

Does It Matter? Composite Bodies and Posthuman Prototypes in Contemporary Performing Arts

DAY 3 – Thursday March 19th, 2015: Prototypes for the transmission of performative knowledge

Location: [Arts Centre Vooruit](#)

- [Jean Paul Van Bendegem \(KEYNOTE\)](#) / [Maaïke Bleeker \(KEYNOTE\)](#)

Practices of notation and capture in arts and science: How moving matter is made to perform

The much anticipated detection of the Higgs Boson particle also evoked a critical response. In her analysis of the 'hunt for Higgs', Maaïke Bleeker shows how the Higgs particle was 'made to perform' in a scientific practice that involves types of both human and non-human agency: 'How [objects of knowledge] appear is as much a matter of the performance of technology as of our entanglement with this technology'.* 'What political and epistemological tools do we have at hand for responding to the interplay between agential matter and human agency?'

Jean Paul Van Bendegem wrote a musical score that features Pythagoras' theorem as a thematic figure. Can we recognise mathematical patterns when we listen to the music? What happens when a choreography is created that is based on the performance of this music? How do we communicate mathematical problems and how do questions of notation in science resonate with practices of capture in artistic practice?

Discussing these topics and more, in this dialogue Maaïke Bleeker and Jean Paul Van Bendegem look at ways in which moving bodies, particles and other types of matter are captured and 'made to perform'. Going back and forth between various fields of inquiry, they will touch on some conspicuous examples that point at the agency of technology as an important topic in contemporary arts and science.

*Bleeker and Van der Tuin 2014

Maaïke Bleeker is a Professor and the Chair of Theatre Studies at Utrecht University. She studied Art History, Theatre Studies and Philosophy at the University of Amsterdam where she also completed her PhD on Visuality in the Theatre (2002). Previously, she lectured at the Department of Theatre Studies of the University of Amsterdam, The Piet Zwart Post-Graduate program in Fine Arts (Rotterdam), Media G_n: Centre for Emergent Media (Groningen), The School for New Dance Development (Amsterdam), the post graduate program Arts Performance Theatricality (Antwerp), and in the IPP Performance and Media Studies Summer School of the Johannes Gutenberg Universität, Mainz. Since 1991, she also worked as a dramaturge for various theatre directors, choreographers and visual artists. She performed in several lecture performances, ran her own theatre company (Het Oranjehotel) and translated five plays that were performed by major Dutch theatre companies. She was an Artist in Residence at the Amsterdam School for the Arts (2006-2007) and member of the jury of the Dutch National Theatre Festival TF (2007-2008). Prof. Bleeker is President of Performance Studies international and member of the advisory board of ASAP (the Association for the Study of the Arts of the Present).

Jean Paul Van Bendegem is professor at the Vrije Universiteit Brussel (Free University of Brussels) where he teaches courses in logic and philosophy of science and guest professor at Ghent University. He is director of the Center for Logic and Philosophy of Science and the editor of the journal *Logique et Analyse*. His research interests are in the philosophy of mathematics, the relations between science and religion and between science and the arts.

- [Hetty Blades / David Bennett / Natalie Garrett Brown](#)

The Centre for Dance Research (C-DaRE) <http://c-dare.co.uk> situated in the School of Art & Design at Coventry University, (UK) offers a panel entitled Bodies of Knowledge; reflections on dance, documentation and ontology. Indicative of C- DaRE's central research activities nationally and internationally, this panel explores three alternative perspectives on the cultivation, documentation and transmission of performative knowledge. The three papers respond to the questions posed under Cluster #3: Prototypes for the transmission of performative knowledge, sharing central themes and offering critical reflections upon dance in digital forms while examining layers of embodied, virtual and abstract experiences within contemporary dance practice.

Paper One – Dr. Natalie Garrett Brown

Nomadic Making; moving through the digital and live in collaborative performance practice.

Authored from the position of practitioner-researcher, this paper is offered as the continuation of an ongoing collaboration between nine artists working across dance, visual art, sound, lighting, film and photography. The collaborative project entitled L219 culminates in gallery performances at dusk following extended periods of nomadic making processes. Focusing on the third iteration of this work re-titled Flock0Mania taking place in February 2015 this paper will consider how the creative process for this collaboration resides in a creative exchange across the live and the virtual, the embodied and the digital and the hand written and processed. In this the process of art making as unfolding across extended time and space through collective activity is entertained. Specifically the RSVP cycle, a conceptualization of collaborative creative processes by American outdoor movement artist Anna Halprin, is discussed as a way to position technology in a flattened hierarchy of resources for art making.

Acknowledging the ontological provocations that lay amongst this creative approach this paper converses with the work of Braidotti, R and Manning, E. to explore the significances of making processes that are distributed across composite bodies both actual and virtual.

Dr Natalie Garrett Brown, BA, MA, PhD is principal lecturer in dance at Coventry University, UK, where she contributes to the BA(Hons) Dance course and co-ordinates postgraduate provision for the Performing Arts Department. Her practice and research interests are theoretically situated within Feminist understandings of embodied subjectivity and the ways in which Somatic and Reflective practices can inform education, performance making, creativity, writing and digital cultural practices. She is associate editor for the *Journal of Dance and Somatic Practices* <http://jdsp.coventry.ac.uk> and sits on the editorial board for *Dancelines*, *Research in Dance Education* and is vice chair for DanceHE (Standing Conference of Dance in Higher Education). <http://dancehe.org.uk> Natalie undertook her Somatic Movement Educators Training in Body-Mind Centering with Embody Move Association, UK and is co-convenor of the International Conference for Dance & Somatic Practices,

held biannually at Coventry University. She is also a founding member of *enter & inhabit*, a collaborative site responsive project <http://www.enterinhabit.com>, and the Corporeal Knowing Network; an exchange between theatre and dance artists & scholars interested in embodied writing practices and processes.

Paper Two – David Bennett

A Library of Processes: a thick description of the making of a work

This paper responds to the themes in Cluster #3 with particular focus on the question: How do new evaluations of diverse established modes of performance transmission inform emerging prototypes in this field? Drawing on the experience of developing my own prototype digital object *A Library of Processes* I will share the key features and issues of such an undertaking.

A Library of Processes takes the form of a “thick description” (Geertz) that emerged from my observations of the making of *Table of Contents* (2014), a live movement installation by Siobhan Davies Dance. The notion of the dance archive was one of the starting points for *Table of Contents* which attempts to counter the perceived limitations and drawbacks of video documentation by presenting a living archive - a series of events that draw upon the online archive of Siobhan Davies Dance, as well as the particular interests of each collaborating dance artist.

The film *All This Can Happen* (2012), created by choreographer Davies and filmmaker David Hinton, also guided the artists during the making of *Table of Contents*. Constructed entirely from archive photographs and footage from the earliest days of cinema, including material by Etienne-Jules Marey, the film offered a way to investigate an action forensically, dramatically and as a document. This paper shows how *Table of Contents* (performance) – *All This Can Happen* (film) – *Siobhan Davies RePlay* (online archive) become enmeshed within the prototype *A Library of Processes*.

David Bennett is a PhD candidate in the Centre for Dance Research (C-DaRE) at Coventry University. His research is exploring the role of the digital venue for the collection and dissemination of dance artist processes. Prior to this, he has worked on a number of dance research projects, notably the Archive of Siobhan Davies Dance (www.siobhandaviesreplay.com) and the Digital Dance Archives portal (www.dance-archives.ac.uk/). He has presented at a number of conferences and seminars including Digital Echoes and DRHA. David is also Online Editor for the Journal of Dance & Somatic Practices (<http://jdsp.coventry.ac.uk>)

Paper Three – Hetty Blades

Scoring Choreographic Knowledge: The ontological and analytical implications of emerging dance scores

This paper responds to the themes outlined in cluster #3, with particular focus on the question; What are implications of the encounter with these digitally-enabled interfaces for our understanding of performance? Using Forsythe's Motion Bank project as a case study I consider the way in which digital scores, as prototypes for the dissemination of choreographic knowledge, impact on the reading and understanding of dance works.

The documentation, analysis and observation of dance has traditionally been focussed towards performative, movement-based outputs. This seems a logical response to dance's ontological status; after all it is through performance that we are able to see the work in physical form. However, dance works comprise more than their physical instances. This is demonstrated through the scores considered in this paper, which are not focussed solely on the documentation of specific movements or performances, but rather with disseminating choreographic process, and revealing features of the work not present in performance alone.

I suggest two key outcomes of this approach to scoring. Firstly, that the work is visualised as a web of physical and metaphysical components, exposing its complex ontology. Secondly, I argue that accessing the work in this form calls for new frameworks for analysis, interpretation and understanding. In contrast to traditional aesthetic appreciation, and post-structuralist views on authorship, the dance is presented alongside causal, intentional and provenance related facts, challenging existing modes of understanding. This paper considers how these prototypes demonstrate emerging analytic methodologies and call for alternative frameworks for understanding dance.

Hetty Blades is a PhD student in the Centre for Dance Research at Coventry University. Her research considers the ontological impact of digital modes of documenting and disseminating dance. She holds a BA (Hons.) in Dance Theatre from Trinity Laban and an MA in Dance Studies from Roehampton University. Hetty previously worked as a dancer and dance critic, and is now a part-time visiting lecturer in dance studies at multiple UK institutions. She has published papers in a variety of journals, including *Conversations Across the Field of Dance Studies* and the *Postgraduate Journal of Aesthetics*.

- **John McCormick / Steph Hutchison – Emergence**

Emergence, a dance performance created by John McCormick and Steph Hutchison, scholars in the areas of dance, motion capture, agent – dancer performance co-creation, real-time 3D, artificial intelligence, neural networks, performance, choreographic practice and external frameworks.

John McCormick's, *emergence*, features collaborations between a human dancer (Hutchison) and an artificially intelligent performing Agent. The Agent has learnt to dance through a rehearsal process with its human dance partner, Hutchison, sharing her movement and style. Visualisations of their interactive semi-improvised dance performance are projected in glorious passive Stereoscopic 3D. *Emergence* uses a portable motion capture system to allow the agent to sense and recognise the dancer's movement using its Artificial Neural Network. The agent is able to follow the dancer's movement, create movement based on the vocabulary it has learnt from the dancer in rehearsal, generate movement phrases using the current movement of the dancer as starting points and can also recognise short full-body movement phrases or "gestures" which prompt the agent to inject verbal commentary on the dancer's performance.

Emergence uses the framework of distributed cognition to allow the agent and dancer to form an interactive, inter-dependent relationship from which the co-creation of the performance evolves. The agent is not explicitly programmed with set behaviours, as in traditional software programming, its capabilities come about from the unsupervised learning process and have the inter-dependent relationship with the dancer embedded in that learning. The behaviours emerge from the learning process allowing the agent and dancer to develop a complex, co-created dance performance.

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Emergence is the result of McCormick and Hutchison's collaborations with Motion.Lab and the Centre for Intelligent Systems Research (CISR) at Deakin University, Melbourne Australia. The artists have created a performance environment in which an artificially intelligent performing agent and the dancer speak the same artistic language and collaborate in the co-creative process of performance making.

John McCormick is one of the pioneers of new media dance, motion capture and telematic performance. John has collaborated on works worldwide, including at peak festivals ZERO1SJ, SIGGRAPH, Melbourne Festival, Venice Biennale, Institute of Contemporary Art (ICA) London, Ars Electronica and Monaco Dance Forum. John was a founding member of Company In Space, Dancehouse and Squarangle. He was awarded an Australia Council Fellowship in 2007-2008 for real-time motion capture and networked performance. John has collaborated with the Motion.lab team on many stereographic motion capture and augmented reality projects and has also worked on visualisation projects at the Centre for Intelligent Systems Research. John's current research centres on intelligent agents that can learn to dance from human dancers and use this learned behaviour to

recognise movement and create appropriate movement responses. The agents can dance with a human dancer or with each other and are currently attempting to take over physical robot bodies.

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- **Louise Douse – Visualising Flow: Analysing optimal experience in the body of the performer**

Research Institute for Media Arts and Performance, University of Bedfordshire

Conference themes addressed:

- Composite bodies: What are implications of the encounter with these digitally-enabled interfaces for our understanding of performance and the body of the performer
- Corporeal computation: Motion capture data of performance allow for complex quantitative analyses, but how to visualize and translate this data in a way that does justice to the singularity of artistic practices?

This paper argues that the subjective experience of flow within dance improvisation can be identified within the body through the use of motion capture technologies. As such, it will first articulate flow as a transdisciplinary concept, addressing the fields of positive psychology and movement analysis; flow in positive psychology is considered an optimal experience in which participants are totally immersed in an activity to the benefit of their wellbeing (Csikszentmihalyi, 1990). Rudolf Laban and Warren Lamb's work on flow will be drawn on and extended with regard to their research on movement pattern analysis in order to understand movement potential as well as motivational potential with regard to decision-making. My research suggests these moments of optimal experience can be located in an individual's preferred patterns of movement. In this paper, I will draw

on case-study research to discuss the use of motion-capture technologies in capturing this experience of flow. Visualizations of the motion capture data are considered to present the body in order to allow for a 'reading' and interpretation of the body drawing on Don Ihde's theory of embodied-technics. The visualizations are produced with reference to the work of Laban and Lamb to facilitate a readable and recognisable description of the body in flow. These visualisations are innovative in both their application to flow and in their use of Laban for analysing the movement of the whole body, as a tool for analysis.

Louise Douse is a Lecturer in Dance at the University of Bedfordshire where she has recently completed her PhD in dance and technology. Louise has been invited to submit a chapter for the forthcoming *Oxford Handbook for Dance and Wellbeing* (2015) and has presented papers at several international conferences including the Digital Research for Humanities and Arts Conference (2010, 2014). Louise is also the Secretary of the Laban Guild in the UK and continues to develop her research in the area of movement analysis and optimal experience.

- **Richard Merritt / Jane Hawley – The Computational Body : Extended Abstract**

The Computational Body is the product of an ongoing collaborative research project whose goal is to produce a multivalent, interactive haptic interface for artists, dancers, movement researchers and installation participants. The long term goal of this inquiry is to provide dancers/ and movement artists and with an object-oriented programming environment (projected release spring 2013).

The project, in turn, attempts to address some of the primary research concerns of the collaborators: Jane Hawley, dancer and movement artist and Richard Merritt intermedia/conceptual artist and computational aesthetician. As both artists and academics Hawley and Merritt have researched performative and learning models that embrace verbal, auditory, mathematical, and haptic discourses in the creation of the Computational Body project.

Introduction : Performance and Interaction

The Computational Body project engages participants/artist in the act of creating a performance drawing. Computationally, this process begins by first tracking body parts in three dimensions of space via an infrared camera. Then interpolating the location, speed and "smoothness" of the body in dynamic motion through an algorithm. Finally the software takes the information processed through the algorithm and displays the images in real time. In performance The Computational Body uses a wireless network to communicate between the computer and the digital projector.

Theory

The Computational Body offers encounters with and contemplation on embodied experience. This embodied experience through the interaction with a technology that offers the participant/participants the opportunity to work in collaboration with technology to produce a digital artifact, however visual. The technologized body, in this case, is integrated aesthetic instrument, performer, interface, user and author.

Expanded Potential Uses

Currently Hawley and Merritt have worked on expanding functionality of the technology into three core areas: movement arts training, installation art and gaming. Movement artist may use this technology to refine awareness of lines of action in space and refinement of spatial intent (as per Rudolf Laban). Furthermore, the dancer/participant may currently use the Computational Body project as a haptic interface for drawing and animation.

The Computational Body is not only for the professional movement/dance artist. As an open-ended installation, our research indicates, that the experience of physical activity expressing itself as drawing has been profound for our research participants of variety of ages and abilities. As the technology allows multiple participants it can be used a tool for sustained social interaction within an aesthetic experience.

Gaming as experiential and embodied learning, though in its initial phase, we have been working towards a new form of “relational gaming” that makes use of a Computational Body haptic interface. We feel that a new form of haptic interaction can expand the nature of gaming to include a form that is collaborative without fixed narrative, menu screens, buttons or instructions.

- **Emily Payne / Floris Schuiling – Notational intimacies: score annotation as co-creative practice**

One of the most important developments in current musicology is a disciplinary turn towards performance as music’s defining element. Music is no longer understood as an object, an ideal structure of sounds or notes on a page, but as something people do: music as verb rather than noun. Central to this development has been the deconstruction of the notion of the musical ‘work’ and the questioning of the centrality of notation in musicology. ¹ This paper aims to create some conceptual room for a positive function of notation within the creative process; not as the representation of an abstract structure but as a concrete material object, in order to move beyond a paradigm that opposes notated permanence to performed and/or improvised transience. We compare two different ethnographic case studies undertaken in the areas of contemporary composed music and improvised music. Concentrating on the scarcely studied practice of annotation, we propose an ontological shift from the work to the score. Annotation is an intimate practice, a way of negotiating one’s agency and ownership of the music, distributing creativity over a network of human and non-human actants. As a prime example of the active role of the score as a fluid quasi-object

collaborating in music's creative process, we hope that a study of such annotations will allow a consideration of notation in its textility rather than its textuality, with the performer reimagined as a weaver, situated 'in amongst a world of materials, which [s]he literally draws out in bringing forth the work.'

Emily Payne is currently pursuing a Doctorate at the University of Oxford under the supervision of Eric Clarke, undertaking a project that examines the creative processes of performance with a particular focus on clarinetists. She holds a BMus in clarinet performance from the Royal Welsh College of Music and Drama, and completed her MMus in Performance Studies at Royal Holloway, University of London.

Floris Schuiling is a PhD candidate at the University of Cambridge, under the supervision of Nicholas Cook. His research focuses on the performance practice of the Dutch improvising collective the Instant Composers Pool. He studied musicology and philosophy at Utrecht University in the Netherlands. His academic interests are performance, improvisation and textuality, philosophical pragmatism and new materialism.

- **Kim Vincs / John McCormick / Steph Hutchison – Emergence and transformation in digital dance environments**

Emergence: Emergent behavior as co-creative relationships between artificial agents and human dancers. An artificial neural network based agent has learnt movement phrases from a dancer in an extended rehearsal process. The agent and dancer are able to co-create a semi-improvised dance performance where the agent exhibits unique emergent behavior.

Ex-quiry: Digital agents as choreographic mentor. In the previous work the dancer leads the agent's learning, Ex-quiry swaps this role with the agent's choreographic invention providing stimulus for the dancer's solo movement investigations.

Dance haptics for the visually impaired: Transposing dance performance between senses. Using agent-based analysis of movement performance to transpose and transmit a haptic experience to visually impaired audience members. The agent also provides haptic feedback to the dancer signalling its role as a performing entity.

Transmedia dance performance: synthesizing physical and digital modes of performance presence. New hybrid dance technology work is discussed here that uses stereoscopically projected 3D environments to shift the nature of audiences' perception of 'live' spatiality, and to augment the temporality of performative 'information' through an app that provides 'back story' to the dance in

real-time on a phone or tablet. These processes position 'artist' and 'technology' within a fundamentally co-creative, co-generative and emergent relationship.

Kim Vincs is the Director of the Deakin Motion.Lab, Deakin University's motion capture studio and performance technology research centre, which she established in 2006. Kim is a choreographer and interactive dance artist who develops new ways of investigating and creating dance using digital technology. Her research brings together scientific, technological and artistic methodologies to develop new ways of creating dance performance. She is a member Deakin University's Centre for Intelligent Systems Research.

She leads two Australian Research Council Discovery Projects in dance technology, and has worked with Professor Kate Stevens on two Australian Research Council Linkage Projects in dance and cognition. She is currently working with Opera Victoria on a new Australian Research Council Linkage Project developing digital scenography as a means of enhancing the transportability of full-length operas, and with Arts Access Victoria and CISR developing haptic devices to enhance the ability of people who are blind or vision impaired to access and experience dance performance.

Kim has worked with several Australian artists and companies to create technologically enabled design for performance, including the Melbourne Ballet Company, Sidney Myer Fellows Gorkem Acaroglu and Danielle Wilde, and Opera Victoria. She recently worked with Australian Dance Theatre to create 3D stereographic imagery for Garry Stewart's new work, *Multiverse*, which premiered at the Adelaide Festival Centre in July 2014. Her own work, *The Crack Up*, premieres at the Merlyn Theatre, Coopers Malthouse, in October 2014.

She has worked with many industry partners to develop projects in motion capture, movement analysis and digital art. She has commercial motion capture credits in computer games, television commercials and film, including Altv.fx's Cannes Silver Lion winning *Nocturnal Migration*.

John McCormick is one of the pioneers of new media dance, motion capture and telematic performance. He was awarded an Australia Council Fellowship in 2007-2008 for real-time motion capture and networked performance. John has collaborated on works worldwide, including at peak festivals ZERO1SJ, SIGGRAPH, Melbourne Festival and The Venice Biennale. He has also performed works at ICA London, Arnolfini Bristol UK, Monaco Dance Forum, the International Symposium on Art and Technology, DEAF, Hong Kong and ShangHai Arts Centres.

John was a founding member of Company In Space, and Dancehouse, Melbourne. John was a collaborator on the stereographic motion capture performances *Aura* (2009) and *Choreotopography* (2010-2011) performed at the Deakin Motion.Lab and the Victorian Arts Centre. Along with Adam

Nash he founded Squaretriangle, developing and presenting work at Hidden Cove, Ars Electronica, Neutral Ground and Screen Space. He is currently concluding his PhD in dance and artificial intelligent systems at Deakin University, and has been appointed Research Fellow at the Deakin Motion.Lab.

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Steph is a regular physical performer and dancer for motion capture projects with Motion.Lab. Alongside Kim Vincs and the Motion.Lab team Steph is currently a Research Assistant for an ARC Discovery project. In April Steph commenced a new collaborative work with Claudia Maharaj in Berlin. Her solo WORK will be produced by Dancehouse in September. Steph is a PhD research candidate at Deakin University’s Motion.Lab. Her project is entitled ‘Sampling: choreographic interventions for dance and circus’.

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