidel Publishing Co.



- Mauss, M. (1973) *The Techniques of the Body*. [trans. B. Brewster] *Economy and Society*, Vol 2 (1), pp.70-87.
- McGavin, H. (2004) Play revisits tragedy of 58 immigrants who suffocated in lorry. *The Independent*, Monday 27th September 2004.
- McKechnie, S. & C. Stevens (2009) "Knowledge Unspoken: Contemporary Dance and the Cycle of Practice-led Research, Basic and Applied Research, and Research-led Practice". in: Smith, H. & R. Dean (eds) (2009) *Practice-led Research, Research-led Practice in the Creative Arts*. Edinburgh: Edinburgh University Press, pp.84-103.
- McLuhan, M. (2001) *Understanding Media*. Abingdon: Routledge Classics.
- McNeill, D. (1992) *Hand and mind: What gestures reveal about thought*. Chicago: University of Chicago Press.
- (ed) (2000) *Language and Gesture*. Cambridge: Cambridge University Press.
- (2005) *Gesture and Thought*. Chicago: University of Chicago Press.
- McNeill, D. and S. Duncan (2000) "Growth Points in Thinking for Speaking". in: McNeill, D. (ed.) (2000) *Language and Gesture*. Cambridge: Cambridge University Press, pp.141-161.
- Merleau-Ponty, M. (1968) *The Visible and the Invisible*. [trans: Alphonso Lingis] Evanston, Ill: Northwestern University Press.
- (2002) *Phenomenology of Perception*. [trans: C. Smith] London: Routledge Classics.
- Mertz, A. (ed) (2002) *The Body Can Speak: essays on creative movement education with emphasis on dance and drama*. Carbondale: Southern Illinois University Press.
- Mitchell, N. (2005) (Interviewer and presenter) *The Dancing Mind*. *All in the Mind, ABC Radio*, 19 March 2005. Available from <<http://www.abc.net.au/radionational/programs/allinthemind/the-dancing-mind/3442236>> [accessed 19 March 2012].
- Mirzoeff, N. (1995) *Bodyscape: art, modernity and the ideal figure*. London: Routledge.
- Mitter, S. (1992) *Systems of Rehearsal: Stanislavsky, Brecht, Grotowski and Brook*. London & New York: Routledge.
- Montano, L. (2000) *Performance Artists Talking in the Eighties*. Berkeley:

University of California Press.

Mori, M. (1970) The Uncanny Valley. [trans: K. MacDorman and T. Minato] *Energy*, Vol.7 (4), pp.33-35.

Morgenroth, J. (2004) *Speaking of Dance: twelve contemporary choreographers on their craft*. London & New York: Routledge.

Morris, D. (1978) *Manwatching: a Field-guide to Human Behaviour*. London: Grafton Books.

Morris, G. (ed) (1996) *Moving Words: Re-Writing Dance*. London: Routledge.

Murphy, S. (2008). *Practices of tactility, remembering and performance*. [Ph.D. thesis]. The University of Melbourne Research Collections. Available from <<http://repository.unimelb.edu.au/10187/4379>> [accessed 14 March 2012].

Myers, T. (2009) *Anatomy Trains: Myofascial Meridians for Manual and Movement Therapists*. London: Elsevier.

Nagel, T. (1979) "What is it like to be a bat?" In: Nagel, T. (ed) *Mortal Questions*. New York: Cambridge University Press, pp.165-180.

Noë, A. (2004) *Action in perception*. Cambridge, MA: MIT Press.

— (2009) *Out of Our Heads: Why You Are Not Your Brain, and Other Lessons from the Biology of Consciousness*. New York: Hill and Wang.

Nordin, S. and J. Cumming (2005) Professional Dancers Describe Their Imagery: Where, When, What, Why, and How. *The Sport Psychologist*, Vol.19, pp.395-416.

Núñez, R. & W.J. Freeman (eds) (1999) *Reclaiming Cognition: The Primacy of Action, Intention and Emotion*. Thorverton: Imprint Academic.

Oerton, S. (2004) Touch Talk: the problems and paradoxes of embodied research. *Social Research Methodology*, Vol.7 (4), pp.305-322.

Olsen, A. & C. McHose (1991) *BodyStories: A Guide to Experiential Anatomy*. New York: Station Hill Press.

Ondaatje, M. (1989) *The Cinnamon Peeler: Selected Poems*. London: Picador.

O'Shaughnessy, B. "Proprioception and the Body Image" In: Bermudez, J; A. Marcel, N. Eilm (eds) (1995) *The Body and the Self*. Cambridge MA: MIT Press, pp.175-203.

- Paine, G. (2009) *Activated Space* [website] Available from <<http://www.activatedspace.com/>> [accessed 20 July 2011].
- Parker, A. & E. Sedgwick (eds) (1995) *Performativity and Performance*. London: Routledge.
- Parviainen, J. (1998) *Bodies Moving and Moved: a Phenomenological Analysis of the Dancing Subject and the Cognitive and Ethical Values of Dance Art* [Ph.D. Thesis]. Tampere: Tampere University Press.
- (2002) Bodily Knowledge: Epistemological Reflections on Dance. *Dance Research Journal*, Vol.34 (1), pp.11-26.
- Paterson, M. (2006) Seeing with the Hands, Touching with the Eyes: Vision, Touch and the Enlightenment Spatial Imaginary. *Senses & Society*, Vol.1 (2), pp.225-242.
- (2007) *The Sense of Touch: Haptics, Affects and Technologies*. Oxford & New York: Berg Publishers.
- (2009) Haptic geographies: ethnography, haptic knowledges and sensuous dispositions. *Progress in Human Geography*, Vol.33 (6), pp.766-788.
- Paxton, S. (2009) Steve Paxton's talk at CI36. *Contact Quarterly*, Vol. 34 (1) Winter/Spring 2009. Available from <<http://www.contactquarterly.com/cq/webtext/Paxtontalk.html>> [accessed 19 March 2012].
- Peeters, J. (2006) Dialogues on Blindness iv. Bock & Vincenzi. *Dance Theatre Journal*, Vol.22 (1), pp.16-20.
- Pentland, A. (2008) *Honest Signals*. Cambridge MA: MIT Press.
- Petitmengin, C. (2006) Describing one's subjective experience in the second person: An interview method for the science of consciousness. *Phenom Cogn Sci*, Vol.5 (3-4), pp.229-269.
- Petitmengin, C., M. Bitbol (2009) The Validity of First Person Descriptions as Authenticity and Coherence. *Journal of Consciousness Studies*, Vol.16 (10-12), pp. 363-404.
- Petitot, J. et al. (eds) (1999) *Naturalizing phenomenology: issues in contemporary phenomenology and cognitive sciences*. Stanford, CA Stanford University Press.
- Phelan, P. (1993) *Unmarked: Politics of Performance*. London: Routledge.
- Polanyi, M. (1983) *The Tacit Dimension*. Gloucester, MA: Peter Smith.

- Preston-Dunlop, V. & A. Sanchez-Colberg (2002) *Dance and the Performative: A Choreological Perspective - Laban and Beyond*. London: Verve Publishing.
- Psychoplastics (2010) *The Psychoplastics Project*. [website] Available from <<http://psychoplastics.wordpress.com/>> [accessed 25 July 2011].
- Pullman, P. (1998) *The Subtle Knife*. London: Scholastics.
- Rainer, Y. (1974) *Yvonne Rainer: Work 1961-73*. Halifax, Canada: The Press of the Nova Scotia College of Art and Design.
- (1999) *A Woman Who ...* Baltimore: John Hopkins University Press.
- Reason, P. & H. Bradbury (eds) (2001) *Handbok of action research: participative inquiry and practice*. London: Sage.
- Reese, M. (n.d.) *Moshe Feldenkrais's Work with Movement – a Parallel Approach to Milton Erikson's Hypnotherapy*. Available from <<http://www.feldenkraislearning.com/html/articles.html>> [accessed 25 August 2011]
- Reich, W. (1972) *Character Analysis*. New York: Farrar, Strauss & Giroux.
- Rodaway, P. (1994) *Sensuous Geographies: body, sense and place*. London: Routledge.
- Rolf, I. (1989) *Rolfing: Reestablishing the Natural Alignment and Structural Integration of the Human Body for Vitality and Well-Being*. Vermont: Healing Arts Press.
- Ross, J. (2007) *Anna Halprin: Experience as Dance*. Berkeley and London: University of California Press.
- Rothfield, P. (2005) Differentiating Phenomenology and Dance. *Topoi*, Vol.24 (1), pp.43-53.
- Rothschild, B. (2000) *The Body Remembers: the Psychophysiology of Trauma and Trauma Treatment*. London: WW Norton & Company.
- Rowlands, M. (2007) Understanding the 'active' in 'enactive'. *Phenom Cogn Sci*, Vol.6 (4), pp.427-443.
- Ruckert, F. (2005) *On Dance and BDSM - an interview with Felix Ruckert*. Available from <[http://www.felixruckert.de/\\_OnDance.html](http://www.felixruckert.de/_OnDance.html)> [accessed 14 March 2012].
- Schaker, W. (2004) Finding Our Own Language: Scientists meet Feldenkrais

teachers, Thinking about a necessary dialogue. *IFF Academy Feldenkrais Research Journal*, Vol.1. Available from <<http://iffresearchjournal.org/volume/1>> [accessed 19 March 2012]

Schechner, R. (2003) *Performance Theory*. London: Routledge.

Scheer, E. (2009) "I Artaud BwO: The Uses of Artaud's *To have done with the judgement of god*". In: Cull, L. (ed) (2009) *Deleuze and Performance*. Edinburgh: Edinburgh University Press, pp.37-53.

Schiphorst, T. (1997) Body Noise, Subtexts of Computers and Dance. *Computer Graphics*, Vol.31 (1), pp.14-15.

Schmidt, R., C. Wrisberg (2008) *Motor learning and performance: a situation-based learning approach*. Champaign, IL: Human Kinetics.

Schön, D. (1983) *The Reflective Practitioner. How professionals think in action*. Aldershot: Ashgate.

Schoop, T.& P. Mitchell (1974) *Won't You Join the Dance?: a Dancer's Essay into the Treatment of Psychosis*. Palo Alto, CA: Mayfield Publishing.

Schreibman, S. and R. Siemens (eds) (2008) *A Companion to Digital Literary Studies*. Oxford: Blackwell.

Schrope, M. (2001) *Simply sensational*. New Scientist. June 2001. pp.30-33.

Schwitzgebel, E. (2007) Do You Have Constant Tactile Experience of Your Feet in Your Shoes? Or is Experience Limited to What's in Attention? *Journal of Consciousness Studies*, Vol.14 (3), pp.5-35.

Scrivener, S. (2000) *Reflection in and on action and practice in creative-production doctoral projects in art and design*. Working Papers in Art and Design 1. Available from <[http://sitem.herts.ac.uk/artdes\\_research/papers/wpades/vol1/scrivener2.html](http://sitem.herts.ac.uk/artdes_research/papers/wpades/vol1/scrivener2.html)> [accessed 20 July 2011].

Selinger, E. (ed) (2006) *Postphenomenology: a critical companion to Ihde*. Albany: State of New York Press.

Sennett, R. (2008) *The Craftsman*. New Haven: Yale University Press.

Sheets-Johnstone, M. (1966) *Phenomenology of Dance*. Madison: University of Wisconsin Press.

— (ed) (1992) *Giving The Body its Due*. New York: SUNY Press.

- (1999) *The Primacy of Movement*. Amsterdam: John Benjamins.
- (2009) *The Corporeal Turn: An Interdisciplinary Reader*. Exeter and Charlottesville, VA: Imprint Academic.
- Sherrington, C.S. (1906) *The Integrative Action of the Nervous System*. New Haven: Yale University Press.
- (1907) On the Proprio-ceptive system, especially in its Reflex aspect. *Brain*, Vol.29 (4), pp.467-85.
- Sheldon, W.H. & S. Stevens (1942) *The Varieties of Human Temperament: a psychology of constitutional differences*. New York: Harper.
- Shusterman, R. (1999) Somaesthetics: A Disciplinary Proposal. *Journal of Aesthetics and Art Criticism*, Vol.57 (3), pp.299-313.
- (2000) *Performing Live: Aesthetic Alternatives for the Ends of Art*. Ithaca, NY: Cornell University Press.
- (2008) *Body Consciousness: A Philosophy of Mindfulness and Somaesthetics*. New York: Cambridge University Press.
- (1997) *Practicing Philosophy*. New York and London: Routledge.
- Singleton, J, S. Goldin-Meadow, D. McNeill (1995) “The Cataclysmic Break Between Gesticulation and Sign: Evidence Against a Unified Continuum of Gestural Communication”. In: Emmorey, K. & J. Reilly (eds) (1995) *Language, Gesture, and Space*. Hillsdale, NJ: Lawrence Erlbaum Associates, pp.287-311.
- Siobhan Davies RePlay (2009) *The Art of Touch*. Available from <<http://www.siobhandaviesreplay.com/record.php?id=28>> [accessed 19 July 2011].
- Sklar, D. (2001) Towards Cross-Cultural Conversation on Bodily Knowledge. *Dance Research Journal*, Vol.33 (1), pp.91-92.
- Skotnes, P. (ed) (1996) *Miscast: Negotiating the Presence of the Bushmen*. Cape Town: University of Cape Town Press.
- Smith, H. & R. Dean (eds) (2009) *Practice-led Research, Research-led Practice in the Creative Arts*. Edinburgh: Edinburgh University Press.
- Spirkovska, L. (2004) *Summary of Tactile User Interfaces Techniques and Systems*. NASA Ames Research Center, 22 September 2004.
- Steinman, L. (1995) *The Knowing Body*. USA: North Atlantic Books.

Stelarc (2012) *Stelarc*. [website] Available from <<http://www.stelarc.org/>> [accessed 14 March 2012].

Stenslie, S. (2011) *Stahl Stenslie*. [website] Available from <<http://www.stenslie.net/>> [accessed 25 July 2011].

Stevens, J. (2006) *Re-thinking Dance Technique in Higher Education*. The Higher Education Academy Palatine seminar report. Available from <<http://www.palatine.ac.uk/events/viewreport/309/>> [accessed 20 July 2011].

Stevens, K., S. McKechnie, S. Malloch, A. Petocz (2000) “Choreographic Cognition: Composing Time and Space”. In: Woods, C., G. Luck, R. Brochard, F. Seddon, J. Slobod, S. O’Neill (eds) (2000) *Proceedings of the 6th International Conference on Music Perception & Cognition*. Keele University, August 2000.

Strauch, R. (2007) Epistemology and the Feldenkrais Method. *IFF Academy Feldenkrais Research Journal*, Vol.3. Available from <<http://iffresearchjournal.org/volume/3>> [accessed 19 March 2012].

Sutton, J. (2005) Memory and the extended mind: embodiment, cognition, and culture. *Cogn Process*, Vol.6 (4), pp.223-226.

Sweigard, L. (1974) *Human Movement Potential: Its Ideokinetic Facilitation*. New York: Harper and Row.

Teicher, H. (2002) *Trisha Brown: Dance and Art in Dialogue 1961-2001*. Cambridge, MA: MIT Press.

The Feldenkrais Guild UK. (n.d.) [website] Available from <<http://www.feldenkrais.co.uk/>> [accessed 20 July 2011].

The Free Dictionary (n.d.) [website] Available from <<http://www.thefreedictionary.com/>> [accessed 08 August 2011]

Thelen, E. & L. Smith (1994) *A Dynamic Systems approach to the development of cognition and action*. Cambridge, MA: MIT Press.

Thomas, H. (ed) (1993) *Dance, Gender and Culture*. London: Palgrave Macmillan.

— (2003) *The Body, Dance and Cultural Theory*. London: Palgrave Macmillan.

Thompson, E. (2009) Bodyreading: Seeing is Touch at a Distance. *AMTA MA Newsletter*, Vol 27 (1), p.10.

Thompson, E. (2005) Sensorimotor subjectivity and the enactive approach to

experience. *Phenom Cogn Sci*, Vol.4 (4), pp.407-427.

— (2007a) *Mind in Life, Biology, phenomenology and the sciences of Mind*. Cambridge, MA: Harvard University Press.

— (2007b) Look Again: Phenomenology and mental imagery. *Phenom Cogn Sci*, Vol.6 (1-2), pp.137-70.

Todd, M.E. (1972) *The Thinking Body: A Study of the Balancing Forces of Dynamic Man*. New York: Dance Horizons.

Touchdown Dance. (2003) [website]. Available from <<http://www.touchdowndance.co.uk>> [accessed 20 July 2011].

Touch Research Institute (n.d.) [website] Available from <<http://www6.miami.edu/touch-research/Research.html>> [accessed 24 August 2011]

Tufnell, M. & C. Crickmay (2003) *Body, Space, Image: notes towards improvisation and performance*. London: Dance Books.

Tufnell, M. (n.d.) *Body and imagination with Miranda Tufnell*. [website]. Available from <<http://www.mirandatufnell.co.uk/>> [accessed 16 August 2011].

Turner, B. (1996) *Body and Society: Explorations in Social Theory*. London: Sage Publications.

Van der Kolk, B. (1994) The Body Keeps The Score: Memory & the Evolving Psychobiology of Post Traumatic Stress. *Harvard Review of Psychiatry*, Vol.1 (5), pp.253-265.

Varela, F., E. Thompson, E. Rosch (1993) *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge, MA: MIT Press.

Varela, F.J. & J. Shear (1999) *The View From Within: First Person approaches to the study of consciousness*. Thorveton, Essex: Imprint Academic.

Vaucelle, C. & Y. Abbas (2007) Touch Sensitive Apparel. CHI 2007, April 28 – May 3, 2007, San Jose, California, USA.

Vergine, L. (2000) *Body Art and performance: The Body as Language*. Milan: Skira editore.

Walker Art Center (1998) *Art Performs Life: Merce Cunningham, Meredith Monk, Bill T. Jones*. Minneapolis: Walker Art Center.



Warren, D. (2009) *Mercury*. [film] Available from <<http://scottishballet.co.uk/whats-on/current-productions/40th-anniversary-exhibition/mercury.htm>> [accessed 23 July 2011].

Wechsler, R. (1998) Computers and Dance: Back to the Future. *Dance Research Journal*, Vol.30 (1), pp.4-10.

Wenger, W. (1976) Stanislavski and Yoga. *Educational Theatre Journal*, Vol.28 (1), pp.85-89.

Weiss, G. (1999) *Body images: Embodiment as Intercorporeality*. London: Routledge.

Whitehouse, M., J. Adler, J. Chodrow, P. Pallaro (1999) *Authentic Movement: Essays by Mary Starks Whitehouse, Janet Adler, Joan Chodorow, Patrizia Pallaro*. UK: Jessica Kingsley Publishers.

Wilson, M. (2002) 6 views of Embodied Cognition. *Psychonomic Bulletin & Review*, Vol.9 (4), pp.625-636.

Winograd, T. "From computing machinery to interaction design". In: Denning, P & R. Metcalfe (eds.) (1997) *Beyond Calculation: The Next Years of Computing*. New York: Copernicus, pp.149-162.

Wood, C. (2007) *Yvonne Rainer: The Mind is a Muscle*. Cambridge, MA: MIT Press (Afterall Books).

Worth, L. & H. Poyner (2004) *Anna Halprin*. Abingdon: Routledge.

Wundt, W. (1974) *The Language of Gestures*. [ed: A. Blumenthal] Berlin: De Gruyter.

Zahn, R. (2005) Francisco Varela and The Gesture of Awareness: a new direction in cognitive science and its relevance to the Alexander Technique. *7th International Congress of the F. M. Alexander Technique 16-22 August 2004, Oxford University, UK*. Available from <<http://www.alexanderscience.org/papers/>> [accessed 20 July 2011].

— (2008) Embodied, Disembodied and Re-embodied Cognition: the Potentials and Obstacles for Elegant Human-Computer Interfaces. *5th International Conference on Enactive Interfaces Pisa, Italy, 19-21 November 2008*. Available from <<http://www.alexanderscience.org/papers/>> [accessed 20 July 2011].

Zarrili, P. (2004) *Toward a Phenomenological Model of the Actor's Embodied Modes of Experience*. *Theatre Journal*, Vol.56 (4), pp.653-666.

— (2007a) “Senses and Silence in Actor Training and Performance”. In: Banes, S. and A. Lepecki (eds) (2007) *The Senses in Performance*. London: Routledge, pp.47-70.

— (2007b) *The Presence Project interviews Phillip Zarrilli: an interview recorded by Gabriella Giannachi and Nick Kaye*. The Presence Project [website]. Available from <<http://presence.stanford.edu:3455/collaboratory/1143>> [accessed 21 September 2011].

Zeigler, C. (2007) *Electronic Memory Design: from archiving to rehearsal software. (Capturing Intention): Documentation, analysis and notation based on the work of Emio Greco | PC*. Amsterdam: Hogeschool voor de Kunsten.

Zola, E. (2005) *Germinal*. Montana: Kessinger Publishing.

Zuber-Skerritt, O. (ed.) (1996) *New Directions in Action Research*. Abingdon: Routledge Falmer.

## Appendix 1 Consent form templates and information for participants.

EDINBURGH COLLEGE OF ART  
'DANCING WITH A PHILOSOPHER' RESEARCH PROJECT

Dear

Thank you for participating in my recent choreographic residency at Dance Base.

As I discussed with you at the start of the residency, the themes we engaged through various dance and somatic processes of the are of relevance to my current practice-based PhD research, which I am undertaking at Edinburgh College of Art. The research concerns themes of embodiment, through engagement with dance, philosophy and technological mediation. My supervisors are Dr. Sophia Lycouris: head of Graduate Research School at eca; Professor Andy Clark- School of Philosophy, Psychology and Language Sciences at University of Edinburgh; and Dr. Mark Wright: Research Fellow in Art and Informatics, Edinburgh University.

The aims of the residency at Dance Base were to inquire into the 'interface' between dancers, dance, music and memory through touch, voice, vision and hearing. The various choreographic studies and explorations were at times recorded to video, some discussions were audio recorded, and all dancers were requested to keep notebooks in which they would report thoughts, images, impressions etc. I also kept a notebook throughout the residency.

At the outset I discussed with you that any documentation from this residency may be useful for my future research or for reference. It was also discussed that due to the personal nature of some of the exercises you may prefer for some notes to remain confidential and that each participant had the right to request withdrawal of some or all material.

I am now contacting you to request your formal consent for any of the documentation: notebooks, video, photos, and recorded discussions- to be used and to establish agreement as to how these outputs may be used.

Due to the creative and performative nature of the process and the public showing at the culmination of the residency I request your consent that I refer to you and your contributions by name. However please state if you prefer not to be named and I will discuss ways to anonymise any mention of you.

At this stage of my research it is not clear to what extent and in what form this residency will contribute to the final PhD thesis. However, if you do consent to material that refers to you being used I will contact you again and you will be given the opportunity to view the documentation and give final approval before it is published.

If you have any questions please contact me, Sue Hawksley, at the address/telephone number below:

Sue Hawksley  
GRS. Edinburgh College of Art, Lauriston Place, Edinburgh EH3 9DF  
07958 043 982

SUE HAWKSLEY: EDINBURGH COLLEGE OF ART  
'DANCING WITH A PHILOSOPHER' RESEARCH PROJECT  
Dance Base Choreographic Residency 9-20<sup>th</sup> February 2009

CONSENT FORM

I voluntarily agreed to take part in this study and to having conversations audio recorded, rehearsals video recorded, for notes to be taken and to document personal reported in notebook format.

I do/do\* not consent to this documentation and description of this choreographic lab being published for the purpose of final PhD thesis or related outputs.

I do/do\* not consent to my being named in the final PhD thesis or related published outputs.

I understand that I will be given the opportunity to view material that refers to me prior to publication and, should I wish, to request that any documentation referring to me will be anonymised or removed.

(\* Please delete as applicable)

↑

Participant's name:.....(Please print)

Participant's signature:.....

Date.....

Participant's postal address, email address or telephone number

---

---

---

---

Please return to Sue Hawksley  
GRS. Edinburgh College of Art, Lauriston Place, Edinburgh EH3 9DF  
tel: 07958 043 982

**SUE HAWKSLEY: PhD candidate, Edinburgh College of Art**

**haptic\_dance: information for participants**

**haptic\_dance** is a performance work-in-progress which will contribute to the practice-led PhD research I am undertaking at Edinburgh College of Art, supported by the Edinburgh Studentship. This research addresses the concept of 'embodiment' (which may be considered as the lived, phenomenal bodily experience, approached from a non-dualist perspective) through dance, somatic practices, philosophy and technological mediation.

My supervisors are Dr. Sophia Lycouris at Edinburgh College of Art, Professor Andy Clark and Dr. Mark Wright at University of Edinburgh.

The **haptic\_dance** is received through touch. The aim of the work is to make 'tangible' some 'impression' of the dance. As participants in the research at this stage, your feedback will contribute to the development of a potential 'vocabulary' to do this. You will receive this in a one-to-one session from me, which will last approximately 4 minutes. You may choose to be seated or standing to receive this. You may choose to close your eyes or keep them open, and can change this during the performance. The session is not private and may be viewed by other people.

Following the **haptic\_dance**, you will be invited to make any 'expression' of your own. This may be through writing, drawing, speaking, dancing. You do not have to do this if you prefer not to. If you do, but then prefer your material to be deleted, you may request this. There will also be an opportunity to view the original danced version, either performed live by me, or recorded on video.

With your consent, aspects of this 'expression' feedback may be used in my final PhD thesis and may also be incorporated into future articles or publications. All comments will be kept anonymous.

With your permission I will also keep a record of your name and contact details in order to contact you and give you an opportunity to view any use made of your feedback prior to publication. You may request that any material relating to you be removed if you do not wish it to be used. You will be given a copy of the consent form.

I am highly experienced as a dance-artist and teacher, and a fully qualified massage and bodywork therapist. I have aimed to craft this work in such a way that the focus of the touch is choreographic, not therapeutic. I have worked with many dancers and somatic practitioners during the development process and consider that the touch used is safe, respectful, non-threatening and non-ambiguous. There is no deep-tissue work. You will not be asked to undress!

**However, this is a dance performance and not a therapeutic massage session.**

The exchange is between performer and audience, not between therapist and client. I will not conduct a health consultation beforehand. If you feel that any physical or psychological reason would contraindicate the work, I recommend you do not take part. If you do choose to take part but become uncomfortable during the session and would prefer not to continue, you can ask to stop at any point.

**Haptic\_dance: consent form**

**I consent** to receive the haptic\_dance. Yes / No

**I understand** that this performance work is part of a practice-led PhD, and that the focus of the touch is choreographic and not therapeutic. I therefore take responsibility not to take part if I am aware of any health reason that would contraindicate the work. Yes / No

**I understand** that the performer considers that the touch used is safe, respectful, non-threatening and non-ambiguous. However, I understand that I may request to stop the work at any point if I feel uncomfortable and do not have to give a reason Yes / No

**I consent** to all or part of my 'expressive' feedback being incorporated in the PhD thesis or incorporated into related articles or publications and **I understand** that this will be kept anonymous Yes / No

**I understand** that I will be given the opportunity to view any material related to me prior to publication and that I may withdraw my consent to its use at any stage without need to give a reason Yes / No

**Participants name:**

**Signature:**

**date:**

**Contact** (address or email) This will only to be used to contact you if you wish me to, so that you can review any material relating to your input in this project prior to publication. If you do not give contact details it will be assumed that you consent to materials being used.

**Thankyou for your time!**

If you have any questions please contact me at this address/telephone number:

**Sue Hawksley,**

Graduate Research School,

Edinburgh College of Art, Lauriston Place, Edinburgh EH3 9DF

m: 07958 043 982

e: sue@articulateanimal.org.uk