

**Interim Report: Off the Beaten Path (Meetings 1-3)**  
**Dance Engaging Science (DeS) Interdisciplinary Research Workshops**  
**Reference Nr. I/84 930**  
**Date: 25 November 2012**  
**Author: Scott deLahunta (Project Coordinator)**

**SUMMARY:**

The Dance Engaging Science Interdisciplinary Research Workshops is a unique initiative bringing together dancers, scientists and scholars with the aim to survey the current state of the field of dance-science research internationally and lay foundations for future collaborative research in which dance practice plays a greater constitutive role. A working group of senior researchers from different disciplines with experience in dance-science research were invited to a series of three meetings in Frankfurt am Main over the last 18 months. At the first meeting in May 2011 the scientists and scholars in the group presented their existing research into and about dance. The second meeting in February 2012 focused on how research questions coming from dance practice challenge existing methods of science and can inspire new investigatory approaches at the intersection of art and science. By the end of the second meeting, several new research initiatives reflecting these questions from practice had emerged from within the group and work had begun on a collective *Statement of Principles* highlighting the values and requirements for innovative collaborative dance-science research. The third and final group meeting took place in Frankfurt am Main on 28-30 September 2012. At this meeting the group continued to develop the co-authored statement – to be published in spring 2013 – and clarified the new research initiatives, the first of which will get underway already in October. (German Version On-Line: <http://tinyurl.com/cx8rtmr>)

**FULL REPORT:**

In March 2010 the Dance Engaging Science Interdisciplinary (DeS) Research Workshops received confirmation of financial support from the Volkswagen Foundation of €88,400 for the financial period from 24 March 2010 to 31 December 2013. A workgroup of ten senior researchers constitute the Project's principle investigators. Each has done significant research into dance from their specialist disciplines (Names & Affiliations below). The Project Coordinator is Scott deLahunta, and the Research Advisor is Dr. Wolf Singer. Project cooperation partners are: The Berlin School of Mind and Brain – Humboldt University Berlin and the Max Planck Institute for Brain Research Frankfurt. The research context for DeS is Motion Bank, a four-year project (2010-2013) of The Forsythe Company providing a broad context for research into choreographic practice. The main focus is on the creation of on-line digital scores in collaboration with guest choreographers to be made publicly available via the Motion Bank website. Support for Motion Bank comes from the German Federal Cultural Foundation, the Hessische Ministerium für Wissenschaft und Kunst, the kulturfonds frankfurtrheinmain and Ms. Susanne Klatten.

Motion Bank Website: <http://motionbank.org/>

DeS Pages: <http://motionbank.org/en/research-2/>

*Throughout the rest of this report, only the names of the individuals involved will be used; along with an indication if they were members of the Core Workgroup, Associate Researchers or Guests. Their affiliation or field of expertise will not be mentioned to reduce the amount of text. However, to understand fully the implications of the project for how it brought experts from the different fields*

*together it is important to refer when necessary to the Names & Affiliations list at the end of the report.*

#### **MEETING ONE:**

For the first meeting 20-22 May 2011, the following Core Workgroup were present: Michael Steinbusch, Kate Stevens, Patrick Haggard, David Kirsh, Emily Cross, Alva Noe, James Leach, Bettina Blaesing. Maaïke Bleeker, Dana Caspersen and Scott deLahunta were not able to attend. The group expanded to include Associate Researchers and Guests: Guido Orgs, Freya Vass-Rhee, Elizabeth Waterhouse, Riley Watts, Kurt Koegel and Anke Euler. Research Advisor Wolf Singer was present. Martin Streit provided video documentation. The meeting was held in the rehearsal spaces of The Forsythe Company and this proximity to high-level professional dance practice was important.

*Hospitality was also important. Sandwiches and fruit were brought into the spaces to facilitate 'working' lunches. Dinners were organised in local restaurants so all participants would eat together. This was done the same for all three meetings.*

Prior to the first meeting a Reader consisting of 25 articles was compiled for the Workgroup (see **Appendix 1**). The material covered the most important scientific and scholarly topics already articulated for the project including choreographic (study) objects, social modes of creativity, bodily attention and awareness, memory and learning, choreographic cognition and perception of the audience as well as essays by performers with The Forsythe Company.

In addition, Dana Caspersen edited a document entitled "Questions From Practice" from interviews with eleven of The Forsythe Company (TFC) performers (available on request). The purpose was to present the DeS Workgroup with questions the TFC performers, acknowledged experts in their field, have about their experience making and performing dances. The goal was to stimulate discussion about how such questions are comprehended by those who are not experts in dance, but are specialists in other research domains with a vested research interest in dance. And to consider the potential of converted these questions into interesting collaborative research proposals.

The meeting began Friday afternoon with presentations from Leach, Cross, Haggard, Orgs, Steinbusch and Stevens about their dance-related research. The day closed with Vass-Rhee presenting how The Forsythe Company works and why the choreographer William Forsythe is approaching scientists. Saturday the individual presentations wrapped up with Kirsch, Blaesing, Noe and Singer. Before lunch Stevens presenting a useful **summary** of the presentations (this summary would come back during Meeting Two. Following lunch Vass-Rhee opened the discussion about the "Questions From Practice" document. This stimulated a dialogue between the group and Waterhouse, Vass-Rhee and Watts about how they work in creation and performance and included a demonstration by Watts. The day closed with a discussion about possible tractable research questions.

Sunday morning a selection of existing 'study objects' for dance was discussed as possible research resources. These included the multi-media CD-Rom Improvisation Technologies by William Forsythe and the new on-line digital dance scores being produced by Motion Bank. The discussion revealed that generally scientists felt these resources were only useful in special cases. Tools and methods for documenting dance practice were included in the discussion. Before lunch the group made the decision to work with cards taped on the wall as a way of further developing the research questions discussed Saturday. By the end of the session Sunday afternoon the group had succeeded in

articulating five research topics with clusters under the headings: Attention, Tasks, Acoustics/ Musicality, Expertise, Memory & Learning. Each person in the group signed up for the clusters they were interested in pursuing.



Workgroup beginning to assemble the wall/ card installation. Photo: Martin Streit.

The May meeting was video documented using the Video Annotation Software being developed by Motion Bank, and photographs were taken of the wall with the card clusters. This and additional photographic documentation was all made available to the group soon after the meeting.

## **MEETING TWO:**

Shortly after the first meeting, deLahunta and Singer met to review the results. It was determined that the goals of DeS were being better met letting go of the four workshop themes originally proposed (Choreographic Organisation, Dance Phenomenology, Choreographic Thinking, Meaning and Expertise) and keeping the constitution of the Workgroup which meant not inviting additional specialists on different topics. The Reader and the first meeting had effectively achieved the first goal of the workshops: *to survey the current state of the field of interdisciplinary dance-science research*. It had also established a small community of practice with a shared sense of purpose. The five research topics articulated by the Workgroup at the end of the May workshop addressed a wide range of issues that were linked to the four original themes. It was decided to invite one additional specialist to the Core Workgroup, Liane Simmel, partly because of her German Dance Medicine network and the possibility to disseminate the work of the group to this network. This then left us with the second goal of the project to work toward: *to lay the foundations for future interdisciplinary research in which dance itself plays a greater constitutive role*.

The following three aims were proposed to the Workgroup as preparation for Meeting Two:

1. engage more with the questions coming from practice, with the objective to explore new research methodologies
2. review the five topics identified at the last meeting, with the objective to identify some tractable individual projects we can help support

3. develop a concept for a project (or projects) that can productively bring our wide range of perspectives together in a shared framework or toolkit , with the objective to inform and resource education, policy makers and public

For the second meeting 17-19 February 2012, the following Core Workgroup were present: Michael Steinbusch, Kate Stevens, Patrick Haggard, David Kirsh, Alva Noe, James Leach, Maaïke Bleeker, Dana Caspersen, Liane Simmel and Scott deLahunta. Emily Cross, Bettina Blaesing, Dana Caspersen and Wolf Singer were not able to attend. Additionally the group expanded to again include Associate Researchers and Guests: Guido Orgs, Freya Vass-Rhee, Riley Watts and Anke Euler. Additional Guests were Sandra Parker, Kathryn Enright and Letizia Gioia Monda. Martin Streit provided video documentation. The meeting was again held in the rehearsal spaces of The Forsythe Company, this time making use of the studios more as the Company was not in rehearsal.

Prior feedback from and review of the first meeting had shown that the “Questions From Practice” from interviews with The Forsythe Company had not been adequately addressed. In part this reflected the probability that verbal language alone could not communicate these questions, which had their source in bodily forms of exploration and expression.

The solution was to begin the second meeting on Friday afternoon with a session aiming at exposing the source of these questions. TFC performers Esther Balfe, Fabrice Mazliah and Riley Watts were invited to conduct two movement body-based exercises for the whole workgroup: one focused on body sensation and awareness and another on doing creative thinking tasks with the whole body (**see Appendix 2**). This was followed by a 1.5 hr conversation, which was stimulated by a more nuanced understanding of the complexities of practice and the nature of practice-based concepts and questions by virtue of the experience everyone had just had. This session helped the meeting participants feel they were meeting on a more balanced level.



Workgroup doing exercises guided by Esther Balfe & Riley Watts (TFC performers). Photos: Martin Streit.

Saturday morning, the group reconvened in the same conference space as in May. The wall/ card installation from May was reconstructed using the photographic documentation; and everyone was invited at any point in the meeting to address or return to this installation. The **summary** Kate Stevens had made at the end of the science presentations at the first meeting was replayed. Both were used as reminders of the outcomes of the May meeting.

For the rest of the Saturday the group was divided in thirds and given two tasks. The first task for the smaller groups was to independently find a way to address the “Questions From Practice” revisiting them through the lens of Friday’s experience; to consider the challenges the study of dance presents science and to draft a statement or proposal to this effect. They reported back on the results of this task Saturday afternoon. The second task was to develop ideas or proposals for ways to inform education and policy makers, this might take the shape of a pilot curriculum or a set of guidelines for policy makers. The main goal of the second task was to try and engage the whole Workgroup in producing a single output.

Sunday morning, the Workgroup, Associate Researchers and all Guests were invited to share the results of their thinking about individual collaborative research ideas based on all previous discussion [Just prior to the February meeting Riley Watts had visited Emily Cross’s laboratory at Bangor University where Cross had collected motion capture and fMRI data and Watts had the chance to ask all of his many questions about neuroscience. This was held up to the group as a model for deepening mutual understanding, which should be the prerequisite for any collaborative research undertaking. They will continue to work together in the future]. Sunday afternoon the groups reported back on the results of the second task. The results of both tasks and the list of individual projects were documented in writing and mailed back out to the group soon after the meeting.

All full group discussions during the February meeting were video documented, annotated and uploaded along with photographic documentation. This was all made available to the group soon after the meeting. The small group discussions were audio taped and stored.

### **MEETING THREE:**

In June 2012, deLahunta visited the Volkswagen Foundation to share the results of the project so far, to explain that the two main goals set out for the group meetings had been effectively achieved and ask if it would be possible to reallocate the money for the final meeting (originally scheduled for 7-9 June 2013) to support the individual research projects. This was agreed and planning for the third and final Workgroup meeting could be finalised. In the months leading up to the meeting, deLahunta had exchanges with everyone to clarify the individual research directions and prepare the schedule of exchanges necessary in the upcoming meeting.

The following two goals were proposed to the Workgroup as preparation for Meeting 3:

- 1) develop, clarify and write up the individual research directions we have been discussing
- 2) draft a concrete version of the shared policy statement

For the third meeting 28-30 September 2012, the following core members of the workgroup were present Michael Steinbusch, Patrick Haggard, David Kirsh, Alva Noe, James Leach, Maaïke Bleeker, Dana Caspersen, Emily Cross, Bettina Blaesing and Scott deLahunta. Project Advisor Wolf Singer was present for the final discussion. Kate Stevens and Alva Noe were available on skype for planning individual research sessions. Additionally the group expanded to include Associate Researchers and Guests: Guido Orgs, Freya Vass-Rhee, Elizabeth Waterhouse, Riley Watts and Anke Euler. Additional Guests were Jose Biondi, Sandra Parker and Letizia Gioia Monda. Martin Streit again provided video documentation. This meeting was held in the same building as the rehearsal spaces of The Forsythe Company, but in the Z studio spaces run by Independent Dance Frankfurt (ID-Frankfurt).

This meeting was organised to be as flexible as possible with blocks set aside for individual research projects to meet and plan (see **Appendix 3** [schedule grid]). Only two group discussions were planned one on the Friday mid-day and one on the Saturday mid-day when all the individual groups reported on their progress. An editorial team comprising deLahunta, Kirsh, Bleeker and Leach took on the task of developing the shared policy statement, now titled "Statement of Principles". The whole group had the opportunity on the Friday to visit the rehearsal of William Forsythe and to discuss some of the projects with him at dinner in the evening.



Final Group discussion Saturday 29 September 2012. Foreground: Michael Steinbush, Dana Caspersen (demonstrating), Elizabeth Waterhouse, Scott deLahunta, Wolf Singer. "Dana is demonstrating épaulement as a way of thinking about and orienting the body along complex patterns of lines, planes, angles and/or volumes of direction that the dancer senses or imagines." Photo: Jessica Schäfer

Only the group discussion on Saturday was videotaped, annotated and uploaded along with photographic documentation. This was all made available to the group soon after the meeting.

Eleven new collaborative research projects (see list below) informed by questions from dance practice have been developed and clarified as a result of the meeting. A new budget and proposal has been submitted to the Volkswagen Foundation to support them. The "Statement of Principles" will be finished and published in Spring. Results of the new projects and the "Statement of Principles" with both be presented at the Tanzkongress in Dusseldorf 6-9 June 2013, alongside the release of the first Motion Bank on-line digital dance score.

### **Dance Engaging Science New Research Projects**

PILOT COLLABORATIVE PROJECTS (dance, cognitive & neuroscience, social science)  
Locus of Creativity (Stevens, Leach, Parker)

Choreographic Cognition & Long Term Memory (Stevens, Kirsh)  
Learning & Teaching Research / Documentation & Publication (Bläsing, Biondi & Coogan, Simmel)  
Dance as experience and communication (Haggard, Caspersen, Orgs)

LAYING GROUNDWORK / DEEPENING UNDERSTANDING (dancers in research labs)

MARCS Visiting Researchers (Vass-Rhee, Watts, Stevens)  
Devising Collaborative Experiments in Dance (Cross, Watts, Orgs)  
Bielefeld Visiting Researchers (Vass-Rhee, Bläsing)  
Choreography Within the Laboratory (Waterhouse, Watts, Bläsing)

COLLABORATIVE RESEARCH: THEORY & CONTEXT (building wider reflective spaces)

Philosopher & Choreographer Talk (Noë, Forsythe)  
Research on Thinking Architecture, Dance and Conflict (provisional title) (Caspersen, Steinbusch)  
Dance/ Artistic Research in Humanities (Vass-Rhee, Waterhouse, Bleeker)

**FURTHER REFLECTION:**

The above report describes how the project moved away from the original four themes (Choreographic Organisation, Dance Phenomenology, Choreographic Thinking, Meaning and Expertise), but it is possible to see where the ideas were picked up in the research topics and clusters in May 2011 and are finding their way into the individual research projects. The plan for the group to produce a jointly authored “Statement of Principles” was also not foreseen at the beginning of the project. Having the flexibility to let a research structure emerge has been an essential feature of the Dance Engaging Science workshops. One goal described in the original proposal as “the wide dissemination of reports, interim and final” has not to date been achieved, but some of the individual projects will document and disseminate research results widely. Additionally an edited and perhaps expanded version of this report, along with the list of individual research projects, will be published on-line in early 2013.

The eleven individual collaborative research projects all embrace, but vary in the extent to which they are informed by ‘questions from practice’ and how much they question assumptions of particular disciplinary perspectives. Some are more risky than others, this depends on the individual researcher(s) and what scope they feel they have to be inventive and exploratory. New forms of collaborative research involving artists, scientists and scholars take time to evolve. Some time without expectations of specific research output is required. This allows participants to develop forms of communication (languages) that allow everyone eventually to feel they meet on the same level. Dance Engaging Science gave the Workgroup and others participating the chance to collectively explore these tensions, sometimes minimally, but enough so that each individual project takes the experience with them to develop further.

Another issue to underline is a practical systemic problem that occurs when scientists and artists try to work together on equal collaborative terms. Without the institutional affiliations that are normal for scientists and scholars, artists often find themselves unable to participate in funding applications that require such connections be in place. There is often no way to work around these issues. And an artist may, having not followed the institutional research pathway of a scientist or scholar, find him or herself to be ineligible for certain schemes for reasons of credentials or age, even if recognised by their peers both in arts as well as other disciplines as equally expert. These issues affect the potential future of these kinds of research exchanges. This has had some impact on the individual research projects, e.g. Kate Stevens was not able to involve Freya Vass-Rhee without an institutional

affiliation in her ARC Linkage application, but the issue is more likely to come up if/when some of the projects decide to apply for more funding.

Relatively little media coverage has taken place so far. The first trip Riley Watts made to visit Emily Cross was covered on the Bangor University website (<http://tinyurl.com/bt7hcnq>) and by BangorTV. Anke Euler presented a Dance Engaging Science poster at the TAMED 2012 congress in June in Berlin. The final presentation at the Tanzkongress 7 or 8 June 2013 will be a very public context attended by approximately 500-700 delegates from across the dance field. Freya Vass-Rhee is publishing a paper entitled "Promising Research, Questioning Education: The Dance Engaging Science Workshops" in the upcoming Dance Education Biennale Publication in early 2013. Additionally two edited transcripts of exchanges organised by Sandra Parker between herself and Alva Noe and Patrick Haggard are available and may be published later.

Some publications projects have directly benefited from the Workgroup meetings and discussions. Final editing (with three of the authors in the Workgroup) was accomplished on this article during the first meeting in May: Bläsing B, Calvo-Merino B, Cross E, Jola C, Honisch J, Stevens K (2012) Neurocognitive control in dance perception and performance. *Acta Psychologica*, 139 (2). 300 – 308; and Maaïke Bleeker has submitted an MIT book proposal for "Transmission in Motion", an edited publication with chapters by three members of the Workgroup.

## **NAMES & AFFILIATIONS**

### **CORE WORKGROUP**

- Bettina Bläsing. Department of Sports Science, Neurocognition and Movement – Biomechanics. University of Bielefeld
- Maaïke Bleeker. Professor and the Chair of Theatre Studies. Utrecht University
- Dana Caspersen. Choreographer/ Performer. The Forsythe Company
- Emily Cross. School of Psychology. Bangor University Wales & Department of Psychology. Radboud University Nijmegen.
- Patrick Haggard. Department Institute of Cognitive Neuroscience & Dept. Psychology. University College London
- David Kirsh. Interactive Cognition Lab. Department of Cognitive Science. University of California at San Diego
- James Leach. Professor of Anthropology. University of Aberdeen
- Alva Noë. Department of Philosophy. University of California Berkeley
- Liane Simmel. Fit for Dance. Institute for Dance Medicine, Munich & Tanzmedizin Deutschland
- Michael Steinbusch. Henn Architekten Munich/ Technische Universität Dresden
- Kate Stevens. School of Psychology. University of West Sydney

### **PROJECT COORDINATOR**

Scott deLahunta. Senior Research Fellow Coventry University. R-Research Director / Wayne McGregor | Random Dance. Project Leader Motion Bank/ The Forsythe Company

### **RESEARCH ADVISOR**

Wolf Singer. Director Department of Neurophysiology. Max Planck Institute for Brain Research Frankfurt



#### ASSOCIATE RESEARCHERS

Guido Orgs. PHD student with Patrick Haggard with both dance and psychology training  
Freya Vass-Rhee. Dramaturg with The Forsythe Company  
Elizabeth Waterhouse. Independent Performer. Formerly with The Forsythe Company  
Riley Watts. Performer with The Forsythe Company

#### REGULAR GUESTS

Sandra Parker. Melbourne based choreographer with Council for the Arts Fellowship  
Anke Euler. Dance Writer/ Dramaturg based in Munich  
Letizia Gioia Monda. PHD Student working with Motion Bank

#### SPECIAL GUESTS

Kathryn Enright, Independent Dancer/ Choreographer  
Jose Biondi. Professor, Course Leader, MA in Choreography, Palucca Hochschule für Tanz Dresden  
Kurt Koegel. Professor, Course Leader Masters in Contemporary Dance Pedagogy, Frankfurt  
University of Music and Performing Arts

#### VIDEO DOCUMENTATION

Martin Streit. Project Co-Ordinator Piecemaker software for Motion Bank

## APPENDIX 1:

READER: Dance Engaging Science Interdisciplinary Research

- 1) Bettina Bläsing. 'The dancer's memory – expertise and cognitive structures in dance'. In: B. Bläsing, M. Puttke, & T. Schack (Eds.), *The Neurocognition of Dance*. London: Psychology Press. 2010.
- 2) Bettina Bläsing, Martin Puttke and Thomas Schack. 'Preface: The cognitive science of dance – two worlds approaching or two approaches to the same world of movement?' In: B. Bläsing, M. Puttke, & T. Schack (Eds.), *The Neurocognition of Dance*. London: Psychology Press. 2010.
- 3) Maaïke Bleeker. 'What if This Were an Archive?' in: *NOTATION*. rtrsrch Vol.2 Issue 2. Amsterdam. March 2010. [copies of full issue available here in the sidebar]
- 4) Dana Caspersen. *Decreation: Fragmentation and Continuity*. In: *William Forsythe and the Practice of Choreography: It Starts From Any Point*. Ed. Steven Spier. Routledge. 2011.
- 5) Emily Cross. 'Building a dance in the human brain: Insights from expert and novice dancers'. In B. Bläsing, M. Puttke, & T. Schack (Eds.), *The Neurocognition of Dance*. London: Psychology Press. 2010.
- 6) Emily S. Cross & Luca F. Ticini. 'Neuroaesthetics and beyond: new horizons in applying the science of the brain to the art of dance'. *Phenom Cogn Sci*. Published Online 05 January 2011.
- 7) Patrick Haggard. 'Extrastriate body area underlies aesthetic evaluation of body stimuli'. B. Calvo-Merino, C. Urgesi G. Orgs, S. M. Aglioti, P. Haggard. *Exp Brain Res* (2010) 204:447–456.
- 8) David Kirsh. 'Creative Cognition in Choreography'. *Proceedings of 2nd International Conference on Computational Creativity*. 2011.
- 9) David Kirsh. 'How marking in dance constitutes thinking with the Body'.
- 10) James Leach, Sarah Whatley, Scott deLahunta. *Report on Choreographic Objects: traces and artefacts of physical intelligence*.
- 11) James Leach. 'Extending Contexts, Making Possibilities: An Introduction to Evaluating the Projects'. *Leonardo*, Volume 39, Number 5, October 2006, pp. 447-451
- 12) James Leach. 'Modes of Creativity' in E. Hirsch and M. Strathern (eds) *Transactions and Creations. Property Debates and the Stimulus of Melanesia* (2004), Berghahn Books: New York and Oxford.
- 13) Alva Noë. Introductory chapter to new book: *Varieties of Presence*.
- 14) Alva Noë. 'Vision without Representation'. In: new cognitive science volume on the relation of perception and action
- 15) Alva Noë. A precis of 'Action in Perception'. *Philosophy and Phenomenological Research* Vol. LXXVI No. 3, May 2008. 2008 International Phenomenological Society

- 16) Guido Orgs & Patrick Haggard. 'A Neuropsychological study of choreographic patterns in aesthetic perception of dance'. Institute of Cognitive Neuroscience, University College London
- 17) Wolf Singer/ Anke Euler. 'Dancing like neurons'. Wolf Singer interviewed by Anke Euler. Published in: ballet tanz, april 2009.
- 18) Wolf Singer. 'The Self from a Neurobiological Perspective'. Max Planck Institute for Brain Research, Frankfurt am Main, Germany.
- 20) Michael Steinbusch. (Seminar Report) 'Seminar mit Architektur- und Tanzstudenten. Seminarbericht'. Technische Universität Dresden, Lehrstuhl Industriebau Center for Knowledge Architecture, Palucca Schule Dresden Hochschule für Tanz D.A.N.C.E. Programme.
- 21) Kate Stevens. Stevens, C., Winskel, H., Howell, C., Vidal, L-M., Latimer, C., Milne-Home, J. (2010). 'Perceiving dance: schematic expectations guide experts scanning of a contemporary dance film'. *Journal of Dance Medicine & Science*, 14(1), 19-25.
- 22) Kate Stevens. Opacic, T., Stevens C., & Tillmann, B. (2009). 'Unspoken knowledge: implicit learning of structured human dance movement'. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 35(6), 1570-1577.
- 23) Kate Stevens. Stevens, C., Schubert, E., Haszard Morris, R., Frear, M., Chen, J., Healey, S., Schoknecht, C., & Hansen, S. (2009). 'Cognition and the Temporal Arts: investigating audience response to dance using PDAs that record continuous data during live performance'. *International Journal of Human-Computer Studies*, 67(9), 800-813.
- 24) Freya Vass-Rhee. 'Auditory Turn: William Forsythe's Vocal Choreography'. *Dance Chronicle*. (2010) 33:3, 388 — 413
- 25) Elizabeth Waterhouse. 'Dancing Amidst The Forsythe Company Space, Enactment and Living Repertory'. In: *Theater ohne Fluchtpunkt / Theatre without Vanishing Points*. Eds. Brandstetter, Gabriele & Wiens, Birgit Alexander Verlag Berlin/Koeln. 2010.

## APPENDIX 2:

### Movement/ Body-Based Exercises

Prepared for Dance Engaging Science Meeting nr. 2  
17th February 2012

#### Riley Watts:

The idea of holding a movement workshop for Dance Engaging Science, a workgroup of experts with each a vested yet varying interest in dance, seemed a worthwhile challenge to make. As a dancer I have come to realize the pivotal role of kinesthetic focus in the practice of improvisation. Without an intimate sensory understanding of one's body, it is very difficult to access the kind of spontaneous creativity which is hallmark to dance improvisation. For this reason I led an active meditation in which we could take mental stock of what is physically present in the human form, what relationships are found within the body, and how presence of mind relates to what the body actually does. Utilizing what I call an "inner camera," each participant had the opportunity to research within him/herself how visual imagination connects to the haptic sense of self. The idea in this particular Dance Engaging Science workshop was for the focus to start very locally within each participant, and then to expand the awareness outside the body into relationship to both the space and to others via Esther's proposed exercises.

#### Esther Balfe:

On presenting the assignment, I first explained the thought process that brought me to choose this specific task. Here was a group of people that had an entirely different range of experience and I was certain would have a different approach to the physical contribution to the task I was about to offer them. I lead them in with a very small taster of the challenges we as improvisers face on a daily basis ( The group had been moving from Riley's warmup - imagining a camera inside the body or under the skin, aptly named inner-camera, and applying different qualities of moving ). The first part of the workshop was chosen to gain an immediate awareness of space and recording that awareness and patterns one applies in the space. They were asked to walk in the space and to be aware of the traffic and other people's intention in the room. Then we tried the same with different speed ratios and level changes. Once the pattern had been established I asked the group to recall what they had done and attempt to repeat the pattern they thought they had done. We then carried out a similar task but this time got a little more creative in that we allowed 3 different paths for each journey, a varied modality for traveling was applied.

The second part of the workshop was aimed at creative thinking by building a construction from hand held wooden blocks and then transferring what was seen externally and applied to the body. Four tables were placed together in the centre of the studio and for each table a different number of colour building blocks. I asked four people to come forward and arrange the blocks to their own preference. The outcome was different for each individual so we had four very different looking constructions upon the tables. I then asked for the members of the group to choose a table and recreate what was on the table onto their own bodies, then the next stage was to take the structure on their bodyframe into the room and lastly to fabricate the last two tasks into a abstract physical form - purposefully being nonspecific in that they could devise their own rules of conduct. I also mentioned towards the end that if the participants wished to apply skills or tools to create a system then now was the time to do so.

