



screenshot of Summerbranch virtual environment, image courtesy of Igloo

October 15, 16, 2010

SYMPOSIUM_WORKSHOPS_PUBLICTALKS_PERFORMANCES_INSTALLATIONS_SCREENINGS

SEYMOUR CENTRE, Sydney

Critical Path, University of Western Sydney, and Seymour Centre, present a program of keynotes, presentations, panel discussions, installations and performances.

Curated by Garth Paine and Margie Medlin

Proceedings edited by Garth Paine

SYMPOSIUM_WORKSHOPS_PUBLICTALKS_PERFORMANCES_INSTALLATIONS_SCREENINGS
SEAM AGENCY AND ACTION 2010



Welcome to SEAM 2010, Agency and Action

This Symposium comes out of a line of enquiry that takes us beyond the pragmatics of interactive art making, the technologies, the programming and the implementations, to an exploration of how the practice of interactive performing arts augment, transform, and re-situate perceptions of lived experience. The art experience creates a situated awareness, be it a wonderment inspired by skill, or materiality, by a narrative or an abstract communiqué, through verbal or non-verbal channels. This situated awareness establishes notions of agency and provides for an experience of embodiment, where the nature of the art work often acts to mediate that experience, forming a bridge between artist and audience, and possibly between the members of the audience themselves.

Agency has been provided in interactive arts through action centered tasks; one navigates a pathway, triggers a sound or video file, pushes a button etc - all focused within a paradigm that frames the engagement as external, as something other, that is required of the participant by the artwork. Somatic body work, such as the Feldenkrais Method, designed by Moshé Feldenkrais (1904–1984) as a movement re-education system aiming to expand and refine the use of the self through awareness, have become the framework for examining questions of agency and embodiment for a number of artists presenting at SEAM2010. Such body work techniques are being used by artists to bring the action/event model from outside the body to inside - to draw out the inherent patterns within the bodies functioning, and to bring the focus to being present, in this body, in this space, in this set of relationships. This kind of work inverts the external relationship described above, which is determined by technology, situating Agency inherently within the individual. It also situates embodiment within the individual and their contextual relationships rather than in the technology. One might ask for instance; Is Stelarc's Articulated Head (exhibited in the foyer) an embodied agent? This is of course not an inherent quality of the technology, it must be constructed through a sense of agency, the relationships it stimulates and the way in which those qualities combine to make the participant feel present in the moment. The Articulated Head is a difficult example because it is clearly a technologically complex object, which is inherently external to those engaging with it.

Much of the other work being discussed at SEAM2010 relates to art works that establish an experiential outcome and as such are more readily internalised. The questions of agency, embodiment and mediation are however just as relevant here. The introduction of bio-sensing, video tracking and motion capture (MoCAP) technologies has profoundly changed the way the performer (for instance, in a dance work) and the audience (as a spectator or in an installation work), navigate and share agency. The extension of the performers body, to be the source of the entire performative environment, such as in Hellen Sky's, Darker Edge of Night, where the sonic and visual content of the work is generated in the moment through bio-sensing of her body, changes notions of embodiment from the lived body to a distributed body, within either a contained physical space or across a network.

In SEAM2010, we have sought to direct this discussion through identifying some of the principle considerations as titles for panel session, these are: Digitised Body, The Sensorium, Presence, Agency, Distributed Body, Interactive Performance and Virtual Spaces. The Symposium is however also part of a larger project, designed to encourage participation, to ensure that as many people as possible are approaching the discussion with embodied knowledge, with a familiarity, however new, of the technological possibilities and the challenges inherent in engaging fully with their potential.

SYMPOSIUM_WORKSHOPS_PUBLICTALKS_PERFORMANCES_INSTALLATIONS_SCREENINGS
SEAM AGENCY AND ACTION 2010

There has been a series of workshops at Critical Path, working with Motion Capture (MoCAP), video tracking and bio-sensing. These workshops, lead by internationally acclaimed practitioners and researchers, (Ruth Gibson, Frederic Bevilacqua, Christian Ziegler, Simon Biggs, Sue Hawksley, Holger Deuter) provided an experiential learning curve for participants.

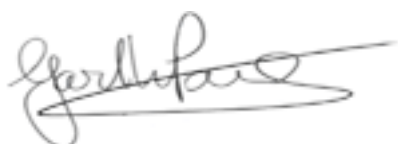
The SEAM2010 project continues beyond the symposium with another workshop, an exhibition (Volker Kucheimeister, Brad Miller) at Critical Path, and two weeks of discussions at Critical Path and the VIPRE lab, UWS, in 2011. Oversight of all of these activities is being undertaken by Professor John Sutton and Lars Marstaller, who are applying a Cognitive Ethnographic framework to examine what we, as practitioners are doing, seeking and experiencing both in learning about new possibilities in our practice, applying them within our artworks and discussing and presenting the outcomes in public. They will provide a valuable external eye on the processes we undertake when evolving new practices, but also an overview of how, as a community, we understand the nuance of how interactive technologies change, evolve or limit existing artistic frameworks and practices.

We welcome you to actively participate in this ongoing discourse through the SEAM2010 blog and share your discoveries and thoughts over these two days.

This project could not have taken place without generous support from Critical Path, a small arts organisation with passionate and hard working staff. I would like to especially thank my co-curator, Margie Medlin, whose own experience with interactive systems in performance (see the Quartet Project) illustrates her passion for this enquiry. As the director of Critical Path, Margie has been instrumental in bringing together funding and fostering relationships, for instance with the Seymour Centre who are so generously co-presenting SEAM2010. The University of Western Sydney acknowledged the value of the project through an industry partnership grant which matched the funding Critical Path had raised and importantly, made the ethnographic study possible. Other contributors include the University of Technology Sydney, Arts NSW, the Australia Council for the Arts, and the City of Sydney. We also gratefully acknowledge the Performance Space who provided some of the equipment necessary when mounting an exhibition such as the one you will see in the foyer.

Please see this as the start of a journey, one in which we expect to experience many challenges and surprises, one which we hope will seed a different kind of conversation within the community of arts practitioners engaging with interactive systems, a re-focusing of the discourse and enquiry away from the active, event driven engagement with technology outlined at the beginning of this essay, towards situated awareness as a primary design imperative.

Enjoy



Dr. Garth Paine
Paper Chair and Co-Curator
SEAM 2010, Agency and Action

Day 1 - Friday October 15, 2010

8

Applying intelligence to the reflexes: instruction and influence in skillful movement	9
Liveness, Performance and the Permanent Frame	10
Thought in Action: Contemporary Dance as a Lens on Embodied Cognition	11
Capturing Stillness: visualisations of dance through motion/performance capture	12
Vessels for infinite veracity: theatre machines and the body	13
On Empathy	14
Glow	15
Keynote: Towards embodied media interaction: gesture research in performing arts	16
Keynote: Realtime and Presence - interactive performances from Experiments in Arts and Technology (E.A.T) to present works on stage.	17

Day 2 - Saturday, October 16, 2010

18

Performative Agencies: human and non-human performers	19
Entropic Forces	20
Quartet Project 2003 – 2007 epitaph or beginning	21
Cognitive Ethnography @ SEAM2010	23
Busy Hands Speaking Country	24
Reconfiguring material boundaries	25
Go figure - reconciling affect, participation and narrative in the creation of immersive experiences	26
Thinking Through the Body	27
Keynote: Split Body, Extruded Self and Circulating Flesh	28
Keynote: Networking urban screens: from display to distributed response	29

Experiential Exhibition and Interactive Installations:

30

Double Skin / Double Mind Produced by Emio Greco/PC and AHK (NL)	30
MindBox (linear) SwampSong - preview version	30
Busy Hands Speaking Country by Vicki Van Hout (AUS)	30
Articulated Head - Stelarc (AUS)	30
Sculptured Movement – Proto-type, by Holger Deuter (DE)	31
Little SIS by AH Squared - Angela Hill, Andre Hayter (AUS)	31
UNWORD by Ian Breakwell, Mike Leggett (AUS)	32
WiiMirror - Garth Paine and the Thinking Through the Body Collective (AUS)	32
Thinking Through the Body (AUS)	32

Critical Path Exhibition and Forum

33

Deconstructing Double District - Volker Kuchelmeister	33
wald forest - Christian Ziegler	33
augment_me - Brad Miller	34

Presenters Biographies

35

SYMPOSIUM_WORKSHOPS_PUBLICTALKS_PERFORMANCES_INSTALLATIONS_SCREENINGS

SEAM 2010

AGENCY AND ACTION

SEAM 2010 SYMPOSIUM @ SEYMOUR CENTRE, Cnr of City Rd & Cleveland St, Chippendale, NSW

PROGRAM SUMMARY – Please note: All program information may be subject to change.

DATE / TIME	ACTIVITY	LOCATION
Friday 15		
9.00–10.30	Registration	Foyer
9.15–10.15	Warm-up Activity (bring Yoga Mat)	Foyer
10.30–11.00	INTRODUCTION Professor John Sutton, Macquarie Centre for Cognitive Science, Macquarie University – Applying intelligence to the reflexes: Instruction and influence in skillful movement	Everest Theatre
11.00–12.30	Session 1 DIGITISED BODY: Chair, Margie Medlin, Director, Critical Path The binary body - Re-mediation of direct experience in the digital domain <ul style="list-style-type: none"> 11.00 • Mike Leggett – Liveness, Performance And The Permanent Frame 11.30 • Kate Stevens – Thought In Action: Contemporary Dance As A Lens On Cognition. 12.00 • Ruth Gibson – Capturing Stillness: Visualizations Of Dance Through Motion/Performance Capture 	Everest Theatre
12.30–2.00 BREAK	EXHIBITION All day 15 and 16 (See Exhibition List Below)	Foyer
2.00–3.30	Session 2 THE SENSORIUM: Chair, Dr Kathy Cleland, Director, Lecturer Digital Cultures, School of Letters, Art and Media, University of Sydney Immersion and embodiment – placing the body at the centre of an expanded space <ul style="list-style-type: none"> 2.00 • Nancy Mauro-Flude – Vessels For Infinite Veracity: Theatre Machines And The Body 2.30 • Lyndal Jones – On Empathy 3.00 • Gideon Obarzanek (Chunky Move) 	Everest Theatre
3.30–4.00 BREAK	EXHIBITION All day 15 and 16 (See Exhibition List Below)	Foyer
4.00–5.00	Session 3 PRESENCE: Chair, Professor Hart Cohen, Associate Head of School, Research, School of Communication Arts, University of Western Sydney Hellen Sky – <i>Darker Edge of Night: Bio-Sensing As A Performance Instrument</i>	Everest Theatre
5.00–6.00 BREAK	EXHIBITION All day 15 and 16 (See Exhibition List Below)	Foyer
6.00–7.30	Session 4 Keynote Talks - INTERACTIVE PERFORMANCE: Chair, Dr Garth Paine, Senior Lecturer in sound technologies, School of Communication Arts, Coordinator VIPRE Research Lab, University of Western Sydney A keynote session with luminary media artist and researchers from Europe's leading media art institutions <ul style="list-style-type: none"> Frederic Bevilacqua IRCAM (FR) Towards Embodied Media interaction: Gesture Research in Performing Arts Christian Ziegler ZKM (DE) Realtime And Presence: Interactive Performances From Experiments In Arts And Technology (E.A.T) To Present Works On Stage 	Everest Theatre
7.00 & 8.30	Performance: Glow by Chunky Move	York Theatre
	EXHIBITION All day 15 and 16	
	Experiential exhibition and interactive installations featuring: <i>Double Skin / Double Mind</i> Produced by Emio Greco PC and AHK (NL) <i>Mindbox</i> Christian Graupner (DE), Roberto Zappala (IT) <i>Thinking Through the Body</i> (AUS) <i>Busy Hands Speaking Country</i> Vicki Van Hout (AUS) <i>Articulated Head</i> Stelarc (AUS) <i>Sculptured Movement</i> Holger Deuter (DE) <i>AH Squared</i> Angela Hill, Andre Hayter (AUS) <i>UNWORD</i> Ian Breakwell, Mike Leggett (AUS)	Foyer



FOR FURTHER SEAM 2010 PROGRAM INFORMATION EMAIL SEAM2010@CRITICALPATH.ORG.AU OR VISIT SEAM2010.BLOGSPOT.COM
Critical Path ©2010 All Rights Reserved

SYMPOSIUM_WORKSHOPS_PUBLICTALKS_PERFORMANCES_INSTALLATIONS_SCREENINGS

SEAM 2010

AGENCY AND ACTION

SEAM 2010 SYMPOSIUM @ SEYMOUR CENTRE, Cnr of City Rd & Cleveland St, Chippendale, NSW

PROGRAM SUMMARY – Please note: All program information may be subject to change.

DATE / TIME	ACTIVITY	LOCATION
Saturday 16		
9.00–10.30	Registration	Foyer
9.15–10.15	Warm-up Activity (bring Yoga Mat)	Foyer
10.30–11.00	INTRODUCTION Kathy Cleland – Performative Agencies: Human And Non – Human Performers	Everest Theatre
11.00–12.30	Session 5 AGENCY: Chair, Lizzie Muller, Curator, Senior Lecturer, School of Design, University of Technology Sydney The Situated Body – Agency In The Extended Domain Of Interactive Systems <ul style="list-style-type: none"> • 11.00 Linda Dement, Petra Gemeinboek – PRINZGAU/podgorschek and Marion Traenkle – In Serial • 11.30 Margie Medlin, Holger Deuter, Gerald Thompson and Bianca Martin – Quartet Project • 12.30 Lars Marstaller – Cognitive Ethnography @ SEAM 2010 	Everest Theatre
12.30–2.00 BREAK	EXHIBITION All day 15 and 16 (See Exhibition List Below) Robot Camera Demonstration (1.00pm – 1.30pm)	Foyer
2.00–3.30	Session 6 DISTRIBUTED BODY: Chair, Fee Plumbley, Digital Program Officer, Australia Council for the Arts The Network As Site – Moving Beyond Duality – Performative Agencies <ul style="list-style-type: none"> • 2.00 Vicki Van Hout – Busy Hands Speaking Country • 2.30 Paul Thomas – Reconfiguring Material Boundaries • 3.00 Kate Richards – Reconciling affect, Participation and Narrative in the Creation of Immersive Experiences 	Everest Theatre
3.30–4.00 BREAK	EXHIBITION All day 15 and 16 (See Exhibition List Below)	Foyer
4.00–5.00	Session 7 THINKING THROUGH THE BODY: Chair, Professor Lyndal Jones, Professor of Contemporary Art, Media and Communication, Design & Social Context, RMIT George Khut, Lizzie Muller, Lian Loke, Somaya Langley, Garth Paine – The Thinking Through The Body Project	Everest Theatre
5.00–6.00 BREAK	EXHIBITION All day 15 and 16 (See Exhibition List Below)	Foyer
6.00–7.30	Session 8 Keynote Talks - VIRTUAL SPACE/EMBODIMENT: Chair; Professor Michael Atherton, Associate Dean, Research, College of the Arts, University of Western Sydney Here and there, the physical and virtual, the body as the “possibility of situations” <ul style="list-style-type: none"> • Stelarc – Split Body, Extruded Self and Circulating Flesh • Scott McQuire – Networking Urban Screens: From Display to Distributed Response 	Everest Theatre
7.00 & 8.30	Performance: Glow by Chunky Move	York Theatre
EXHIBITION All day 15 and 16 in Seymour Centre foyer		
	Experiential exhibition and interactive installations featuring: <i>Double Skin / Double Mind</i> Produced by Emio Greco PC and AHK (NL) <i>Mindbox</i> Christian Graupner (DE), Roberto Zappala (IT) <i>Thinking Through the Body</i> (AUS) <i>Busy Hands Speaking Country</i> Vicki Van Hout (AUS) <i>Articulated Head</i> Stelarc (AUS) <i>Sculptured Movement</i> Holger Deuter (DE) <i>AH Squared</i> Angela Hill, Andre Hayter (AUS) <i>UNWORD</i> Ian Breakwell, Mike Leggett (AUS)	Foyer

The Seymour wireless internet available for your use is 'USYD Guest'. Username and password: seymourguest

Day 1 - Friday October 15, 2010

Introduction:

John Sutton, Professor of Cognitive Science, Macquarie Centre for Cognitive Science, Macquarie University – Applying intelligence to the reflexes: Instruction and influence in skillful Movement

Session 1 DIGITISED BODY: Chair, Margie Medlin, Director, Critical Path

The binary body - Re-mediation of direct experience in the digital domain

Mike Leggett – Liveness, Performance And The Permanent Frame

Kate Stevens – Thought In Action: Contemporary Dance As A Lens On Cognition.

Ruth Gibson – Capturing Stillness: Visualizations Of Dance Through Motion/Performance Capture

Session 2 THE SENSORIUM: Chair, Kathy Cleland, Director, Lecturer Digital Cultures, School of Letters, Art and Media, University of Sydney

Immersion and embodiment – placing the body at the centre of an expanded space

Nancy Mauro-Flude – Vessels For Infinite Veracity: Theatre Machines And The Body

Lyndal Jones – On Empathy

Gideon Obarzanek (Chunky Move)

Session 3 PRESENCE: Chair, Hart Cohen, Associate Head of School, Research, School of Communication Arts University of Western Sydney

Hellen Sky – *Darker Edge of Night: Bio-Sensing As A Performance Instrument*

Session 4 Keynote INTERACTIVE PERFORMANCE: Chair, Garth Paine, Senior Lecturer in sound technologies, School of Communication Arts, Coordinator VIPRE Research Lab, University of Western Sydney

Keynote Session with luminary media artist and researchers from Europe's leading media art institutions

Frederic Bevilacqua IRCAM (FR) Towards Embodied Media interaction: Gesture Research in Performing Arts

Christian Ziegler ZKM (DE) Realtime And Presence: Interactive Performances From Experiments In Arts And Technology (E.A.T) To Present Works On Stage

Applying intelligence to the reflexes: instruction and influence in skillful movement

Doris McIlwain and John Sutton, Macquarie University john.sutton@mq.edu.au

In this initial talk we aim to share some themes and raise some questions for discussion through the symposium. We sketch some general conceptual and methodological issues around the SEAM themes, then describe some of our work on the forms and roles of instruction and influence in skilled movement. An unusual feature of embodied human social life is that we coordinate diverse bodily, affective, interpersonal, material and technological resources within rich and evolving contexts. Interactive performances and installations augment and transform such forms of somatic engagement, altering or amplifying the mediated environments we ordinarily inhabit. The SEAM projects exemplify many different forms of agency and mediation. But in many cases they are less like fixed performance art and more like the other improvisatory activities of life in that there is no single definitive version to be devised, executed, and repeated: rather, the nature of visceral and experienced agency is created and renegotiated continually on the fly, with micro-momentary responsiveness to a dynamic and shared context. The SEAM community is engaged in a multi-stranded, mixed-method enquiry into the changing nature of embodiment, performance, and reception in the real-time generation of interactive works, where the performer-audience seam is more or less porous across distinctive media and interfaces. We sketch some conceptual tools from phenomenology, cognitive ethnography, philosophy of mind, and from theories of distributed and collaborative cognition which may help our collective understanding of the puzzling processes of creating different embodied experiences.

We are particularly interested in the difficulty of shared verbal, conscious, or conceptual access to subtle kinaesthetic experience in yoga, sport, dance, and musical performance. Performers in creative disciplines trust their embodied kinaesthetic routines, and are aware that they cannot always verbalize the processes behind their actions. But they also know that true, open-ended expertise requires thought and action to come together, cooperate instead of competing. Expert performers do influence themselves, both over time and in the moment, and they remain open to the influence of others. In many culturally complex, history-dependent skills, practitioners develop richly idiosyncratic languages for sharing kinesthetic experiences beyond the easy run of everyday speech. Some overly-theorized approaches to performance run the risk of abstracting away too swiftly from the experience-near, affectively-saturated everyday work of the skilled performer. We sketch, in contrast, ways in which observers and practitioners might together access and share more of what actually happens to performers over the short and longer term, as in both skill- and project-development they direct attention to kinaesthetic cues in increasingly subtle ways. In individual and collaborative performance, the sedimented legacies of body-mind experience are all there in momentary enactments, so that embodied and affective meanings are potentially available for both performers and others to interpret and influence.

So we explore ways of theorizing yoga, for example, from the mat up. In the context of an enquiry into the flexibility of dynamic, mindful embodied action, we discuss a comparative study of Anusara and Iyengar yoga traditions. We examine ways in which skilful practitioners and instructors identify ghost gestures and signature patterns of tension, and the different more or less collaborative methods used to access, inhabit, and influence patterns of movement. Practitioners claim that yoga enhances sensitivity to bodily experience: we look for cues that most effectively achieve this. Such sensitivity makes habitual movement patterns available for renegotiation and for optimal adjustment and alignment. The Iyengar and Anusara traditions share a pose repertoire but employ very different teaching styles. Different modes of instruction affect the experience of changed access to kinaesthetic cues. We observe and record how teachers facilitate students' acquisition of movement sequences by demonstration, verbal instruction, and manual adjustment. Our talk includes examples of short filmed sequences of poses apt for instruction at different levels of expertise, examining the origin of new levels of movement precision and sensitivity to bodily cues, and the role played in this process by different kinds of verbal cues, tailored to level of expertise but often specific to a practice tradition. We examine mechanisms by which experts can redeploy embodied skills by way of diverse 'instructional nudges', from teachers, in collaborative processes, and in self-influence, which sculpt and re-set action sequences over different timescales, and we conclude by relating these lines of thought directly back to the SEAM projects.

Liveness, Performance and the Permanent Frame

Mike Leggett, Creativity & Cognition Studios, University of Technology Sydney
Mike.leggett@uts.edu.au

As Eve Kalyva has noted: *"...is there a difference, and if so what is the difference, between viewing a performance and viewing its recording? Surely there is the factor of threat and keeping it under check, for presumably one can interfere with a performance; or to put it another way, the whole point of a performance is this conditional interaction."* (2009)

Conditional interaction contests the state of the physical distance between the place of the audience and the place of the performer. The invisible fourth wall in traditions of live performance or cinema is the membrane through which the product is delivered, regardless of the state, or frame of mind, of the audience; the agency of each member of an audience in these circumstances is restricted only to removing oneself from the auditorium. However, the conditions for delivering performance-based art in the broadest cultural sense are similar to the conditions prevalent for other forms of consumption in the late-capitalist context: producers meet consumers demands and expectations but on condition the consumer respects the artist's *règle du jeu*. The arrangement is symbiotic, as by tradition it prevents confusion between the performance object and the context in which the exchange takes place.

In the Unword series of performances, (Breakwell & Leggett 1970) the rules met audience expectations for events and sounds that departed from traditions of narrative, whilst maintaining them not as participants but as spectators. The performances included the on-stage presence of the Photographer, with a film camera, recording moments from the entire event; the filmmaker was an integral part the performance, the film record being projected during and as part of subsequent performances.

During 2003 the film was digitised as a DVD complete with the recorded sound played into the performance spaces. With the liveness and the presence of the performer(s) removed, the digital reconstruction as a projection event changes the conditions of interaction and the terms of individual agency afforded the audience: the screened image can be approached and appropriated into the physical space of the viewer. The modality of encounter thus switches from one tradition to another; from that of theatre and cinema, where agency is limited, to that of the gallery, where agency in the physical act of viewing is essential.

Some associations can be drawn here with speech acts and the performative, and the Bakhtin notion of dialogue, where the conditions of communication and the choices of speakers depend on what has already been said, the conditions of the conversation (situation, purpose, etc.) and the framework within which the speaker thinks he or she will be understood.' This echoes some of Wittgenstein's 'language games' where the utterance cannot be separated from the speaker, or from the systems of meaning in which speaker and hearer are enmeshed.

Visitors to a sculpture collection at the Henry Moore Institute in Leeds do not expect to encounter the two-dimensional projected image of Unword in a space reserved for three-dimensional objects. But nonetheless what is quickly understood is the relationship between the spatiality of their act of viewing screen to viewer - and the hybrid spatiality of the images and sounds they observe. This 'social act of communication as participation and selection' (Dourish) and the performative occurs through both the advance of motion picture technologies, in this case digital video and the video projector, and the willingness of the artists and the audience to experiment with the possibilities thereby afforded.

This paper discusses film, video and photographic records of three performance events from the 1970s, of the gestural and ephemeral, choreographed into specific performance venues, but emerging today as objects of permanence in the form of DVDs and website archives. Are context, place and presence central to the experience, and what Cologni calls 'fruition', in recorded works? What part does contemporary discourse play, when works are retrieved, replayed, relived?

Thought in Action: Contemporary Dance as a Lens on Embodied Cognition

Kate Stevens, MARCS Auditory Laboratories and School of Psychology, UWS
kj.stevens@uws.edu.au <http://marcs.uws.edu.au>

Contemporary dance is a stimulating and demanding context for the investigation of human cognitive processes – attention, short- and long-term memory, imagery, non-verbal communication, creativity, and multisensory integration. In addition to dance being a testbed for investigation of fundamental assumptions about human cognition, specifically embodied cognition, it enables a seemingly seamless and shifting vantage point from choreographer to performer to observer.

In a series of studies we have investigated, documented, and analyzed some of the underlying perceptual and cognitive processes implicated in creating, performing, and watching dance. In this talk I will outline a few of these explorations. In an early study, for example, we investigated the effect of pre-performance information sessions on audience response to two different contemporary dance works. The Audience Response Tool (Glass, 2005) consists of open-ended questions to gather qualitative data and rating scale items designed to glean self-report cognitive, affective, and visceral reactions. During SEAM, the Double Skin|Double Mind installation (Greco & Scholten) develops ideas of pre-performance information into a somatic, embodied form. To complement the qualitative data from the Audience Response Tool, we developed the portable Audience Response Facility (pARF) for the recording of continuous responses from up to 20 audience members during live performance. One or two-dimensional reactions can be recorded using the pARF and analyzed subsequently using time series analysis techniques (Stevens et al. 2009).

Contrasting with explicit and direct measures of observer reaction, we have used eye movements of observers as the means to investigate implicit effects of expertise and experience on visual perception of dance (Stevens et al. 2010). As anticipated, measured eye fixation times of dance experts were significantly shorter than those of more novice observers as they watched a short dance film. Such a result accords with research into expertise in other complex domains where acquired knowledge and expectations guide visual attention and extraction of detail in relatively short periods of time. The nature of memory for movement – kinesthetic, verbal, spatial, visual – is a current focus of interest with dance and dance expertise providing insights to short- and long-term memory (Calvo-Merino et al. 2006; Opacic et al. 2009; Stevens et al. in press).

What have we learned? A good deal about cognition in dance, the challenge and importance of applying and adapting appropriate methods, and the significance of questions informed by art and artists.

References

- Calvo-Merino, B., Grèzes, J., Glaser, D. E., Passingham, R. E., & Haggard, P. (2006). Seeing or doing? Influence of visual and motor familiarity in action observation. *Current Biology*, 16, 1905-1910.
- Glass, R. (2005). The effect of information and dance experience on psychological responses to contemporary dance. In R. Grove, C. Stevens & S. McKechnie (Eds.), *Thinking in four dimensions: Creativity and cognition in contemporary Dance* (pp. 107-121). Carlton: Melbourne University Press.
- 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, 1570-1577.
- Stevens, C., Ginsborg, J., & Lester, G. Backwards and forwards in space and time: Recalling dance movement from long-term memory. *Memory Studies*, accepted, in press.
- 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, 800-813.
- 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, 19-25.

Capturing Stillness: visualisations of dance through motion/performance capture

Ruth Gibson, Artist, Igloo - Creative Fellow, Coventry University, UK
eskimos@igloo.org.uk

Dance is increasingly a site of research for experts within the discipline and beyond. With the development of digital technologies, artists and researchers are exploring new ways to engage with audiences and in so doing, to shed more light on the art form itself whilst expanding its boundaries and limitations. Building on these developments the presentation will share problems and challenges faced when motion capture technology tries to capture dance movement which emerges through somatic awareness, in particular, an established practice, Skinner Releasing Technique (SRT).

Joan Skinner who created the practice as a system of kinaesthetic training that refines the perception and performance of movements, reflects that "SRT utilises image-guided floor work to ease tension and promote an effortless kind of moving, integrated with alignment of the whole self." The technique is characterised by attention on the senses, includes concentrated periods of apparent stillness and minimal movement, including movement on the floor which is enacted through contact with a partner.

SRT advocates for a kinaesthetic experience which relates to the scientific notion that we are, ultimately, a psychophysical system of energies; an energy system within the larger energy systems of the universe. SRT is not a generic releasing technique, but by employing particular poetic imagery, goes beyond body tissues and accesses the subconscious to explore the unexplored in individual movement creation. The imagery cited in the pedagogy alludes to the natural world and spontaneous movement is evoked through sensory imaginings. SRT accesses what is to occur and what has not yet happened and draws upon concepts such as *constant becoming, just being, in flux, emptiness, nothingness* and *dynamic stillness* facilitating *expression, freedom, nuance* and the *potential for change*. The practice promotes the idea that nothing is fixed, allowing a creative exploration of technical principles such as *multi-directional alignment, suppleness, suspension, economy and autonomy*.

The presentation will focus on the early stages of a research project that seeks to visualise SRT through motion capture. The principal aims are to generate new visualisations based on the capture of SRT that emphasise *stillness, interiority* and close contact with the floor; to encourage critical engagement with this practice; to expand the possibilities of motion capture technology (hardware and software); to enhance audience kinaesthetic engagement within interactive virtual performance environments. This concentrated study on how the sensing body can interact with motion capture will enable researchers and dancers to understand more about how immersive environments affect user, viewer engagement; revealing more about somatic movement practices, and enhancing kinaesthetic awareness and engagement.

The exploration of the interface between motion capture technology and SRT opens up a quite different set of questions about the relationship between motion capture, movement tracking and the dancing body. During the presentation examples of 3D interactive artworks with motion captured dance will be shown. Some of the questions that will be referenced include:

a) How can the collective experience of SRT movement practice, which generates impulses, dynamics and contact (physical and sensory) between dancers, generate realtime motion capture in relation to pre-recorded motion capture, to mirror the immediacy of the dancers' experience in the studio? **b)** Can motion capture techniques map SRT in a way that facilitates an examination of how notions of embodiment are read, visualised and transmitted? **c)** Can avatar behaviour generated from SRT, provide additional insights into stillness and first-person sensorial experience? **d)** How might digitally produced bodies for immersive virtual environments provide new viewing experiences? **e)** What new experiences for viewers, and or users, can be generated by developing visualisations based on SRT for use in interactive, immersive virtual environments? **f)** What impact do these art events have on the viewer's, and or user's own embodied experience? **g)** How might the transformation of the dancing body into virtual environments retain or retell something of corporeality?

Vessels for infinite veracity: theatre machines and the body

Nancy Mauro-Flude, Lecturer, PhD candidate - Tasmanian School of Art, Uni. of Tasmania
Marcia.MauroFlude@utas.edu.au

'Error in Time()' is a performance not about identity, but identity theft.

The performer sits at the computer – enters into her daily routine. She engages with a dimensional model of file architecture, she leaks, each program she uses is bound up within the other. Regular expressions seem to transcend most kinds of simple breakdown. She finds herself returning to the same place, slowly she delves deeper into the possibilities. Specific tasks and commands seem more like membranes, defining a surface of metamorphosis and exchange.

In a playful, speculative and performative manner, this presentation points to the current renaissance of low-tech analog media and engages with computer hacker culture. While it speaks of human form, that is ephemeral, not concrete and never quite what we think, it asks what this means for daily modes of engagement and embodiment with an electronic medium. It is not pointing to cybernetics, or anthropomorphism, but the everyday silent conversation that we carry on when viewing and perceiving with our proprioceptive facilities, a continuous isokinetic dialogue, for instance, when the hand readily navigates the space between the fingers and the keys on the computer.

The complexities of culture and place shape the individual, the ongoing interchange between the body and the entities that surround it can be seen as a form of an expanded software script. Both the internal patterns and habitus which illuminate the body's lived experience and the designs of information systems are, to a large extent, shaped by cultural, political and economic interests. The choice of encoding tool and interface are intrinsic to any platform and always give rise to new situations. Specifically, I am interested in not only how the media themselves are designed, but what options are available for redesigning - or rethinking them.

Transferring information into systems and managing machine language communication is a learnt practice and ritual that one has to monitor, just as there are idiokinetic techniques that are often used for longevity and kinetic practices used to imagine ones own self, as a vessel of infinite veracity. I reflect upon the internal micro choices and actions our automated nervous system performs every moment of our living existence, which forms a large part of learning a new set of movements, tools or even machine operations.

Recent developments in virtual world simulation and high-definition industry standards, for the most part, conjure up a strange sort of vanity based on form and surface, which becomes more and more removed from embodied human complexity. It requires virtually no interaction or maintenance from the user. Linda Dement (2001) once wrote, 'Levels of intimacy with the bleak, sexual and violent content are kept safe by the technological media: the flesh is not really flesh: it is pixels and so can be touched. Unless the work is touched, nothing happens.'

Objects, props and machines have long been emblematic of deception, trickery, charlatanism and healing (often combined) in many cultures. In his discussions upon *Machine as spectacle*, Lazardzig (2007) confirms this curious and potent potential for theatrical machines. He recounts a comment by Leibniz from the 1600s, where Leibniz wonders if cheats should be allowed into theaters. Finally he comes to the conclusion that gambling must remain the nucleus of the entire project, because in play even deception entails a healing effect. "Games would provide the best excuse in the world to begin such a useful thing for the public, since one needs to fool people, to profit from their weakness and to deceive in order to heal. There is nothing better than using machines for introducing wisdom. This truly means miscere utile dulci and to make medicine from poison" (2007:172).

We experience our world as fabric woven together out of inextricable sensory threads, not as individual sensory media, nor as individual data. Whatever account we give of mediation and immediacy we not only must take this synaesthetic motif and context into consideration, but also begin with and from it.

On Empathy

Professor Lyndal Jones, School of Media and Communication, RMIT University
lyndal.jones@rmit.edu.au

We speak of empathy with another as seeing the world 'through their eyes' or of being 'in their shoes'. And these metaphors themselves place us physiologically as one with that person.

In a discussion of the neurological patterns that underly empathy through a study of the imitation patterns of babies, Andrew N Meltzoff and Jean Decety argue that *"The human capacity to recognize the bodily feelings of another is related to one's imitative capacities, and seems to be grounded in the innate capacity to associate the bodily movements and facial expressions one sees in another with the proprioceptive feelings of producing those corresponding movements or expressions oneself. Humans also seem to make the same immediate connection between the tone of voice and other vocal expressions and inner feeling."* (2003).

The acclaimed American medical hypnotherapist Milton Erickson is reputed to have developed an extraordinary ability to put his patients into trance to alleviate their psychological suffering. While his method overtly utilized irrational shifts between deep and surface structures in the language he used this was underpinned by 'mirroring' not only their movements (the physical organization/movement of their limbs, their orientation, their weight placement) but also their breathing, skin tone, even the degree of pupil dilation of their eyes... His extraordinary success lay in his ability to present them back to themselves, not as a representation but as an experience through time. They knew themselves to be completely understood at a physiological level.

There is a very rough version of this technique used as an improvisation exercise in introductory drama classes to train acuteness in observation and responsiveness between performers. In this exercise two people face each other. One begins by carrying out a simple series of movements, the other copying the whole movement as simultaneously and exactly as possible. The aim is not to trick the respondent but for both people to aim for accuracy. To succeed, the performers both need to shift from central eye focus to peripheral focus (to see the whole of the other person in movement). They also need to find and attend to the other's physiological limitations and even their very rhythm of movement. After a while it often becomes unclear, even to the participants, who is leading whom. The degree of focus required is total, leading to a sense of 'oneness' at the physiological level, particularly as skill develops.

From the virtuosic use of 'mirroring' that Erickson is reputed to have employed to the first year drama/dance student earnestly following their partner what is required is total responsivity at the physiological level that we understand as empathy.

As a way to address empathy itself, this presentation will therefore address this 'mirroring' ability that humans have. It will provide a brief background of developments in neurological studies with babies and a personal view of the work on 'affect' (emotion as felt) as developed by the Deuluzian scholar Brian Massumi.

The presentation will then explore the ways in which (the need for) empathy and engagement could be seen to be at the centre of current art practices that now seek to actively engage audiences. Finally, it will touch on what might be seen to be the limitations of the current focus on an instrumental use of art particularly at the community/public art levels.

References

Meltzoff, A.N., & Decety, J. (2003). What imitation tells us about social cognition: A rapprochement between developmental psychology and cognitive neuroscience. *The Philosophical Transactions of the Royal Society, London*, 358, 491-500.

¹ The terminology here comes from Richard Bandler and John Grinder's analysis of Erickson's method, *The Structure of Magic*, Volume I (1975), where they discussed his work in terms of Noam Chomsky's 'deep structures' in grammar.

² This form of improvisation is so widespread, with so many variations, there is no specific reference that will help to identify its source.

Glow

Gideon Obarzanek, Artistic Director, Choreographer, Chunky Move
gideon@chunkymove.com.au

When I look back over the work I have made in the last five or six years, I can see two main areas of interest.

The first is my engagement with technology to create imagistic works that look at how we perceive our own bodies and the space around us. I use technology to create impressions of other layers we cannot see but which we feel or know to exist. My work with Frieder Weiss creates a sense of things that emanate from and surround the body or are connected to it. These are not narrative works. Combined with the movement and composition, the technology becomes an integral part of the aesthetic and kinaesthetic stimulus experienced by the viewers.

The second strand of work is completely different. Productions like *Tense Dave* and *Two Faced Bastard* are about human behaviour and how people get along together, or don't. In both these works I am dealing with people trying to connect to one another, often with limited success. This sense of aloneness is common to both strands of my work.

I love formal works that deal with bodies as kinetic and spatial compositional shapes in space, but I tend to undermine myself when I try to make formal work. To me, bodies in space very quickly reveal themselves as people in a situation, or in a relationship of some sort. People on stage cannot be absolutely abstract. My dilemma with this inherent flux of the human figure in dance as both a shape and a person is both a weakness and a strength. On the one hand I cannot achieve the abstraction I am interested in seeing on stage, but on the other I am making work with which audiences identify because there are recognizable people with character and feelings.

My initial interest in working with video projection was as a source of lighting. While creating *Glow* and certainly later in *Mortal Engine*, it has become much more sophisticated and layered than I had originally anticipated, however this simple idea of seeing everything through the light of generated video is still very much at the core of both works.

In my work with Frieder, the dancer does not consciously interact with the system. They are not an instrumentalist playing the machine and responding to feedback. Rather, the dancers manifest their own world and the projected images through which we see them are an aesthetic and kinetic extension of that world. As images and light literally appear to emanate out from within the body and into the open space there is a powerful sense of unseen internal things revealing themselves.

The various relationships between the system and the dancer can best be summarised in four different ways. The first is as an extension of the dancer in both shape and movement. Here light and image appears to be coming out from within the dancer as a part of them and extends into the greater space. The second is to contain the dancer - images exist outside the dancer and are drawn to them as a type of foreign containment. The third is when the dancer and image almost become one, like a type of camouflage where the two appear indivisible, becoming a single entity. And the last is semi-autonomy where the image is obviously created or is related to the dancer but then also exhibits other behaviours of its own. These can be seen as initial shadows deciding to do other things or particles created by the dancers movements then changing kinetic behaviour according to independent laws or stimulus. This last one is usually a little spooky as it suggests another life or free will in the system, a kind of ghost in the machine.

Working with this technology my choreography has focused less on theatrical work with characters and real-life situations, and more on abstract and imagistic ideas where the human body is often distorting into less familiar shapes and the environment it inhabits is of an imaginary place.

Keynote: Towards embodied media interaction: gesture research in performing arts

Frédéric Bevilacqua, IRCAM- Centre Pompidou, Paris

Frederic.Bevilacqua@ircam.fr

Gesture interaction with digital media has become widely spread, from experimental performing arts to video games. It appears therefore necessary to examine these practices from different points of view and historical perspectives. First, we should acknowledge that many concepts in gesture-controlled media have been proposed and experimented with for decades. Nevertheless, there is now a converging interest in gesture research within the disciplines of, dance, music, engineering and cognitive sciences.

Furthermore, we would like to argue arts practices engaged with interactive systems have moved away from experimenting with technology to more fundamental questions such as expressivity, embodiment, gesture and movement representation. Related questions concern notion of learning, transmission and pedagogy, an area where new scientific perspectives on embodied cognition and technical advances in artificial intelligence, constantly develop new gesture-sound interaction paradigms.

IRCAM has developed various methods and tools for computer-based gesture analysis, with the general goal to use body movements to interact with sonic and/or visual environments. This research has largely been influenced by sustained collaborations with musicians/composers and dancers/choreographers. We will present some of these works, focusing on gesture research and interfaces. In particular, we will present the cases of musical interfaces and various experiments we have been carried on in music pedagogy. We will also present dance performances and interactive installations we have collaborated on.

In music, we studied physical gestures of musicians such as the bow movement of violin players. This allowed us to formalize key concepts about continuous gesture control, gesture vocabulary and co-articulation (similarly to speech production). This fundamental research led us to design augmented instruments, incorporating these challenging concepts. In parallel, we are designing new interfaces and paradigms to control sonic environments, individually or collectively. In particular, we are developing tools to re-perform sound and music with such interfaces. Actually, this leads us to experiment and question how to design gestures for sound control, or in other words, how to embody existing musical content?

In dance, we will present performances and installations, where we used the same technologies discussed above relating to music. While designed with different goals and aesthetics, two of them use a similar interaction principle: the visitor is invited to dance, imitating or mirroring dance material displayed on a large screen. This brings us back to opening questions in relation to musical interfaces: how can we learn gestures when integrated with digital media, affects our gesture-sound perception?

Keynote: Realtime and Presence - interactive performances from Experiments in Arts and Technology (E.A.T) to present works on stage.

Chris Ziegler, Associate Artist ZKM Karlsruhe / Germany
cz@movingimages.de

I would like to introduce you to my work on stage by inviting you to a quick journey to the roots of media performances. First follow me to trace my own roots: After the first *Dance and Technology Conference* was held 1999 in Arizona I participated, at Arizona State University (ASU) in Phoenix, in the workshops *Cellbytes* (2000) and *Bodysense* I and II (2001/2003). We started developing work, based on digital technology, using high-speed internet technologies to connect two stages by streaming web technology.

I created *scanned V* with Todd Ingalls, a composer from ASU in 2001, we met at *Cellbytes* and dancer and choreographer Jayachandran Palazhy, whom I met one year before. *scanned V* was a hybrid, organized in two parts: the first part was realtime dance and presence technologies, using tracking and videosensor technologies, whilst the second part was a VJ event - *scanned V* was a successive transformation and mapping process.

The next piece was supposed to be realtime, bringing distributed presences into a single virtual concert or jam session. A MIDI network was used to create an interdisciplinary performance environment, dance to sound to image. *turned* (2004) was first performed in Munich during the DANCE2004 festival.

Now, let's turn away from my own works to focus on the history of such work. Such a timeline begins with Loie Fuller (1862 - 1928) - a dancer from New York, known for dancing with long sticks in costumes, extending the border of her moving body, experimenting with new materials to create very long floating costumes, colored lights, slide projectors and reflective material. Henri de Toulouse-Lautrec was inspired by her and painted her, when she passed through Paris.

The Dadaists, Futurists and later FLUXUS artists created performances, questioning traditional forms of theater and representation. The audience was encouraged to leave their seats, interaction was introduced into the arts well before it became a technical term.

Experiment in the Arts and Technologies (E.A.T.) occurred in New York in 1966. Ten New York artists worked with thirty engineers and scientists from the world renowned Bell Telephone Laboratories to create groundbreaking performances that incorporated new technology. They performed at the Armory Hall, a former Army depot, to create the famous series of exhibitions and performances, titled *9 evenings*.

In the late 1980's and early 1990's, the Japanese collective, *dumb type* came to stages in the USA and Europe with their work *PH 1991*. People hadn't seen anything like the work of *dumb type* previously; The combined dance, performance, video projection, sound and installation within a single work.

The American company, *Troika Ranch*, founded by Mark Coniglio and Dawn Stopiello developed a MIDI suit for their work *in Plane* (1994) - creating the moving body as an musical instrument.

After creating *scanned* and *turned*, I questioned the way my images were related to the moving body on stage, which inspired the development of *wald - forest* (2005) and *forest 2* (2007 - 2009), a matrix of light objects, filling the stage space, creating a walk - in - screen. My latest work *mission impossible 1862* is my first text based theater work, both, an interactive film, 4 channel video installation and a performance with actors. The same environment is used for exhibition and for performance.

Developing modes of interaction that are realtime and present, creates a dialogue between audience and the work on stage. Interactive projects on stage come necessarily into place with an interdisciplinary context. Interdisciplinary is creation while learning - something I will contribute to SEAM2010 through the *wald - forest* workshop!

The Seymour wireless internet available for your use is 'USYD Guest'. Username and password: seymourguest

Day 2 - Saturday, October 16, 2010

INTRODUCTION

Dr. Kathy Cleland – Performative Agencies: Human And Non – Human Performers

Session 5 AGENCY: Chair, Lizzie Muller, Curator, Senior Lecturer, School of Design, UTS
The Situated Body – Agency In The Extended Domain Of Interactive Systems

Petra Gemeinboek, Linda Dement – PRINZGAU/podgorschek and Marion Traenkle – In Serial
Margie Medlin, Holger Deuter, Gerald Thompson and Bianca Martin – Quartet Project
Lars Marstaller – Cognitive Ethnography @ SEAM 2010

Session 6 DISTRIBUTED BODY: Chair, Fee Plumbley, Digital Program Officer, Australia Council
for the Arts - *The Network As Site – Moving Beyond Duality – Performative Agencies*

Vicki Van Hout – Busy Hands Speaking Country
Paul Thomas – Reconfiguring Material Boundaries
Kate Richards – Go Figure, Reconciling affect, Participation and Narrative in the Creation of
Immersive Experiences

Session 7 THINKING THROUGH THE BODY: Chair, Lyndal Jones, Professor of Contemporary
Art, Media and Communication, Design & Social Context, RMIT

George Khut, Lizzie Muller, Lian Loke, Somaya Langley, Maggie Slatery, Garth Paine – *The
Thinking Through The Body Project*

Session 8 Keynote Talks - VIRTUAL SPACE/EMBODIMENT: Chair, Michael Atherton, Associate
Dean, Research, Professor of Music, College of the Arts, University of Western Sydney

Here and there, the physical and virtual, the body as the “possibility of situations”

Stelarc – Split Body, Extruded Self and Circulating Flesh

Scott McQuire – Networking Urban Screens: From Display to Distributed Response

Performative Agencies: human and non-human performers

Dr Kathy Cleland, Director, Digital Cultures Program, The University of Sydney
kathy.cleland@sydney.edu.au

New digital media technologies have opened up new possibilities for performance and performance relationships between human and non-human performers. This paper looks at the different modalities, agencies and relationships across the spectrum of human to non-human performers including: Human, Human-mediated through video projections (live or delayed), Human-machine (cyborg relations, e.g. virtual avatar or robotic extension), Quasi-human, Non-human

The emergence of new types of non-human and quasi-human performers raises interesting questions for human performers and for audiences. How do cybernetic systems distribute control and agency between human and non-human performers? Who controls who? How do human performers and audiences perceive agency (understood as a capacity to act in the world, to act independently and to make their own free choices) in these different human and non-human performers?

Don Ihde's 'phenomenology of technics' where he categorises human-technology relations in terms of embodiment relations, hermeneutic relations and alterity relations provides a useful analytical framework for investigating the ways performers and audience perceive and relate to technological performers and performative environments.

- Embodiment relations: (I+technology) - World
- Hermeneutic relations: I (technology+world)
- Alterity relations: technology-as-other (borrowing from Levinas' concept of alterity from Totality and Infinity as 'radical difference' that is not reducible to the human.

However, as this paper will demonstrate, distinctions between these different human and non-human performative categories are very fluid. In interactive digital systems the integration of sensing technologies, digital animation and automated artificial intelligence programming can be used to bring images and robots to life as quasi-autonomous agents and interlocutors investing them with high levels of agency and responsiveness. There may also be complex cybernetic connections between human and non-human performers in mixed reality performance environments.

Performance relations between human and non-human performers include various types of imitation, mirroring and mimicry as well as various forms of transformations (translations). Are the machines mimicking us or are we mimicking them? Are machines becoming more human-like, or are we becoming more machine-like? In Deleuzo-Guattarian terms we could describe this as a sharing of qualities and affects between human and non-human performers, (e.g. becoming-human, becoming-animal, becoming machine). We can also view these different types of mirroring and mimicry as efforts towards empathy, understanding, learning (skills acquisition) and communicative dialogue. One of the key ways that infants learn is through mimicry and repetition and physical mimicry of sounds, gestures and movement are key both to skill acquisition and empathetic communication (i.e. literally putting ourselves in the position of the other, feeling and experiencing what they feel).

Similarly, audiences perceive and judge agency based on observed actions and imagined (projected) motivations of human and non-human performers. Quasi-human and non-human performers may be perceived as having more agency, freedom and autonomy than human performers performing 'automated' machine-like movements.

These ideas will be explored by looking at a number of case studies drawn from the visual and performing arts.

Entropic Forces

Petra Gemeinboeck (College of Fine Arts, UNSW) petra.ge@gmail.com on behalf of In Serial (Linda Dement (AU), Petra Gemeinboeck (AT/AU), PRINZGAU/podgorschek (AT) and Marion Traenkle (DE/NL))

The artist group In Serial will present a practice that explores different material agencies and experiments with a choreography fostering 'entropic forces'. The performative installation practice of In Serial is not interactive in the sense that it involves audiences, nor does it involve human performers; and yet situatedness, interaction, the embodiment of agency, and the potential for new transversal relations to emerge are at the very heart of the work and its interdisciplinary process of making.

The messy, smelly, performance of *On Track* emerges from the interactions and interferences between a mechanical mop, a troupe of robotic brushes and spilling viscous fluids. A disaster-prone scenario unfolds as the protagonists—apparently set to clean—spill, interrupt and hinder each other, creating an ever more slippery mess in intricately choreographed ways. The unusual mix of approaches and materials that characterise this works poetically messy articulation results of the coming together of four artists from different backgrounds. In Serial combines experimental architecture, dance & choreography, digital media, experimental film, and interactive installation, with a motivation to challenge common notions of the digital medium through foregrounding situatedness, materiality, and performative potentials.

Our presentation will focus on two criteria of *On Track*'s performance: agency as an emergent enactment and what Daniel Stern calls "affective attunement". According to Karen Barad, "agency is a matter of intra-acting: it is an enactment, not something that someone or something has" (1999:7). In *On Track*, where interactions between agents (whether machinic or fluid-goo) are partly choreographed and preprogrammed and partly emergent from the interferences between agents themselves. Agency is not only enacted, but also emerges from an increasingly undeterminable interplay between different rhythms and material forces. As the system's entropy increases, the agency of its interlinked agents does not decrease or disintegrate but rather undergoes transformation. The notion of "affective attunement" as discussed by Brian Massumi (2008) offers a way to look at the choreographic instructions, apparently hindered by the different material capacities, and the resulting interruptive commotion as an emergent collective choreographic event.

The ongoing collision of the choreographed and the emergent, propel the work's uncertain course of relation-making. It is where the programmed and choreographed meet the messy and unknown, that "other ways of knowing" (Maharaj, 2002) can unfold: where movements deviate, stutter and synchronization slips, and the fluids coagulate. The work thus promotes a view in which what constitutes reality and the world is not pre-determined but rather is, and has to be, enacted and actively performed over and over again. Such a world is "continually transformed through our history of interactions with it" (Salter, 2010:xxvii). *On Track* performs the issues that it seeks to critique rather than representing them. Rather than being representational, according to Irit Rogoff, "[p]erformance comes into its own in the name of an unease, in the arena of a promise of something that is yet to come, yet to be articulated and of agency yet to be recognized, yet to be named" (1998).

References

- Barad, Karen. 'Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter.' *Signs: Journal of Women in Culture and Society* 23.1 (2003).
- Maharaj, Sarat. 'Xeno-Epistemics: Makeshift Kit for Sounding Visual Art as Knowledge Production and the Retinal Regimes', Okwui Enwezor et al (eds.), *Documenta XI Platform 5* (Ostfildern: Hatje Cantz, 2002).
- Massumi, Brian. 'Of Microperception and Micropolitics', *Inflexions* 3 (August 2008).
- Rogoff, Irit. 'How to Dress for an Exhibition', M. Hannulan (ed.), *Stopping the Process? Contemporary View on Art and Exhibition* (Helsinki: Nordic Institute for Contemporary Art, 1998).
- Salter, Chris. *Entangled: Technology and the Transformation of Performance* (Massachusetts, London: The MIT Press, 2010).

Quartet Project 2003 – 2007 epitaph or beginning

Margie Medlin, Director, Critical Path, Sydney

director@criticalpath.org.au

Quartet was a collaborative project that produced two performance systems to create a real-time exploration that played across the senses of the human body.

The systems demonstrated communication within and between bodies in real-time by creating relationships between music, the gesture of musical performance, dance, robotics and animation.

The Quartet Project premiered at The Great Hall at St Bartholomew's Hospital, London. February 2007. Informed by new scientific research in the field of physiology, the quartet project presented a live multi-media event at the culmination of several years, collaborative research. The project intertwined many research interests but was essentially an investigation into the kineasthetics of music: determining movements that produce sounds (in this case with the violinist, Stevie Wishart), which were used to produce new choreographies.

Specialists from dance, music, biomedical and computer science, 3D animation and motion control used cutting edge technology to experiment with the ephemeral nature of real-time art. Virtual, mechanical and live elements come together at St. Bartholomew's, creating new choreographies from sensory data. Three leading choreographers - Lea Anderson, Russell Maliphant and Lisa Nelson each shaped sections of the performance.

Quartet's central figure, a virtual dancer, was an avatar of sensual information, playing between its manifestation and its puppeteers. On stage the interactions between the performers slip through different pairings, trios, and quartets, such as the musician using the speed or acceleration of her violin playing, to duet with the real dancer; or a trio between the real and virtual dancers and the robot camera, exploring the choreography of cinematic space: the poetics of looking and moving, and interplay that exposes the tensions within the re-mediation of data.

The performance aimed to explore relationships between embodiment, agency and action. As we developed the systems for the project, we evaluated the research through the artists experience of the seam between their actions, their experience of the interface and the creative output. We continually worked to increase the artists ability to use the systems as creative tools, to make the connections between human action and virtual dancer intelligible for the artists and the audience. At the time of the performance the evaluation of the systems was based on the audience's perceptions of the real-time relationships taking place.

In the Distributed Body panel Margie Medlin, Holger Deuter and Gerald Thompson will discuss their philosophies in developing the motion capture and motion control systems for the Quartet project. Bianca Martin will join the three original project developers to talk about her current research with one the systems.

Bianca Martin, Choreographer, Dancer, Company Upstairs

boogrrl@hotmail.com

A robot with a camera as its head surveys a dancer. Through real time motion sensors strapped to her body, the dancer controls the robot's actions. The machine can rotate with the movement of her torso or bend with the movement of her knee. With this control, the dancer makes the robot examine people, actions and interactions whereupon it begins to assume its own agency and autonomy. It has its own character even though the dancer gives it life and personality through movement.

By using the robot and its camera as an extension of the body, the body's dance is reassigned. Only the essence of human movement is translated through the robot. The dancers articulation is visible in her movement, but the movement comes across differently on the robot. It becomes a transferred dance where the robot, with a different kind of agility, dances its own version of the same dance.

The dancer continues to have a muscular control to her movements. An end point to moving a limb, which can be softened or sharpened, where as the robot comes to a point that is set. It mechanically bounces back, or pauses at its range of movement. There is no decision to be made, but a simple translation of the dancers movements.

The dancer is able to make quick changes of movement, decisions of quality, and in real time the robot follows. It does not lead its own movement but does what the dancer does, in its own way. This can extend the dancers movement, and through the camera, extend the dancers focus. The camera enables the dancer to move their body to look at things. A lean forwards with the torso means the camera can focus on what is on the ground. A lean to the side with the torso changes the focus of the camera again, but also enforces the autonomy of the robot camera by developing its character.

The dancer, skilled at controlling every movement of her limbs, now also controls another entity and what it sees. Her physical capabilities are stretched by this but are also enhanced by the prosthetics of the robot, adding multiple meanings and new dramaturgies to every scene they co-perform.

The robot looks at what the dancer directs it to, but independently the camera records. The human who gave it power, is no longer entirely in control of what it does as it surveys the dancer, the audience, anything it is directed to. Recording much more than a human ever could, it keeps a constant eye on things.

The Robot's 'eye' suggests an area of social commentary that the general public too often ignore: surveillance. In actuality, we can be watched several times a day. While inner city areas are the most likely places we are filmed, surf cameras may also catch us in our bikinis and stream this directly online.

Does a body, conscious of being watched over a long period, move in the same way? Or does it forget it is being watched, much like our own psyche? Does our movement quality also become apathetic, to the recording of our every move?

This presentation for SEAM is derived from research and development of a new dance-theatre performance that explores and problematises how, where and when both human and camera eyes look and record, and the ambiguity of this watchfulness under the guise of our 'safety'.

Cognitive Ethnography @ SEAM2010

Lars Marstaller, PhD candidate, Macquarie Centre for Cognitive Science, Macquarie Uni.
lmartal@maccs.mq.edu.au <http://sites.google.com/site/larsmarstaller/>

This paper presents the cognitive ethnographic study I am currently undertaking in the context of SEAM 2010. I was invited by Margie Medlin, Garth Paine and John Sutton to attend the workshops and events of SEAM 2010 and perform a study in cognitive ethnography. Cognitive ethnography is concerned with how members of a community use the available resources to create meaning or solve problems. I see the participants of SEAM 2010 as such a community because despite the variety in background they are united by an interest in exploring “the notion of performance embodied in a myriad of forms made available through the most current technological advances” (<http://seam2010.blogspot.com/p/about-seam2010.html>).

Cognitive ethnography is a method of analyzing cognitive phenomena at the micro-level based on an understanding of the practices of community members. In order to achieve such an understanding, I am collecting materials such as video recordings of the workshops and interviews as well as field notes concerning my experiences and observations. From this material, I select and analyze shorter events or interactions that exemplify a particular practice of meaning-creation or problem solution.

The interest in such practices stems from a perspective in cognitive science that has been variously labeled, embodied, extended or distributed cognition. What these approaches share is an emphasis on the role of the body and the environment in cognition. Instead of seeing the cognitive system as an abstract computer realized by the human brain, they view cognitive processes as being mainly directed at controlling the body for action in a changing environment that has been shaped by other humans in order to make cognition easier (reminiscent of Bruce Sterling’s slogan for interaction design: “don’t make me think”, see <http://rhizohm.net/irhetoric/post/2008/04/25/0a-Bruce-Sterling-on-Interaction-Design0a-.aspx>). The shaping of the environment includes the technological augmentation of the body (Clark’s “natural born cyborgs”) as well as the organization of a group into a single cognitive system. These theoretical views blur the boundaries between mind, body, world, and other, while at the same time opening up opportunities for scientifically exploring new configurations of cognitive systems and related concepts such as agency.

These kinds of research opportunities do not lend themselves well to classical laboratory experiments but demand investigations of the phenomena in situ. Cognitive ethnography is one of the main tools of such an approach.

In my talk I will therefore give an overview of the methods and aims of cognitive ethnography. Then I will present some video clips and interviews to highlight some emerging topics / preliminary findings from my study on the “the relationship between performer and audience and how notions of agency, embodiment and mediation are altered by interactive technologies” (<http://seam2010.blogspot.com/p/about-seam2010.html>).

Busy Hands Speaking Country

Vicki Van Hout, choreographer
vik_vh@bigpond.com

As a former student and graduate of NAISDA Dance College (National Aboriginal/Islander Skills Development Assoc) Vicki was afforded the privilege of learning several mainland Aboriginal and Torres Strait Islander dances. Over 20yrs later, while auditing a class at Sydney University titled 'The Yolngu Way' led by Dr Aaron Corn focussing on trade corridors and reciprocal/demand sharing, she was inspired to make a work based on the significance of painting in Aboriginal cultural practice. Joe Neparrnga Gumbulla was demonstrating a dance from a painting he was looking at. From the angle of the diamond shapes he was able to ascertain the stance of the body and to whom the painting belonged. He referred to the diamond shape as 'likaan' meaning- elbow. It was one of those corny moments when a light bulb goes off. She was hooked. Dance took on a whole new significance. She was inspired to focus her research on this direct relationship to painting.

Vicki will speak about her time in residence at Critical Path, jointly funded by the City of Sydney, working with Imogen Cranna; new media artist, Marion Abboud; visual/video artist, and dancers Raghav Handa and Henrietta Baird. Vicki focussed on incorporating movement generated sequences, captured by several video cameras and later manipulated by the Isadora program to create electronic live sound and visual scores, inspired by the importance and intrinsically linked nature of cultural expression, including song, painting and storytelling.

Armed with several security cameras, hand-helds and an ipod, a big ladder, lots of ochre, tape and flour, one big and one mini hand-held projector (weak and useless), three computers and lots of cabling Vicki shot sequences from various angles, both indoors and outdoors under controlled lighting circumstances; of dance sequences, inanimate objects and shimmering waves, at varying speeds, while stationary and hurtling down William street on her pushbike. Vicki and Henrietta made ochre stencils, chewed twigs, painted straight lines, peeled taped lines from bodies with projected images; on the floor uncovered, covered with white sheeting, covered in flour, on the concrete, on the bitumen (very unsuccessfully) on the walls, on the net server near the bathroom. Manipulations by Imogen and Isadora occurring as the result of stillness, at the sound of slapping and burning up to a bright shimmer with movement of increasing speed.

Does it matter if the connection to the traditional form is only tangible in the artist/creators mind? Is the premise enough? Is it enough that the prime motivator is indigenous? Can the end result be appreciated as an abstract work of art reflective of a special spatial relationship to country, to several countries at once, to songlines, to ancestral knowledge, to the everywhen, to the dreamtime? How to do this and not be overly didactic? How to create a decent image while being honest to the restrictions/process- which was predominately live and interactive? Many an argument was made in the face of an aesthetically displeasing end result that looked like a 'bad version of something achieved in the 80's' (Marion Abboud). These were some of the questions posed during and as the result of the residency.

Reconfiguring material boundaries

Paul Thomas, College of Fine Art, University of New South Wales.

p.thomas@unsw.edu.au

The sixteen people around you in a rolling motor bus are in turn and at the same time one, ten, four, three; they are motionless and they change places; they come and go, bound into the street, are suddenly swallowed up by the sunshine, then come back and sit before you, like persistent symbols of universal vibration. (Boccioni, 1973)

In this presentation I want to explore a historical and contemporary understanding of the body brought to us via nanotechnological research. As the awareness of the immateriality of matter is extended through our conscious understanding, the world becomes deterritorialized and we become molecularized: 'a molecular population, a people of oscillators as so many forces of interaction' (Deleuze, 1987. p 345).

The construction of a molecularized society of interactions shifts the boundary of what we see as the autonomy of life and the boundary of the physical body. Through this Deleuzian understanding of matter humans are no longer seen as autonomous individuals, a living body. We are a 'people of oscillators' that are held together by forces, attractions, rhythm and pattern. There needs to be a shift in our conscious understanding of what constitutes material boundaries, territories and dimensions. Nanotechnology research forces us to reflect and reconfigure our perception of self as vital matter in relationship to all other material and immaterial things, including thought.

The exploration of the shifts will be explored via presenting the research of two of my nano art projects; Midas and Nanoessence. These projects examine spatial boundaries, dimensions and life at a sub-cellular level, within the human context. The humanistic discourse concerning life is now being challenged by nanotechnological research that brings into question concepts of what constitutes living. The Midas and Nanoessence installations are based on data gathered as part of a residency at SymbioticA, Centre of Excellence in Biological Arts, University of Western Australia and the Nanochemistry Research Institute, (NRI) Curtin University of Technology.

The nanoart project Midas (2007) uses the skin cell as a visual metaphor for exploring the deterritorialised and reterritorialised nanobiological body. In the installation semi autonomous self-organizing nanobots affect the Atomic Force Microscopes (AFM) imaging of the skin cell transmuting it into gold. The Midas project examined what is transferred when skin touched gold. The installation consisted of a data projection and audio work. The recorded sets of data from the AFM in force spectroscopy and contact mode were processed through software applications, translating the relevant information into sound and image files.

The Nanoessence (2009) project constructs a physical experience to examine this scientific and metaphysical world. A single HaCat skin cell is analysed with an AFM to explore comparisons between, life and death at a nano level. Nanoessence is an interactive audio-visual installation. In the Nanoessence installation the viewer will interface with the visual and sonic presentation through his or her own breath. The project attempts to maintain a high quality of authentic research to engage the viewer in a sensorial qualitative experience of quantitative data.

The desires for Midas and the Nanoessence project are to confront our phenomenological understanding of infinite smallness and create a psychological shift in the viewers' consciousness understanding of matter.

Go figure - reconciling affect, participation and narrative in the creation of immersive experiences

Kate Richards, media artist; PhD candidate EMPA UNSW, Coordinator Masters of Convergent Media, UWS. kate.richards@bigpond.com

Sectors of the contemporary media arts and performance communities are increasingly concerned with creating affective, participatory experiences for audiences. My practice-led research focus is on praxis with a dominant imperative towards the visceral and immersive, yet narrative is almost inevitably a guest. Such art practices are framed by theories of affective affordance, experience design and participatory design; they are mirrored by trends in entertainment industries such as theme parks and casinos.

When William James argued that we run from a bear then we feel afraid, rather than we know we feel afraid, and then we run, he proposed the sequence of feeling/emotion ('What is an emotion?', 1884). When Deleuze and Guattari philosophised that our embodied consciousness is an integral part of a porous, boundary-shifting rhizome, they succinctly evoked contemporary communications and neuro-biological models ('A Thousand Plateaus: Capitalism and Schizophrenia', 1987). When Brian Massumi contextualised experiments in neuro-psychology within artistic and philosophic discourses, signification as the dominant driver of consciousness was laid to rest ('Parables for the Virtual: Movement, Affect, Sensation', 2002).

These key moments reflect movements away from the domination of western culture by signification, content and moderately shifting meaning. Today artists and performance makers are creating opportunities for audiences to engage with spaces and embodiment, processes and systems - in short affective, porous experiences that touch us pre-cognitively before signification is brought into play. The event-space is often mobile, and it aims to be a constituent and affective space for creating new relations. As Andrew Murphie explains it, agency can now be understood as a process of "participation and becoming" ('Inflexions', vol 1, 2008) rather than a simple facility, a calling and an inclination to act.

Specifically, I am exploring what forms of affect, experience and participation might facilitate and precipitate an "abstract [yet] experiential knowing of material" (Margie Medlin and Garth Paine, SEAM Conference, 2010). Looking at the implications for practitioners and audiences, I ask what creative strategies are needed to reconcile a purely affective experience for the audience, with participation, narrative and cognition.

I outline some key issues for artists and performance makers when developing, creating and producing projects that centrally position affective experience and embodied intensity. How can we reconcile these focuses with audience participation, agency and control? What strategies have been devised and which are effective for enabling an open creative process that can account for and incorporate interactive technologies and employ them to interrogate and transform audiences' expectations and understanding of agency and control, embodiment and intellect? How can we evolve and utilise an aesthetics based on the relations and experiences that emerge from the process of collective creation rather than the content of the artistic composition, as proposed by Stevphen Shukaitis ('Affective Composition and Aesthetics: On Dissolving the Audience and Facilitating the Mob' - online Journal of Aesthetics and Protest). How does participation occur, both at an organisational level and on an affective level? What is the role of an affective and experiential aesthetics in today's overtly politicised climate?

I address these questions by positing a theoretical matrix comprised of the most relevant aspects of the philosophies of affect, radical empiricism and embodied cognition. Inspired and informed by the writings of Brian Massumi on affect, Stevphen Shukaitis on affective composition, Matthew Fuller and Andrew Murphie on radical empiricism, Hakim Bey on immediatism and Isabel Spengler on aesthetics, and informed by my own extensive experience in new media creation, I use this matrix to examine some local and international examples from the arts and entertainment industries vis a vis their strategies and effectiveness in achieving an outcome of affect and immersion for their audiences. Through these illustrative examples, I examine how these practices are evolving and engaging with the current trope.

Thinking Through the Body

George Khut (georgekhut@gmail.com) (Director), Lizzie Muller (Facilitator- Curator), and participants Jonathan Duckworth, Somaya Langley, Lian Loke, Garth Paine, Maggie Slattery and Catherine Truman.

Thinking Through The Body is an interdisciplinary research project exploring the use and potential of movement, touch and proprioception in body-focussed interactive art and design. Weaving together approaches from interactive art, design and the Feldenkrais Method of movement education, the team has developed a collection of processes for paying attention to body experience. In this panel six members from the Thinking Through The Body research group present insights gained over the course of their collaboration.

The potential for sensor-based interactive technologies to support new forms of body-focused experience has been an ongoing strand of research in interactive arts practice. Body-focused interfaces can provide a framework for directing our attention inwards—temporarily reframing our experience of our own (physiological) embodiment by revealing otherwise hidden or overlooked aspects of our being (brainwaves, heart rate, muscle tone, etc.) as modulations in audio-visual media compositions. By making visible the physiological dimensions of our being in this way, these experiences invite us to consider the various bodily contingencies that support our capacity to be in the world.

In the Thinking Through the Body research process we have tried to make the body itself the central focus of our investigations. With our attention turned inwards, the proximal modalities of touch, movement, balance and proprioception have offered us rich terrain for experimentation and the creation of new work. Throughout the process we have asked the question: What could an aesthetics of touch, movement, balance and proprioception in interactive art be? How can we move beyond the transgressive thrill of simply making/experiencing something that includes the sense of touch to the cultivation of an aesthetic experience that unfolds through these intimate modalities?

Somatic bodywork methodologies such as the Feldenkrais Method provide highly developed frameworks for attending to these very phenomena. Thinking Through The Body explores the profound connections between interactive art and Feldenkrais in the way that they frame experience, and invite reflection.

In our presentation at SEAM we will discuss some key discoveries that have emerged from our research process. These include: the relationship between active and passive interactions; the aesthetic power of drawing attention to subtle shifts in perception and sensation in interactive art and the generative capacity of focusing attention on the minutiae of physical experience to produce profound and memorable artworks. The presentation will inter-weave discussions of the outcomes of the project with reflections on our discoveries from Maggie Slattery, one of the Feldenkrais practitioners within the group.

<http://thinkingthroughthebody.net/>

Keynote: Split Body, Extruded Self and Circulating Flesh

STELARC, Chair In Performance Art, Brunel Uni., Senior Research Fellow, MARCS Auditory Labs, UWS
stelarc@va.com.au

From A Second Life To A Third Life - The body now performs beyond the boundaries of its skin and beyond the local space it inhabits. Immersed in its media and powered by its machines, the body's identity is not determined by its appearance or location but rather by its interface and its connectivity. What is important is not where the body is located but whether the body is on-line. Plugged-in, the body becomes a *parasite* sustained by an external nervous system. The body is not identified or experienced through its presence but its absence. If the body recedes it does so not because of the irrelevance of the physical but through becoming massively embodied in a techno-apparatus and a complicity with code. The body is now a fluid and *floating signifier* whose meaning is unstable, being constantly recoded and reconfigured. The body becomes simultaneously a *Zombie* and a *Cyborg*, it performs involuntarily whilst becoming increasingly automated. Rather than seeing the body as augmented and extended by its instruments, the body itself now becomes a prosthesis to enable its avatars, an inverse motion capture system. What is needed is not a *Second Life* but rather a *Third Life* where avatars actuate surrogate bodies, where embodied artificial agents proliferate and become more animated, operational and interactive - a *Phantom Flesh*.

Extrusions and Emptiness - As surface, skin was once the beginning of the world and simultaneously the boundary of the self. But now stretched, pierced and penetrated by technology, the skin is no longer the smooth and sensuous surface of a site or a screen, it no longer signifies closure. The body is experienced as hollow with no meaningful distinctions between public, private and physiological spaces. The *hollow body* becomes a *host*, not for a self but for technology. As interface, the skin is obsolete, the significance of the cyber may well reside in the act of the body shedding its skin. Subjectively, the body experiences itself as a more extruded system, rather than an enclosed structure, the self becomes situated beyond the skin. This radical *emptiness* is not brought about through a lack but from the *extrusion* and *extension* of its capabilities; its new sensory antennae that generates abstract information and its increasingly remote functioning. The body experiences its actuality neither all-present-in-this-body, nor all-present-in-that-body, but partly-here and projected-partly-there. An operational system of spatially distributed but electronically interfaced bodies and bits of bodies ebbing and flowing in awareness, augmented by alien agency - a kind of *Fractal Flesh*.

Split Body: Voltage In / Voltage Out - The problem is no longer possessing a split personality, but rather a *split physicality*. In our Platonic, Cartesian and Freudian pasts this might have been considered pathological whilst in our Foucauldian present we focus on coercion and control of the body. In the terrain of cyber complexity, the inadequacy and the *obsolescence* of the ego-agent driven biological body, could not be more apparent. A transition from psycho-body to cyber system becomes necessary to function effectively and intuitively in remote spaces, speeded-up situations and complex technological terrains. Can a human body cope with the experience of extreme absence and alien action without becoming overcome by outmoded metaphysical fears and obsessions of individuality and free agency? The Split Body is both a *possessed* and *performing* body.

The Cadaver, The Comatose and the Chimera - Flesh is circulating. The body is composed of the organs of the other, the face, the hands, the heart of the other. Dead bodies need not decompose, or die. This is an age of excess and indifference, *Of Printed Flesh*. Organs will be printed, they will be in excess, there will be *organs without and awaiting bodies*. There is now a proliferation of biocompatible components that allow technological implants. Hydraulic hearts circulate blood without beating. Ova are fertilized by once frozen sperm. Female skin cells can be re-engineered into sperm cells. The face of a donor becomes a *third face* on the recipient. Limbs from a dead body are attached and reanimated on a living body. Cadavers can be preserved with plastination whilst comatose bodies can be sustained indefinitely on life-support systems. Cryogenically suspended bodies await reanimation at some imagined future. The dead, the near-dead, and the yet to be born now exist simultaneously. The chimera is the recombinant body that performs with mixed realities. Meat, meshed with metal, managing data streams in virtual systems.

Keynote: Networking urban screens: from display to distributed response

Scott Mcguire, Ass. Professor and Reader, School of Culture and Communication, Uni. of Melbourne,
mcquire@unimelb.edu.au

As contemporary cities become media intensive environments, it is important to re-examine our understanding of the dynamics of public space. When the city becomes a media-architecture complex, public space is increasingly produced through performative practices involving novel dispositions of bodies and technologies. The shift from media to geomedia is marked by the pervasiveness of media platforms circulating through urban space coupled to increasing use of context aware applications. Geomedia now support a range of distinctive public behaviour, from different modes of navigating space using geotagged data to the dynamic self-organisation of crowds based on distributed and recursive 'real time' feedback.

Large video screens situated in public space offer a strategic site for exploring this transformation of the conditions of urban life. Urban screens stand at the nexus of two distinct concepts of the 'public sphere': the traditional concept of an embodied gathering in a single shared space such as a square, plaza or agora; and the modern concept of gathering at-a-distance in the shared time enabled by electronic media such as television. However, where television viewers usually remain physically isolated in their own homes, the recent shift of large screens from the living room to the street has created a new context for public communication. As large screens become an increasingly important and visible dimension of public space, it is critical they be opened to a wider range of content than their staple diet of advertising and sport.

In this presentation I will discuss recent research into the deployment of interactive applications for public screens. Drawing on several projects, including Good Morning Mr. Orwell (an event organised by Art Center Nabi in August 2009 which linked screens in Seoul and Melbourne), I will highlight the potential for urban screens to move beyond 'ambient television to support innovative forms of collective interaction in public space. By enabling novel forms of collective performance in relation to the screen, these projects can assume a strategic role in the context of global media culture. They not only allow exploration of the new conditions of embodied experience in a context in which complex socio-technical networks have become integral to everyday social interaction, but point towards a new understanding of the 'public sphere'. By facilitating communication between contingent strangers who share a single public space, while simultaneously linking them to others in another city, networked urban screens can foster the construction of something like an experimental 'transnational public sphere'. This cannot be understood in terms of simple oppositions between the local and the global, but contributes to a new understanding of the local as open or unbounded, and the global as comprised of specific instantiations of places, networks and bodies.

Future plans in this research include the development of body-based interfaces for networked urban screens. If urban screens become platform supporting new practices of art and communication, they might yet play a role in addressing the paralysis of ambient fear which as characterized so much post-9/11 public culture.

Experiential Exhibition and Interactive Installations:

Double Skin / Double Mind Produced by Emio Greco|PC and AHK (NL)

Working with Emio Greco|PC, the Double Skin/Double Mind workshop installation will be installed as a pre-performance experience at the Seymour Centre during SEAM. Associate Professor Kate Stevens, has made an open invitation asking the general public to participate in an experiment that investigates pre-performance activity and information on response to dance. Participation will take around 30 minutes and involve interacting with an enclosed projection of sections of the Double Skin/Double Mind workshop DVD. This will be followed up with some questions during and after the performance of GLOW. Pooled and de-identified results of this experiment, will be published in conference and journal form.

MindBox (linear) SwampSong - preview version

With the audio-visual triptych MindBox, Christian Graupner and partners create an audience reactive installation that leans, in form, toward the paradigm of a slot machine. The work attracts the visitors' senses offering a joyful gambling- game around musical, choreographic and cinematographic elements as dance and beat-boxing. The latter expression describes a form of vocal percussion from which the installation derives its title. MindBox is a triple-channel 'media catapult' to be touched. The arm and buttons of a modified fruit machine function as a tactile interface to the actions of a filmed character whose vocal and movement clusters can be re-composed and re-performed by the audience.

MindBox Creators: **Christian Graupner** (GER) Humatic, media artist, director, composer; **Roberto Zappalà** (I) performer, choreographer; **Norbert Schnell** (F) IRCAM Centre Pompidou, interactive music and sound design; **Nils Peters**, (GER) Humatic, system developer and software artist. MindBox is produced by Humatic Berlin in co-operation with TMA; Hellerau & Compagnia Zappalà Danza. The MindBox technology is based on HUMAsystem and the FTM & Co libraries for Max/MSP. <http://mindbox.humatic.net/>

Busy Hands Speaking Country by Vicki Van Hout (AUS)

The documentary video 'Busy Hands Speaking Country' follows a research residency at Critical Path, funded in conjunction with the City of Sydney in early 2010, aiming to explore methods of utilising new media technologies using traditional Aboriginal painting techniques and symbolism as a premise for creating material for several performative outcomes, including a new contemporary dance theatre work and an outdoor video projected installation. Working with Imogen Cranna, new media artist, Marion Abboud, and dancers Raghav Handa and Henrietta Baird, Vicki Van Hout concentrated on movement generated sequences. These were captured by several video cameras and manipulated by the Isadora program to create live interactive sound and visual scores. This was to emulate the importance and intrinsically linked nature of cultural expression to social custom, including song, painting and storytelling, land and lore.

Articulated Head - Stelarc (AUS)

The Articulated Head is a robotic embodiment of Stelarc's earlier Prosthetic Head. The Articulated Head features a 6 DoF robot arm with the embodied conversational agent having real-time interactivity made possible with its sound location and visual tracking capabilities and its attention model. The Articulated Head is part of the Thinking Head project, a 5-year research project led by the MARCS Auditory Labs, UWS. The Thinking Head project is one of the three Thinking Systems Initiatives, jointly funded by the Australian Research Council (ARC) and the Australian National Health and Medical Research Council (NHMRC).

Sculptured Movement – Proto-type, by Holger Deuter (DE)

The main concept behind this work is to create a stereoscopic immersion into dance, time and space.

With digital technologies it is possible to show the movement of a virtual body, stretched out over a certain amount of time, to transform it into a time-object. The idea results from stereoscopic experiments with an exaggerated 3D-Motion-Blur. Motion-Blur is normally an optical 2D-effect determined by the camera or the eye position. Motion-Blur compensates for a lack of frames-per-second, in reality only viewed in very fast movements (helicopter, flying insects etc.). It shows the directions of movement from the past to the present and it is a sign of movement over time that has process-character.

Sculptured Movement creates a 3-dimensional object that can be explored by a camera over time, so the viewer gets the impression of a moving sculpture that represents the time-process. In this version, the projection shows the view of the head-mounted-display.

In performance, a passive audience can watch the real dance and the stereoscopic voyage (polarized glasses) of the head-mounted-display-user in sync. Surround-sound will be controlled by the movement of the dancer (e.g. rotation), and the light-positions will be influenced by the sound, so the shadows on/of the object will change and move in an intuitive way.

At the SEAM 2010 Holger is presenting a preview (film) that shows the stereoscopic exploration of the head-mounted-display -user, how it might look, once the tools are developed.

Little SIS by AH Squared - Angela Hill, Andre Hayter (AUS)

AH Squared is a collaboration of interactive multimedia performance between musician/digital media artist, Andre Hayter and performer/choreographer Angela Hill. Since 2002 we have collaborated on several original pieces including works using various motion and pressure triggered sound. Our latest project has been supported by research and development residencies with Critical Path and Ausdance NSW. AH Squared seeks to create immersive environments that accessibly engage participants in their perceptual senses and personal stories, encouraging movement and relationships at the intersection of technology and embodiment.

Little SIS works as a social interaction system, encouraging movement and changing spatial relationships as participants are tracked with a video camera and the data is translated in real-time (via Processing and open source software) into algorithmically generated sound (phonemes and vocal harmonics) and visuals (what we like to call silhouette blobs).

Little SIS is a social performance space acting as host for communal movement in the mediation of performer and observer. Spontaneous movement scores demonstrate spatial harmonics and emergent behaviour in the engagement with the "other" – space, gravity, technology, audio-visual stimulus/response and most importantly, other humans. The effect is mutual witnessing in the relationship of a shared space and responsive environment that demonstrates how we learn through our relationships and we relate through movement.

Little SIS – she's with you...

This room is ideal for about 3-4 participants at a time. Systems are self organising, so we trust that this will work out organically. Feel free to come and go, interact in the space and observe (from outside through the windows is best) as you please...

People relate through movement and we learn through our relationships. Go ahead and move like no one is watching. Except you're not alone...

Another integral component of the installation which encourages user involvement is an interactive website which allows the audience to create sounds for the installation either from home or while they are on site. The current test page for this is located at www.ahsquared.com/synth/audiogen.html

UNWORD by Ian Breakwell, Mike Leggett (AUS)

Unword 1969-70, 16mm film, b&w, sound, 47 mins; digitally reconstructed to DVD 2003, now shown as a single-screen installation. (Collection of the Henry Moore Institute, Leeds City Art Gallery)

Based on performances by Ian Breakwell which took place in London, Bristol and Swansea, Unword is an amalgam of text, performance, sculpture, sound and projection. The series of Unword mixed-media performances during 1969-70 incorporated the simultaneous visual recording of each event as part of the performance by Mike Leggett. The subsequently processed film footage would become part of the multi-projection elements of the next Unword performance, which would also be filmed, processed, and then projected in the next performance, and so on. The projection of the footage was on a Spectro stop frame analysis projector, (a scientific examination tool), running at 2 frames per second. The scarcity of such projectors meant that the Unword stop frame film which Mike Leggett edited after the end of the series of performances, could only occasionally be shown together with a soundtrack on tape compiled from the original tapes of language lessons and eyesight tests plus voice-over narrations by Ian Breakwell used in the original Unword performances.

In 2003 Mike Leggett and Ian Breakwell digitally reconstructed the Unword film at 2 frames per second, with a married soundtrack of the compilation tape.

WiiMirror - Garth Paine and the Thinking Through the Body Collective (AUS)

WiiMirror is a simple installation which challenges two people to synchronise their movements based purely on the audio feedback they receive through headphones. As their movements grow closer the feedback reduces to the point of total silence, but once their movements diverge the feedback increases. Art is all about paying attention to experiences and reflecting on them, and this project mirrors this. What does it feel like to move with another person in this way? How can simple, sonically-mediated gestural interactions constitute a form of empathic touch or mirroring? The best way to find out is to take part in the project yourself.

The WiiMirror project forms part of the Thinking Through the Body research project, which brought together art, design and bodywork practitioners to explore new approaches in contemporary art practice, influenced by the movement re-education practice, the Feldenkrais Method.

Thinking Through the Body (AUS)

Thinking Through The Body is an interdisciplinary research project exploring the use and potential of movement, touch and proprioception in body-focussed interactive art and design. For 14 days between July 2008 and July 2009, eight practitioners working across the disciplines of art, design and somatic bodywork came together over the course of three intense workshop-events to discuss and explore new approaches to 'the body' in contemporary art practice – with a special focus on the phenomenology of body-focused interactive experiences in art and somatic bodywork. Developed in response to a call from the Australia Council for the Arts, Inter-Arts Office, for open-ended 'blue sky', interdisciplinary research and development projects (Art Lab), our aim has been to create a laboratory for the creation of hybrid practice-based research drawing together interactive art, somatic bodywork and experiential aesthetics. At the final ArtLab-funded workshop at Performance Space (Sydney, July 2009) we presented a collection of interactive art experiences (The Sensorium Gymnasium) – devised as offerings to an invited audience. These prototype artworks and the collaborative processes used to devise them, provide the foundation for our continuing explorations. The website documents some of the work undertaken during this 12 month period, along with artworks, projects and workshops that we have developed since July 2009. The original research team (2008-2009) was: George Khut (Director), Lizzie Muller (Facilitator- Curator), and participants Jonathan Duckworth, Somaya Langley, Lian Loke, Garth Paine, Maggie Slattery and Catherine Truman. <http://thinkingthroughthebody.net/>

Critical Path Exhibition and Forum

Saturday 30 October to Sunday 31 October, 2010 Time: 2pm to 5pm, Critical Path, Rushcutters Bay

2-5pm Exhibition

wald forest Christian Ziegler (DE)

Double District Volker Kucheimeister (DE), a collaboration between iCinema and Saburo Teshigawara

augment_me Brad Miller (AUS)

Public Forum

Sunday 31, 2-5pm - Public Forum with Brad Miller, Volker Kucheimeister and Christian Ziegler

In addition, a showing from the workshop "Choreographing within an interactive media environment" will be presented.

Deconstructing Double District - Volker Kuchelmeister

Deconstructing Double District based on the multi channel stereoscopic video installation Double District (2008) with dancer/choreographer Saburo Teshigawara, this work explores a process of deconstruction and subsequent remodelling of a dancer's body in motion. The result is a fragmentation of the body into discrete volumes which are visualised within a computer graphic application. By doing so it is possible to bypass the point-of-view restriction of traditional video/film recording, space and linear time become variable properties and multi-dimensional visualisation becomes reality. In this project this process is utilised to create an abstract representation and depiction of the dance performance in form of an interactive installation and a filmic work. http://www.kuchelmeister.net/prj_voxel.html

wald forest - Christian Ziegler

Chris Ziegler a media artist based at the ZKM centre for art and media in Karlsruhe, has created a media installation with his piece wald - forest that uses these ambivalences and invites the visitor to take part in an interactive light and sound environment. The forest is architecture as well as an organism. Beyond civilization, it is an ambivalent place, setting both fantasies and anxieties free. Whereas the black forest - where Chris Ziegler was born - is dark, this forest emits light. His media space functions as a performance environment where dance, light and electronic sounds are interwoven in constantly changing constellations. In an interactive sound architecture, composed by Sandeep Bhagwati, the visitor of "wald - forest" remixes a piano piece according to position and movement speed. Finally the space becomes a walk - in instrument, where the user generates and interacts with the forest's sounds and light traces. <http://www.movingimages.de>

wald - forest provides 9 sound-areas between the lamps. Changing position from one field to another changes a 4 channel mix between two stereo-sounds. "Stele VII" a music piece of Sandeep Bhagwati's composition "Inside a Native Land", Piano by Ernst Surberg which is mixed to sound recording from the Shivaji Park in Bombay. The visitors mix ambient noises, voices of people and traffic noise of the city to the composed piano piece. On top of this mix, the intensity of the visitors movements reveals a third sound, a rhythm track, which is the opening music motive in "Stele VII".

augment_me - Brad Miller

Augment: To increase the size or value of something by adding something to it. (Oxford Dictionary)

augment_me is a responsive visual database; a memory machine of sorts but a live and developing one. The images constituting the database are a sequence of photographs and videos, collected over the past 8 years and tracks my relationships with people, things, places, scenarios. They are sequentially embedded with contextual associations arranged (initially) by time and date. This, combined with being able to access and make those images move, appear and disappear – by anyone or anything within view of the camera/sensor in the space where the installation is exhibited, makes manifest the metaphor of memory. Eight years ago, I bought a cheap digital stills camera on my way to China in 2000 for a brief trip. I took photos as an outsider, of what, to me, was a foreign environment. When I returned to Sydney, I continued taking photos but they were relatively unconsidered. What I mean by *unconsidered* is that I took them as most people, not artists necessarily, take a photo – to record a moment, a person, a thing, a place. Moreover, I had no intention to use these images as art. In that way, I described them as found images because despite taking the photographs, the context in which they were ultimately used was other than what was intended. The *unconsidered* aspect seems to have changed over time, with other influences on the image taking and collecting. I soon began to take my camera everywhere with me and took photos. As they accumulated, I reflected on the material I had already taken and certain patterns/themes began to emerge – architectural details, the state of my bed, signage, faces, abandoned urban spaces, gaps between buildings, friends and lovers, landscape, social events. As well, I bought a new camera and new lenses. This, and the continuing development of the work (*augment_me*) altered the way I took photos. As they accumulated, and were organized, they triggered associations and meanings, which the individual photo did not. They also functioned as a reminder of things, people, places, I would never remember. The work became a database of memories. *augment_me* uses a granular synthesis system - a basic sound synthesis method that operates on the micro sound time scale and uses sound samples thus creating a live soundscape. With the movement of visitors, the system is responsive to motion via a video camera and used to subtly change, influence, affect, the movement of the images. The motion also affects the dynamics (eg loudness, volume and frequency) in the audio. <http://www.staff.cofa.unsw.edu.au/~bradmiller> - *augment_me* was made possible by the generous support of the VACB and the Music Board of the Australia Council. Creative Collaborators: Programmer: Adam Hinshaw, Composer: Ian Andrews, Producer: Kate Richards.

Presenters Biographies

Bevilacqua - Frédéric Bevilacqua is the leader of the Real Time Musical Interactions team at IRCAM - Institute for Music/Acoustic Research and Coordination in Paris. In 1991 he obtained a degree in physics and then in 1998, a Ph.D. in Biomedical Optics from the Ecole Polytechnique Fédérale de Lausanne (Swiss Federal Institute of Technology in Lausanne). He also studied music at the Berkley College of Music in Boston (1992-1993) and has participated in different music and media arts projects. From 1999 to 2003 he conducted research at the Beckman Laser Institute at the University of California Irvine. Since October 2003 he has been in charge of research on gesture analysis at IRCAM as a member of the Real-time Musical Interactions Team, and with the Performing Arts Technology Research Team. <http://www.ircam.fr/>

Breakwell - Ian Breakwell's video works were described by Will Self as being "subtle enactments of an individual praxis that compel our attention, again and again, to the uneasy comity of lived life." Working prolifically, and across a remarkable range of media, including performance, film, and television, his work is characterised by its wit, humour, and poignancy.

Cleland - Kathy Cleland is a curator, writer and lecturer specialising in new media art and digital culture. She is Director of the Digital Cultures Program at The University of Sydney, an innovative cross-disciplinary program that critically investigates the social and cultural impacts of new digital media technologies. Her curatorial projects include the Cyber Cultures exhibition series which toured to over 20 venues in Australia and New Zealand from 2000 – 2003, the Mirror States exhibition (2008) at MIC Toi Rerehiko, Auckland, NZ and Campbelltown Arts Centre, Sydney, and Face to Face: portraiture in a digital age for d/Lux/MediaArts, a digital portraiture exhibition currently touring Australia and Asia (2008-2011). Kathy is a founding member of a new research initiative set up by the Digital Cultures Program and the Social Robotics Centre in the Centre for Field Robotics at the University of Sydney, and her current area of research is the investigation of audience responses to robotic and screen-based entities. www.kathycleland.com

Dement - In Serial - Linda Dement is a Sydney based artist who has worked in arts computing since 1989 with a background in photography, film, and video. Her interactive and still image work has been widely exhibited internationally and locally, including at the Institute of Contemporary Art in London, Ars Electronica in Austria, the International Symposia of Electronic Art in Sydney and Montreal and the Impakt Media Arts Festival Netherlands and Transmediale Berlin. She is twice winner of the Australian National Digital Art Award and has been awarded a New Media Arts Fellowship by the Australia Council for the Arts. <http://www.lindadement.com>

Deuter - Holger Deuter is a creative artist, working in film, digital animation, interdisciplinary art-projects. He has a diploma in communications-design from the university of applied sciences in wiesbaden and a professorship at the university of applied sciences in kaiserslautern in virtual design. His three main areas of work are as 3d-artist and designer, creative developer based on experience with realtime-technologies and in relational concepts of audiovisual interaction based on his experience as instrumental soloist in audio-productions. Holger is currently working on his new project, quartet. <http://www.dna-3d.de/>

Gemeinboek - In Serial - Petra Gemeinboeck's practice crosses the fields of architecture, interactive installation, mobile media, robotics, and visual culture. In her current research, Petra explores the potential of robotic intervention as an investigative lens into the politics of surveillance by deploying autonomous robots, embedded into the architectural fabric of a gallery. She is a founding member of the international artist group In Serial, working with performative assemblages of choreographed robots and chemical fluids. Previously, Petra has developed immersive virtual spaces that experimented with feminist and postcolonial concepts of the body. Her locative and sensor-based interactive works explored the paradoxical ground common to both intervention and surveillance. Her works implicate participants in negotiation scenarios in which they are challenged to face, conspire with or perhaps even solicit a machine-generated co-performer. They have been exhibited internationally at venues including Archilab (FR), Ars Electronica (AT), Gallery Fabrica (UK), ICC Tokyo (JP), MCA Chicago (IL, USA), and the Thessaloniki Biennale (GR)

Gibson - Ruth Gibson graduated from University of Kent Canterbury with a BA (Hons) in Performing Arts. She studied with the Marcel Marceau Group whilst on a scholarship at the University of Michigan, Ann Arbor and Ypsilanti USA and continued her education at the School for New Dance Development in Amsterdam. Nominated for a Paul Hamlyn Award for Visual Art in 2000, she has worked with many artists including Sandra Fisher, Gary Rowe, Leonard McComb RA and Gaby Agis. Based in London, she works with Bruno Martelli as igloo with international artists, including John McCormick and Adam Nash. Their practice is multifaceted ranging through installation, intervention, virtualisation, film and performance drawing on the multiple layers of reality and unreality. Much of their work is in recreating environments and systems where coding joins hands with choreographies of the body. Ruth is an AHRC Fellow in the Creative and Performing Arts at Coventry University's School of Art and Design, her project is supported by Goldsmiths, Vicon, Motek & Animazoo and her visit to Australia through a Lisa Ullmann Scholarship. Recent group and solo exhibitions include: 52nd Venice Biennale, James Taylor/Fieldgate Gallery, London, Sara Meltzer Gallery, New York, V22 Gallery, London, Around the Coyote Gallery, Chicago. <http://www.igloo.org.uk/>

Graupner - Christian Graupner is a Berlin based artist, film composer, guest artist at ZKM Karlsruhe and the creator and developer of real-time media playback systems. His wide ranging earlier works were made up of drawings, paintings and experimental electronic music, mostly published on records, CDs as well as in movies and radio plays under the pseudonym VOOV. Lately he has developed a series of reactive media installations in which characters appear significantly in the foreground. With his works such as '2Lives Left' and newest projects 'MindBox' and 'Don't Dance', he is keeping alive his conceptual platform 'Automatic Clubbing'. In 2000 he formed the independent artist group and production company Humatic Ltd. together with Nils Peters with whom he develops software tools for artists working in a variety of media forms <http://mindbox.humatic.net/>

Hayter/Hill - AH Squared is a collaboration of interactive multimedia performance between performer/choreographer Angela Hill, and musician/multimedia artist, Andre Hayter. In our work together, we are seeking to create immersive environments that engage participants in their perceptual senses and personal stories, encouraging movement and relationships at the intersection of technology and embodiment.

Jones - Lyndal Jones has had a long and successful career at the forefront of video and performance art in Australia and internationally. She uses personal stories and memories to explore desire, attraction and sexual selection in a celebrated practice that has seen her represent Australia at the 2001 Venice Biennale, and show her work at numerous galleries here and overseas. A pioneer of new media, video and performance art in Australia, Jones has produced a massive body of work since the early 1980s, and is known for creating long-term projects which initially focused on performance then video installation. Throughout, her works have addressed the power of the experiential and the development of interactivity.

Khut - George Poonkhin Khut holds a Doctorate of Creative Arts from the University of Western Sydney, Australia – for his research into the development and evaluation of participant-centred biofeedback artworks, and is currently a casual tutor in interaction design at University of Technology Sydney, Faculty of Design, Architecture & Building. He completed his undergraduate studies in Sculpture at the University of Tasmania in 1994, where he studied across studios from painting and sculpture to ceramics, video and electronic music. George has exhibited his work across Australia, the UK and Asia. Recent projects include Cardiomorphologies, The Heart Library Project (recently exhibited at St. Vincent's Public Hospital, Sydney), and Thinking Through The Body (<http://thinkingthroughthebody.net>) an interdisciplinary, collaborative research group exploring the use of somatic bodywork methodologies and human-centred design as frameworks for body-focused interactive art. <http://georgekhut.com/>

Kuchelmeister - Volker Kuchelmeister established the renowned Multimedia Lab at the ZKM Centre for Art and Media Karlsruhe in 1996 and published in its six years of existence numerous award winning books, interactive CDs and DVD-ROMs. He relocated to Sydney in 2002 to join the UNSW iCinema Centre for Interactive Cinema Research. His research focus and artistic practice spans across immersive visualisation, cinematography, interface design, global capture and

imaging systems and new media in the performing arts. His projects have been shown in museums, galleries and festivals around the world (ZKM Karlsruhe, Centre de Georges Pompidou, Powerhouse Museum Sydney, Volcan Scène Nationale du Havre, eArts Festival Shanghai 2008,). Throughout his career Mr Kuchelmeister worked closely with renowned performing artists like William Forsythe, Robert Lepage, The Wooster Group NYC, Mansaku & Mansai Nomura, and Saburo Teshigawara. <http://www.kuchelmeister.net/>

Langley - TTB - Somaya Langley has a background in sound/media arts and digital libraries/archiving. Both her professional and artistic interests lie somewhere in the realm between ideas, information, technology, socio-politics, communities and empowerment. Somaya has worked in the fields of online delivery and digital preservation for the [Australian Music Centre](#) and the [National Library of Australia](#), which included the projects [MusicAustralia](#) and the Library's [Digital Collections](#). She was Production Manager of the [International Society of Contemporary Music 2010 World New Music Days](#) festival and was a Co-Director of the 2008 and 2009 [Electrofringe](#) festivals. In 2009 she was Co-Curator of [Transit Lounge](#), a partner project of [transmediale](#). Her work has been presented and performed in conferences and festivals throughout Australia and internationally including and from 1997 to 2007 she presented a radio programme, [SubSequence](#), broadcast in Canberra and across the Australian on the [Community Radio Network](#). Somaya's arts practice focuses on embodied and immersive experiences mediated by technology, to initiate socio-political dialogue. This has included, [ID-i/o](#) (a live solo audiovisual sensor-performance endeavour), the [Suspect Backpack](#) (a wearable mobile intervention), and [Mobile Patters](#) (a wearable audio experience). Collaborative installation and performance projects over the past decade include [Collars](#) with media artist Alexandra Gillespie, [MetaSense](#) with sound technologist Nick Mariette and [HyperSense Complex](#) with Dr. Alistair Riddell and Simon Burton. Somaya was also a member of the research project [Thinking Through the Body](#), initiated by George Khut and Lizzie Muller along with Jonathan Duckworth, Lian Loke, Garth Paine, Maggie Slattery and Catherine Truman.

Leggett - Mike Leggett has been working across the institutions of art, education, cinema and television with media since the early-70s. He has film and video work in archives and collections in Europe, Australia, North and South America and practices professionally as an artist, researcher, curator, writer and teacher. He has a MFA (interactive multimedia) from the University of New South Wales and a PhD, (hypervideo and mnemonics), from the University of Technology Sydney. Mike has curated exhibitions of interactive multimedia for the Museum of Contemporary Art in Sydney (Burning the Interface<International Artists' CD-ROM> also in Brisbane, Perth, Adelaide and Melbourne); the 1996 Brisbane International Film Festival; the 5th International Documentary Conference; and Videotage Festival of Video Art, Hong Kong. He contributes to journals (Leonardo; Continuum), magazines (World Art), online 'zines (FineArt Forum), and is a correspondent for the contemporary arts newspaper RealTime.

Loke - TTB - Dr Loke is a Senior Lecturer in the School of Software, FEIT and an Early Career Researcher in the IDHuP lab and the research centre for Human Centred Technology Design (HCTD). Her research is interdisciplinary and spans human-computer interaction, design and artistic practice, with the body as a central focus. Her doctoral research investigated the emerging field of movement-based interaction design and resulted in a design methodology, Moving and Making Strange, consisting of methods and tools to assist in the design of movement-based interactive technologies. The design methodology gives primacy to the lived experience of people interacting with technology and offers three perspectives for designers: the first-person experiential, the observer and the machine. Recent projects include the Thinking Through The Body ensemble (<http://thinkingthroughthebody.net>), exploring aesthetic experience, interactive art and somatic bodywork (ArtLab 2008/2009); and the Bystander Field (ARC LINKAGE PROJECT LP0349327). Current projects include Australia Council for the Arts funded research into wearable technologies for interactive art, costume and performance.

Martin - Bianca Martin is a Perth based contemporary dance choreographer. 2008 marked the debut of her full-length work HOME ALONE (the suburbs dream tonight) as part of the Artrage Silver Festival, and launched Company Upstairs as a vehicle for her dance theatre and installation works. HOME ALONE was nominated for Outstanding Achievement in Choreography and won the Award for Design and / or Composition in Dance at the 2009 WA Dance Awards. Bianca is a dedicated contributor to the Perth arts scene, through STRUT dance, Steps Youth Dance Company and the Artrage

festival. In 2008 Bianca presented a version of Thomas Lehmen's Schreibstück at the Perth Institute of Contemporary Arts (PICA), for which she was nominated for Outstanding Achievement in Choreography at the 2008 WA Dance Awards. In Australia Bianca has performed for Buzz Dance Theatre, Co Loaded for the Perth International Arts Festival 2005, and Hydra Poesis. In Europe she has performed dance theatre work for Compagnie Abyla (France), Sebastian Prantl (Austria) and Company Bettina Owczarek (Germany). Bianca has presented her own work for the Lucky Trimmer Mini Festival in Berlin. 2010 projects have included performance for Personal, Political, Physical Challenge by Sam Fox's Hydra Poesis opening at PICA, and an adaptation of US choreographer Deborah Hay's work In The Dark. In August Company Upstairs hosted Margie Medlin (Critical Path, Sydney) and Gerald Thompson with their motion controlled robot camera for a PICA research and development funded exploration period, with Julie Robson as dramaturge. Bianca is in her final year of a Bachelor of Laws at UWA.

Mauro-Flude - Nancy Mauro-Flude is poetically invested with the electronic movement and often highlights the importance of the internet as a medium, meeting place and information source, and the experiential worlds they carry in their wake. In her research she foregrounds the tools and paraphernalia that construct the relationship between the social and technical, the material and immaterial. She explores how these information systems are having a fundamental impact on our embodiment, our being in the world. After a sustained career working internationally, she is based in Tasmania, Australia. She is invited for commissions and to talk, perform, and exhibit at events and venues throughout Asia-Pacific, Europe, North/South America and beyond such as; Netherlands New Media Art Institute, Pixel (Norway), HONF (Indonesia), Imal (Brussels), ESC (Graz), CAST (Tasmania), FILE electronic art festival (Brazil), ISEA 07-09, V2_Institute of Unstable Media, ArtSpace (Sydney), Planet Art, International Festival of Computer Arts Maribor (Slovenia), Bergen Center for Electronic Arts, Amber Annual International Digital festival of body-process arts (Istanbul), Museum Quartier (Vienna), CAST (Tasmania), Performance Space (Sydney), Waag Society/for Old and New Media (Amsterdam), and WORM (Rotterdam) and the World Wide Web.

McIlwain - Doris McIlwain teaches personality psychology and philosophy of psychoanalysis at Macquarie University. Her research is on emotion, memory, and movement. Her movement work explores how verbal instructions permit us to colonise the body in different ways. She also looks at the difference between rumination and reflection in accessing the personal past, with an interest in how depression and avoidant attachment might also play a role in making us live life more palely. Her empirical work links Narcissism, Machiavellianism, and psychopathy, with an emphasis on the way that openness to vicarious feelings shapes morality. Her current writing addresses the interlinking of bodies and words, and the way that psychopathically-inclined people live strangely in time: a further enduring interest is in charisma, and her book on that topic, *Impatient for Paradise*, came out in 2009. She has been a yoga practitioner since 1987. <http://www.psy.mq.edu.au/staff/dmcilwain/>

McQuire - Scott McQuire is Associate Professor and Reader in the School of Culture and Communication at the University of Melbourne. In 2004, he and Nikos Papastergiadis founded the Spatial Aesthetics research program, to pursue interdisciplinary research linking the fields of new media, contemporary art, urbanism, and social theory. Scott's current research explores 'participatory public space' and includes several projects developing interactive applications for large screens in public space. His book *The Media City: Media, Architecture and Urban Space* (Sage/TCS 2008) won the 2009 Jane Jacobs Publication Award presented by the Urban Communication Foundation in the United States, and his most recent publication was the *Urban Screens Reader* (2009) co-edited with Meredith Martin and Sabine Niederer.

Medlin - Margie Medlin (AUS/ GB) is an internationally recognized artist leading the field of dance and the moving image. For 20 years she has produced combinations of film and video works, scenographies and new media art works. As a producer and director of dance films and video works most recent credits include the film of SWIFT developed in collaboration with Warby for ABC television and *Morphing Physiology* a documentary of the Quartet Project. www.quartetproject.net. 'Her recent installations have devised software and hardware tools that create a highly intelligent reflection on dance through the media of new technology.' Ballet Tanz. She was artist in Residence at the ZKM Institute for Art and Media, Germany (1999-2001), She received a Science and Art production award from the

Wellcome Trust in London in 2005. Margie became the director of Critical Path in Sydney in August 2007.
www.criticalpath.org.au

Miller - Brad Miller is an artists and design academic at University of New South Wales, College of Fine Arts. He lives and works in Sydney. He has typically manipulated found images and sound in single channel video and interactive works. With his most recent exhibition *augment_me*, he worked with personal photographic memories, using synchronized projections in what might be called a large-scale installation using multi-channel sound that responds to a video camera infra-red tracking system. The system that was developed is highly flexible/adaptive and mobile, with the capability to have the imagery and sound change in response to location. He will be the research room resident at Critical Path in 2010 and in 2011 and will be on research assignment with Chunky Move and in residence at Cité Internationale des Arts, Paris.

Marstaller -Lars Marstaller is a PhD student at the Macquarie Centre for Cognitive Science, Sydney. He studied philosophy and linguistics in Berlin and Edinburgh and worked on consciousness, representation, and artificial life in Berlin and Los Angeles. His current research is focusing on the role of gestures in cognition. For more info visit: <http://sites.google.com/site/larsmarstaller/>

Muller - Dr. Lizzie Muller is a curator, writer and researcher specialising in interaction, audience experience and interdisciplinary collaboration. She is Senior Lecturer in the School of Design at the University of Technology, Sydney. She recently completed a curatorial practice-based PhD on the audience experience of interactive art. Recent curatorial projects include the *Mirror States* exhibition at Campbelltown Art Gallery, Sydney and MIC in 2008. She is the currently curator and co-organiser of the research project *Thinking Through the Body*, funded by the Australia Council. In 2007 she was researcher in residence at the Daniel Langlois Foundation in Montreal. Between 2004-2006 Lizzie was founding curator of *Beta_space*; a dedicated venue for exhibiting "prototypes" of interactive artworks at the Powerhouse Museum, Sydney. Between 1999 and 2004 she was Digital Arts Producer for the Junction Art Centre, Cambridge, UK during which time she commissioned and produced a number of art works, including performances, interactive installations and public art. Key projects include the digital arts festival *Respond* in 2002 produced in partnership with Future Physical and CUMIS and the New Technology Arts Fellowships, a series of interdisciplinary research residencies with Crucible and Kettles Yard Gallery in 2002/3

Obarzanek - Gideon Obarzanek is a choreographer and director, and the artistic director of Chunky Move dance company. spent his early childhood in Israel on an agricultural kibbutz. He choreographed his first piece, *The Heat*, for an Australian Ballet School choreographic workshop in 1987. *The Heat* was subsequently performed by the Dancers Company of the Australian Ballet. Obarzanek joined the Sydney Dance Company in 1991, where he made *Sleep no more* for the season *The Shakespeare Dances*. He then left Sydney Dance to pursue a career as a performer and choreographer with various dance companies and independent projects within Australia and abroad. These have included commissions from the Australian Ballet, Sydney Dance Company, Opera Australia and the Netherlands Dance Theatre. In 1995, in collaboration with Garry Stewart, Obarzanek founded Chunky Move. The company's inaugural season was at the Melbourne International Festival of the Arts in 1995 when it presented Obarzanek's *Fast Idol* and Stewart's *Spectre in the Covert Memory*. At first Sydney-based, Chunky Move relocated to Melbourne in 1997 as Victoria's official modern dance company. Obarzanek's works have been performed in many festivals and theatres around the world including in France, Switzerland, Russia, U.K., Belgium, Germany, Hong Kong, Singapore, South Korea, Hungary and the United States. In New York, he has been presented at BAM Next Wave Festival, Dance Theatre Workshop and the Joyce Theatre. Obarzanek in collaboration with Lucy Guerin and Michael Kantor received a New York Bessie award for outstanding choreography and creation for Chunky Move's production of *Tense Dave*. He has also received two Melbourne Green Room Awards for best concept and choreography for *I Want to Dance Better at Parties* and in 1999 a Mo award for best choreography for *Bonehead*. In 1996 he received the Prime Minister's Young Creative Fellowship, and in 1997 the inaugural Australian Dance Award for outstanding achievement in choreography. His 2006 work *Glow* which incorporates sophisticated interactive technology for body, sound and light won the 2008 Helpmann award for best ballet or dance work.

Paine - Dr Garth Paine is Senior Lecturer in Music Technology, a researcher at MARCS Auditory Research labs and director of the Virtual, Interactive, Performance Research environment (VIPRe) <http://vipre.uws.edu.au/>. He is particularly fascinated with sound as an exhibitable object. This passion has led to several interactive responsive environments where the inhabitant generates the sonic landscape through their presence and behaviour. It has also led to several music scores for dance generated through video tracking of the choreography. His work has been shown throughout Australia, Europe, Japan, USA, Hong Kong and New Zealand. Paine is internationally regarded as an innovator in the field of interactivity in experimental music and media arts. He is an active contributor to the International NIME conference and has been guest editor of Organised Sound Journal on several occasions. Dr Paine's ensemble SynC (<http://www.syncsonics.com>) acts as a platform for research into new interfaces for electronic music performance. SynC has performed in, Paris (2006), New York (2007), Liquid Architecture (2007), Aurora festival (2006, 2008), and The Australian New Music Network concert series (2008). He is a member of the advisory panel for the Electronic Music Foundation, New York and an advisor to the UNESCO funded Symposium on the Future. Dr Paine is a Chief Investigator on several current Australian Research Council grants. <http://www.activatedspace.com>

PRINZGAU/podgerschek is based in Vienna, Austria. They have worked together since 1984 in the field of experimental architecture/design, film, photomedia, and art in public space. Often their work is related to other sciences and exhibitions, film and books or made in an international context, like 'Weg mit dem Ziel', France, Austria; 'Lo(o)sgelöst', Turkey, USA, Austria; 'Bite into Water', NL, Austria; and 'Sneaking', Japan and Austria. Other works and exhibitions include 'Tapis Rouge', port of Dieppe/Normandy, France; and 'Naked cinema', Kino unter Sternen, Augarten Vienna.

Richards - Kate Richards' versatile practice includes virtual worlds, interactive installations, datamapping software and combining live performance with new media. Recent projects include 'Travels In Beautiful Desolation', featuring her fictional galaxy 'Gondwana', for Dreamworlds, Beijing 2010; 'Affective Resonance', part of the collaborative project Bloodbath, Sydney 2010; 'Wayfarer', a series of live participatory events with Martyn Coutts including 'Wayfarer v3 - Global Agents' in Melbourne 2010; 'Foul Whisperings, Strange Matters' a treatment of Macbeth in Second Life, 2008 (with Kerreen Ely-Harper and Angela Thomas); and the Life After Wartime suite with Ross Gibson. As a multimedia concept designer and producer, Kate delivers both large and boutique scale projects. Kate is the co-ordinator of the new Masters of Convergent Media at the University of Western Sydney.

Schnell - Norbert Schnell studied Telecommunications & Music and worked at the Graz Institut für Elektronische Musik (IEM) as a developer and advisor for projects with composers such as Beat Furrer and Robin Minard. In 1995 he joined the Real-Time Systems team at IRCAM which he has since continued to coordinate. He and his team are involved in scientific and artistic projects focusing on real-time interaction. Besides his engagement in artistic productions with composers such as Boulez, Manoury, Nunes and Stroppa, his team participates in a diversity of international research projects. In June 2006 he organized and chaired the 6th International Conference on New Interfaces for Musical Expression at IRCAM.

Sky - Hellen Sky is a digital choreographer/performer/director/writer whose work poetically bridges the human and the technological. Working collaboratively with peers from arts, science and computer design her work often uses data generated by the body to affect the relationship between multiple media - spoken word, sound, image, movement, virtual and physical architectures. Sky's practice is a formidable dance between the senses, finding form as both performance and installation. Founding member of Circus Oz, The Australian Performing Group, Dancehouse and Company In Space, Hellen Sky has achieved international recognition for her innovative choreography and direction. <http://www.hellensky.com>

Slatery - TTB - Maggie Slatery is a practitioner of the Feldenkrais Method. In addition she has facilitated Energy Architecture's Sustainability Consultancy service since 2003, managing large-scale projects, providing research analysis, reporting, sustainability design guideline development, architectural writing and documentary production

Stelarc - Stelarc's work is about getting under the skin (usually his own), which has included the growth of a stem-cell third ear on his arm. Stelarc is a pioneer of cyborg art. He is a performer, Chair in Performance Art at the School of Arts, Brunel University, West London, Senior Research Fellow and Visiting Artist at the MARCS Lab at the University of Western Sydney (UWS), and Honorary Professor of Art and Robotics at Carnegie Mellon University, Pittsburgh. He also has an Honorary Doctorate from Monash University in Melbourne. Over the years Stelarc has explored and applied his body further than skin-deep to research the notion of the cyborg, where the interface becomes part of the human body. In fact, for him the body has become obsolete. But rather than a cold, hard, technical cyborg, Stelarc's research through artistic expression shows a deep passion, warmth, (in)sanity, and humour. We are thrilled to have Stelarc as a keynote speaker in person, with his very un-obsolete body present. Through his work he has extended the whole notion of an interface, blurring the distinction between mind and matter by physically engaging in a gentle clash between machine and human, metal and flesh, computer and brain. Or is it a dance? www.stelarc.va.com.au

Stevens - Catherine (Kate) Stevens is a cognitive psychologist who applies experimental methods to the study of auditory and temporal phenomena including music, dance, and environmental sounds. She holds BA (Hons) and PhD degrees from the University of Sydney. From 1993 to 1995 she was an ARC postdoctoral fellow at the University of Queensland. On returning to Sydney in 1996, Kate established the Australian Music & Psychology Society (AMPS) and Macarthur Auditory Cognition Laboratory (now MARCS Auditory Laboratories). Kate is an Associate Professor in Psychology and convenes the Music, Sound, and Action group in MARCS Auditory Laboratories at the University of Western Sydney (<http://marcs.uws.edu.au>; <http://katestevens.weebly.com>). .

Sutton - John Sutton works in the Macquarie Centre for Cognitive Science, after moving over from Philosophy in 2008. He studies autobiographical and social memory, embodied skill, and cognitive history. He is author of Philosophy and Memory Traces: Descartes to connectionism, and co-editor of the interdisciplinary Sage journal Memory Studies. <http://www.phil.mq.edu.au/staff/jsutton/>

Thomas - Paul Thomas, is an Associate Professor at the College of Fine Art, University of New South Wales. He is the co-chair of the Transdisciplinary Image Conference 2010. In 2000 Paul instigated and was the founding Director of the Biennale of Electronic Arts Perth (BEAP) and has been working in the area of electronic arts since 1981 when he co-founded the group Media-Space. Media-Space was part of the first global link ups with artists connected to ARTEX. Paul's current research project 'Nanoessence' explores the space between life and death at a nano level. The project is part of an ongoing collaboration with the Nanochemistry Research Institute, Curtin University of Technology and SymbioticA at the University of Western Australia. His previous project, Midas explored the transition phase between skin and gold at the nano level. Paul recently collaborated on an intelligent architecture public art project for the Curtin Mineral and Chemistry Research Precinct. Paul is a practicing electronic artist whose work can be seen on his website, <http://www.visibleSPACE.com/> .

Thompson - Gerald Thompson studied cinema and drama at Flinders University in South Australia, and subsequently undertook a traineeship at the Tasmanian Film Corporation. From 1981 to 1994, he was a freelance camera assistant and cinematographer on TV commercials, documentaries and short dramas. He worked for eight years as technical adviser and production consultant at the S.A. Media resource Centre. During this time he directed and produced his first short film titled Despair. He produced and directed the locally and internationally awarded vfx short film The Cuckoo. It featured a wide range of unique cinematic effects developed especially for the film, such as front projection, aerial imaging, animation and miniatures composited with live action. After this period, Gerald was appointed visual effects and post production co-ordinator on a 70mm documentary Changing Heart (for the Northern Territory Government). He then worked with Digital Arts as Motion Control Operator. Their two rigs (one large crane type and a smaller dolly rig) were used on many commercials and the feature Dark City in 1996-97, then later for Babe ? Pig in the City, and he worked as motion control operator on ?Lord of the Rings?. Gerald also has extensive skills in computer based 3D animation and 2D compositing systems.

Traenkle - Marion Traenkle is an artist and designer based in the Netherlands. With a background in architecture, choreography and media technology, she creates performances and designs interactive installations as well as

maintains a practice as designer for the built environment. She holds degrees in Media Technology (Leiden University), Choreography (School of the Arts, Amsterdam) and Architecture (Technical Universities of Berlin and Delft). Currently she is associated with the School of the Arts in Amsterdam as a researcher.

Truman - TTB - Catherine Truman is co-founder of Gray Street Workshop in Adelaide. Established in 1985, it is one of Australia's longest running artists' co-operatives. In 1990 she was awarded the Japan/South Australia Cultural Exchange Scholarship and studied with contemporary Netsuke carvers in Tokyo. In 1998 she was a finalist in the Seppelt's Contemporary Art Award at the Museum of Contemporary Art in Sydney and has recently been awarded an Australia Council Fellowship. She has traveled and exhibited widely nationally and internationally and is represented in a number of major national and international collections including the Pinakothek Moderne Munich, Museum of Auckland, National Gallery of Australia, National Gallery of Victoria, Queensland Art Gallery, Art Gallery of Western Australia, Powerhouse Museum Sydney, Art Gallery of South Australia and Artbank. She has completed a number of major public sculptural commissions including Slate Pool Walkway at the Art Gallery of South Australia and A Way of Seeing for David Jones, Adelaide. Truman qualified as a practitioner of the Feldenkrais Method in 1999 and uses the body as a starting point in her work. Her work has always been informed by a strong political consciousness. Earlier work has dealt with social issues ranging from aging, housing and shelter through to more personal themes dealing with human intimacy. Later work is centred upon investigations into the authenticity of the images we carry about our personal anatomy. The resulting objects characteristically carved from wood or wax are not exact anatomical replicas but rather evoke sensory responses of physical recognition and resemblance. Currently she is a PhD research candidate at Monash University and her topic is The crafting of human anatomy - a personal inquiry.

Van Hout - Vicki Van Hout is an independent dancer, choreographer and teacher. Originally from Dapto in regional NSW, she trained at the National Aboriginal and Islander Skills Development Association – now the NAISDA Dance College. In the early 90's she moved to New York and trained with leading modern and post-modern dance artists before returning to Australia in 1996 to perform with Bangarra Dance Theatre. Vicki creates contemporary dance layered with Indigenous cultural information and imagery, her works to date having explored matrilineal kinship systems and welcome to country protocols.

Zappala - Roberto Zappalà founded the Compagnia Zappalà Danza in 1989, to widen and deepen his own research in choreography whilst extending the possibilities for the training of young contemporary dancers. Since then he has created more than 25 pieces that have been presented throughout Europe, South America and the Middle East. He is currently the artistic director of the Scenario Pubblico performing arts centre in Catania, Sicily.

Ziegler - Chris Ziegler is media artist and director. Since the early 1990's he has undertaken numerous international collaborations on interdisciplinary projects in the field of new media with the performing arts. He holds a Diploma in Architecture, and Media Art. His career began in 1994 at the Center for Art and Media ZKM. Karlsruhe, with multimedia projects for Frankfurt Ballet and the Goethe Institute. His interactive installations, multimedia performances and scenographic works are now presented at festivals internationally. He won the first Young Art and New Media Award in Munich and was Nominee for Monaco Dance Forum Award, Monaco 2006. He has won various Design Awards (I.D. Magazine 2000/2001 and New Voices New Visions, New York 1996), and regularly works in Asia on dance and media productions, such as in India at the Attakkalari Center for Movement Arts and Mixed Media in Bangalore and teaching workshops in Singapore, Hong Kong and Japan. Chris Ziegler has taught in the US and Germany and was Associate Artist in the EU's Dance Apprentices Network Across Europe, collaborating with some of Europe's leading choreographers Frédéric Flamand, William Forsythe, Wayne McGregor and Angelin Preljocaj. Currently he is Associate Artist at the ZKM | Karlsruhe and Researcher for Inside Knowledge Movement at the Amsterdam School for the Arts (AHK) and preparing a major international dance workshop project in India with forest2 for the international choreographic center in Amsterdam (ICK Amsterdam), touring in India and Europe.

SYMPOSIUM_WORKSHOPS_PUBLICTALKS_PERFORMANCES_INSTALLATIONS_SCREENINGS

SEAM 2010

AGENCY AND ACTION

NOTES

SYMPOSIUM_WORKSHOPS_PUBLICTALKS_PERFORMANCES_INSTALLATIONS_SCREENINGS

SEAM 2010

AGENCY AND ACTION

SYMPOSIUM_WORKSHOPS_PUBLICTALKS_PERFORMANCES_INSTALLATIONS_SCREENINGS
SEAM AGENCY AND ACTION 2010