

TRANSNET



*Performing Art Performing Science:
Transdisciplinary Approaches
to Performance*

CONFERENCE

IRMACS Centre, Simon Fraser University

June 16-18, 2005

presented by

TransNet: Transdisciplinary Network for Performance and Technology

School for the Contemporary Arts, Simon Fraser University

www.sfu.ca/transnet

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interdisciplinary research in the mathematical and computational sciences

The IRMACS Centre provides a flexible, collaborative, computationally sophisticated environment at Simon Fraser University for more than one hundred scientists whose primary laboratory tool is the computer. IRMACS provides an environment that removes traditional boundaries between scientific disciplines, in order to promote novel initiatives. The Centre capitalises on SFU's strengths in ground-breaking and interdisciplinary research, together with the expertise of its computationally sophisticated researchers.

Performing Art Performing Science: Transdisciplinary Approaches to Performance

HELLO AND WELCOME

First of all, my thanks to everyone for taking time off from their very busy schedules to be here. It is a great pleasure to see all of you. My hope is that the time spent, and the discussions generated amongst us in the next few days, will be well worth your while. I know that I'm certainly looking forward to all of it.

About Transnet: The Transdisciplinary Network for Performance and Technology has come about partly through my own desire to pursue research in the field of dance, performance, and technology in closer contact and collaboration with an international community of practitioners and scholars, and partly through a formal acknowledgement that my own interests and curiosities lay far beyond my own disciplinary activities. More accurately, these interests and curiosities concern the range of connections between people and the things, i.e., the research, that they are engaged in. I am interested in creating an environment where the spark of curiosity that motivates learning, and creativity, could lead to more serious research in the interconnections between supposedly disparate fields of knowledge.

In our evolutionary search for knowledge—and I do believe that the process is an evolutionary one—we naturally go from a more comprehensive holistic approach, to increasing specialization, and then to a more integrated stage where a new balance is struck between disciplines. Knowledge is always at first an attempt to understand a thing in relation to its context, and since the context is always greater, the individual goes further afield, in a sense challenging, and sometimes losing, the security of the ground on which he or she stands. Re-establishing a new centre of gravity comes as a kind of reward for one's efforts. This new centre joins the old to become part of a growing and evolving network of centers of knowledge.

This, for me, is the essential relation between disciplinary activities. To attempt to understand the current rhetoric of knowledge production, one needs to consider the history of both disciplinary and interdisciplinary research. To be a stakeholder in the systematic generation, organization, and dissemination of knowledge, new or old, and to benefit from the reward systems put in place by various organizations to recognize that one is indeed making a contribution to knowledge, the creative artist is faced with the task of responding to a host of new challenges. I propose a transdisciplinary approach, and my wish is that, in the next few days, we can collectively identify what the challenges to such an approach are, and the role that Transnet can play in furthering its agenda.

Sincere regards,

Henry Daniel, PhD
Associate Professor – Dance and Performance Studies
School for the Contemporary Arts
Simon Fraser University

conference schedule

	thursday, june 16	friday, june 17	saturday, june 18
8:45am	REGISTRATION: IRMACS Centre, SFU		
9:15am	OPENING WELCOME: Henry Daniel		
9:30am	KEYNOTE ADDRESS: Michael Century	ART AND CONSCIOUSNESS	
10:00am	PERFORMANCE INTERFACES Chair - Angela Piccini 1) Martin Gotfrit, Kenneth Newby and Aleksandra Dulic	Chair: Johannes Birringer 1) Sarah Rubidge 2) Daniel Weeks 3) Steven Brown 4) Jonathan Schull	ROUNDTABLE DISCUSSION: <i>Performing Art Performing Science</i>
11:00am	2) Brian Fisher & Linda Kaastra 3) Kenneth Emig + Alexis K. Andrew		Chair: Laura Marks, Art + Culture School for the Contemporary Arts
11:30am		IRMACS Centre, SFU	Morris J. Wosk Centre for Dialogue, Simon Fraser University Harbor Centre Campus
12:00pm	LUNCH BREAK	LUNCH BREAK	LUNCH BREAK
1:00pm	TOOLS, TRADITIONS AND TRANSFORMATIONS - Chair: Henry Daniel 1) Arne Eigenfeldt, 2) Norma Sue Fisher-Stitt 3) Zab Maboungou	NEW FRONTIERS Chair: Henry Daniel 1) Richard Vaughan & Pouya Bastani 2) Jim Ruxton 3) Stephen Braham	ROUNDTABLE DISCUSSION: <i>Performing Art Performing Science continued</i>
2:15pm			
2:30pm	RESEARCH AND INNOVATION AT HEXAGRAM Chair: Barbara Layne 1) Barbara Layne 2) P.K. Langshaw 3) Marcelo Coelho	VISUALIZING MICRO-INTERACTIONS Chair: Norma Sue Fisher-Stitt 1) Fiona Brinkman + Jennifer Gardy 2) Diane Gromala	Conference Wrap-up and Closing Comments Chair: Henry Daniel
2:45pm			
3:00pm			
4:00pm			
6:00pm	OPENING RECEPTION		
8:00pm		SKIN (a work-in-progress) SFU Theatre Performance by Full Performing Bodies	

SKIN (a work in progress)

Performance by Full Performing Bodies

"The body reveals itself to the world and to itself through the intersection of a tactile sensation that is on the outside and a kin-aesthetic sensation that is on the inside."
- Merleau-Ponty, M.



Friday, June 17, 2005

8:00pm
SFU Theatre

A collaborative work-in-progress conceived by Henry Daniel of Full Performing Bodies and:

Dionne Brand - Text (Additional text by the performers)
Courtney Bannon - Performance
Henry Daniel - Performance, Text
Lisa C Ravensbergen - Performance, Text
Sommer Thome - Performance
Kyle Toy - Performance
Vic Ustare - Performance

Arne Eigenfeldt - Sound Design
David Brown - Bass
Albert St Albert Smith - Percussion
Ken Newby & Aleksandra Dulic - Video Programming & Desig [Computational Poetics Research Group]

Robert Gardiner - Lighting Designer
Jeff Harrison - Technical Director and Lighting Director
Yovanka Contreras - Technical Production and Stage Management
Monica Strehlke - Costumes, Rehearsal Assistant
Dinka Pignon - Cinematographer
Ernie Wai - House Technician
Vera Ha - House Technician



This project is supported by a SSHRC RDI Grant, an SFU Discovery Parks Grant, the School for the Contemporary Arts, and the School of Interactive Arts at Simon Fraser University.

CONFERENCE LOCATIONS

IRMACS Centre
Applied Science Building,
ASB 10905
Simon Fraser University
Burnaby, BC

Morris J. Wosk Centre for Dialogue
580 West Hastings Street
Simon Fraser University
Vancouver, BC

SFU Theatre
Convocation Mall
Simon Fraser University
Burnaby, BC

Autonomy Lab
School Of Computing Science,
MTF 265
Simon Fraser University
Burnaby, BC

STEPHEN BRAHAM

Director, PolyMath,
Department of Mathematics and
Statistics, Simon Fraser University

***Between Earth and Space:
Performance in Space Exploration***

Human Space Exploration has become one of the leading areas of performance in engineering and in the media. Dr Braham, the Director of the PolyLAB unit of the School of Communication Telematics Research Lab, leads collaborations examining the development needs for exploration technologies, both software and hardware, that will eventually enable the support of humancrewed exploration missions to other planets, in particular to Mars and the Moon. Advanced communications technology is experimentally deployed during field seasons of the NASA Haughton-Mars Project (HMP) at the Haughton impact crater site, Devon Island, Nunavut. To perform well in this field, scientists are required to achieve the highest level of technological performance possible. However, in the Arctic, and elsewhere, Dr. Braham is frequently requested to appear in many forms of national and global media. This requires a performance appropriate to the public understanding of a “rocket scientist.” In addition, the high levels of funding required to perform this work require extensive presentations and papers to be written to demonstrate competency in the field and to provide motivation for Canadian and international government involvement. Space exploration sits not at an intersection of performance, but at a union of performance, without which it does not occur.

FIONA BRINKMAN + JENNIFER GARDY

Fiona Brinkman, Assistant Professor,
Department of Molecular Biology and
Biochemistry,
Jennifer Gardy, PhD Candidate,
Department of Molecular Biology and
Biochemistry,
Simon Fraser University

The Dance Between Person and Pathogen

The relationship between a person and an infectious disease-causing bacterium is complex, however recent research findings at the molecular level have revealed how elegant and balanced this interaction can be. Components of a pathogen work together in symmetrical harmony to ensure their survival. There is also a literal dance between person and pathogen - a dance which research suggests we must strive to make more harmonic. Images and other media will be used to illustrate life's complex balance and demonstrate how this balanced complexity is currently displayed visually by molecular biology and bioinformatics scientists.

STEVEN BROWN

Cognitive Neuroscientist,
University of Texas Health Science Center

***Brain Imaging Technology and the
Performing Arts: Cogitation, In-
spiration, Incorporation***

Neuroimaging technology was developed in the 1980's as a means to study the structural and functional properties of the living human brain. Its combination with cognitive psychology in the 1990's spawned the synthetic field of cognitive neuroscience. In this talk, I will discuss three means by which brain imaging can interact with the performing arts: cogitation, inspiration, and incorporation. 1) Cogitation. Closest to its true calling as a biological imaging technology, neuroimaging can be used to understand the neurocognitive processes by which performers generate art works and observers perceive them. This includes an analysis of the cognitive, motor, sensory, and emotive centers of the brain used for conceptualizing, executing and apprehending art works. 2) Inspiration. Brain images, along with the underlying cognitive processes that generate them, can be a source of inspiration to artists. For example, a brain image itself can be used by a graphic artist as a template to create some brain-inspired artwork. Likewise, performing artists can try to model neural processes by performing stylized simulations of brain phenomena, for example synaptic transmission. 3) Incorporation. The incorporation of brain imaging technology into the performing arts sits in the realm of the fanciful at the current time, but I can imagine a few routes by which this could, in theory, come about. A person could be imaged either on stage or at some remote site during a performance. Non-imaged performers could either be a source of the imaged person's brain responses or could themselves respond to the brain data obtained from the imaged person. The incorporation of brain data into the performing arts will most likely depend on portable imaging technologies that can provide data in real time, such as electroencephalography.

MICHAEL CENTURY

Professor, Arts Department,
Rensselaer Polytechnic Institute

***The Historical Décalage:
Transdisciplinarity and the Avant-garde***

KEYNOTE SPEAKER

Contemporary artists of all stripes may deservedly be surprised to learn how central the concept of transdisciplinarity has become in the social and natural sciences. Broadly put, this is a “mode of knowledge production” which, in contrast to research closed off in single fields and limited to specialist investigators, demands multiple perspectives, the iterative shaping of theory in real world problem settings, and the collaboration of the users of knowledge in shaping experimental design. Once expressed in cultural terms – inter-arts (or poly- or experimental art), site-specificity, and participation – it will be evident that these tenets have been at the core of avant-garde movements in the arts since the early 1900s. There is little if any insight about this historical décalage in the literature about transdisciplinarity in Science and Technology Studies, where the “historic” avant-gardes tend, when acknowledged at all, to be encapsulated conceptually as merely transgressive or negative. A different claim can be put forth, which acknowledges a cognitive/epistemic fall out from the early 20th century cultural transdisciplinarity. New questions arise out of this re-reading of the rise and decline of the avant-garde. The one which this paper will conclude with is, What terms can we use to specify the ways in which some practitioners/researchers in the arts may be more like some scientists than like other artists (and vice versa)?

MARCELO COELHO

Research Coordinator, XS Labs,
Faculty of Fine Arts, Concordia University

***XS Labs: Extra Soft Displays and
Memory Rich Garments***

XS Labs is a design research studio where we develop artifacts that are extra soft and react in weird ways to our bodies and our environments. We play, we experiment, we develop new technologies, we make art, and we design prototypes in electronic textiles and wearable computing.

For this presentation, we will particularly describe two different projects developed over the course of the last two years. Shimmering Flower is an electronically controllable, visually dynamic textile display and a significant development in a field where such devices are traditionally hard, square emissive devices. Memory Rich Garments is a series of wearable technologies that display a garment's history of use and communicate physical memory. This research concentrates on the production of garments that incorporate soft computation techniques and that reflect more subtle, poetic and playful aspects of our identity and embodied history.

ARNE EIGENFELDT

Assistant Professor, School for the
Contemporary Arts,
Simon Fraser University

Reflections on Computer Music Performance

Computer music has focused itself on the traditional model of western musical composition: the creation of the “fixed time object”. Such works are the realization of a single artist, an attempt to create the perfect combination of sounds that make the result worth repeating without change. Electroacoustic music, with the creation of the “solo tape work”, has eliminated the performer entirely; hailed as the first opportunity for composers to directly communicate with their audiences, without the intermediary stage of interpretation, performances often involve audiences sitting in darkened rooms, with only a set of speakers as visual stimulus. A contrasting branch of computer music explores the performative element and potential for the computer within a performance. Often these practitioners of live computer music explore elements of improvisation that create slight to complete changes between subsequent performances. In order to model inspiration, serendipity, spontaneity, and unpredictability found in a more traditional, acoustic variety of such music, composers have turned to random processes. I will suggest some possibilities by demonstrating some current (and past) practices.

KENNETH EMIG + ALEXIS K. ANDREW

Emig Research, Ottawa

Presentation as Performance: An Exploration in the Human-Computer Interface (HCI), Dance and the Access Grid

Human-Computer Interaction (HCI) consists of the computer side and the human side of this discipline. The human side currently uses information from many science-based disciplines including psychology, human factors, ergonomics and design. The arts in general and dance in particular, provide another way of looking at the human side of HCI.

The Access Grid is a multimodal high-bandwidth collaboration system comprising of video, audio and information sharing technologies. In order to fully understand the HCI implications of the system, one has to experience it with all the senses.

The dancer needs to look closely at the functioning, sequencing and awareness of the body, not solely from a scientific angle, but from a sensorial and experiential angle. Work such as "Body Mind Centering" developed by Bonnie Bainbridge-Cohen provides tools for conscious awareness of different body systems. When performing improvised dance, the artist can draw on this physical information as inspiration or a source of movement such as moving from the bones or muscle. The HCI researcher can use this same physical information to create a better "Quality of Experience" for the end user. For example, how can the information transmitted via a handshake in a face-to-face meeting be altered for a distance collaboration system.

The presentation will take place as a performance, illustrated by improvised dance and discussion using the Access Grid technology. The improvised dance component will consist of an Access Grid connection between the National Research Council (NRC) in Ottawa and the IRMACS Theatre at Simon Fraser University (SFU). Kenneth Emig at SFU will be performing with Alexis K. Andrew in the Mutual Media Research Laboratory at NRC in Ottawa.

BRIAN FISHER + LINDA KAASTRA

Brian Fisher, Associate Director, University of British Columbia Media and Graphics Interdisciplinary Centre

Linda Kaastra, PhD Candidate, Department of Music, University of British Columbia

Affording Virtuosity

We will describe a methodology we are developing that crosses music performance, music theory, cognitive science, and human-computer interaction (HCI). HCI focuses on simplifying interaction for novice users (e.g. creating affordances that make each dimension of the control action correspond to a dimension of the application). Music on the other hand, seeks to build virtuosity in both individual performance and in collaboration in an ensemble, and their instruments routinely violate HCI constraints. We hope to generate a research methodology that is inherently collaborative and cross-disciplinary, combining methods from sciences and music to better understand highly skilled musical performance. The methodology and the knowledge derived will be applied to music performance analysis and the design of new human-computer interfaces. Our project begins by analyzing video and motion-capture recordings of musicians learning Toru Takemitsu's Masque for two flutes. We look at how musical metaphors are understood, communicated, and realized in performance while learning the piece.

NORMA SUE FISHER-STITT

Associate Professor, Department of Dance, York University

Is Any Body Home?

In this paper, the idea that we are in an age of neo-Romanticism is explored, taking elements associated with the Romantic ballet and comparing them with various contemporary life experiences, films and live performances, including Lisa Naugle's 2003 work, *NightDriving*. Several observations and questions emerge, including: Is the virtual body the ultimate ethereal form? The Romantic era was a time of rapid socio-cultural shifts initiated by the Industrial Revolution. Within the Romantic ballet the body and its meaning played a key role; the duality between the human and the non-human was a central theme, with fantastical creatures hovering above the stage in marked contrast to the earth-bound humans. A key to the portrayal of the illusion of being non-human was a new technique, pointe work, and a new piece of technology, the pointe shoe. Katherine Hayles offers a theoretical approach to think about the role of the pointe shoe. The pointe shoe is an attached extension to the foot, thereby assuming the status of prosthesis. The pointe shoe, as prosthesis, can be seen as a harbinger of the virtual worlds that have become so popular in late 20th century and early 21st century computer games, films, and performances.

MARTIN GOTFRIT, KENNETH NEWBY + ALEKSANDRA DULIC

Martin Gotfrit, Director, School for the Contemporary Arts, Kenneth Newby, Assistant Professor, School of Interactive Arts and Technology, Aleksandra Dulic, PhD Candidate, Computing Arts and Design Sciences, Simon Fraser University

Current Directions in Performance and Computational Poetics

Contemporary computational techniques enable creative and performing artists to enter into new collaborative relationships with encoded systems that carry compositional and performative knowledge of artistic practices. When applied to art production and performance, computational techniques may provoke deep questions into the philosophical influences, formal characteristics and aesthetic qualities of this art. Process-oriented, interactive and computer-assisted approaches to the control and generation of audio and visual performances will be presented in the context of a variety of culturally encoded and multiply mediated performance techniques.

DIANE GROMALA

Director, BioMedia Lab, School of Literature, Communication and Culture, Georgia Tech

Culturing Liveness, Deadening Affect

In *Liveness: Performing in a Mediatized Culture*, theorist Phil Auslander analyses how live performance has been devalued in our increasingly media-saturated culture. In subsequent work, he has explored the shifting meanings of liveness in television, rock concerts, and media art. This paper questions Auslander's notion of liveness, specifically as it relates to recent art forms that involve culturing tissue and to closely related scientific research in bioengineering that explore the interfaces and symbiotic relations between tissue and silicon chips in an effort to more fully understand neuroplasticity. Of particular interest is the seeming paradox of the relative lack of abject or visceral responses to such work as it could relate to a reorientation of the notion of liveness.

PK LANGSHAW

Chair, Department of Design and Computation Arts, Concordia University

nomadic [per]forms: [re]appearance and [sub]verse

nomadic [per]forms was conceived in 2002 as a multiyear experiment into non-linear and mediated series of narratives for nomadic spaces. With the aid of the retrieval system, we play back or project non-linear narratives of the mind or multilevel ways of re-representing and performing memory. nomadic [per]forms pushes the boundaries of the narrative as non-linear, organic and interactive. As this kind of narrative requires a large repository of data produced, categorized and structured for retrieval, it was essential to use the science model of methodology, analysis and evaluation. The artistic merit of these works is only evident if the support system is precise and efficient. The second stage framework/prototype is now in the refinement stages: interface design for touchscreen and gesture interaction and automatic annotation of data. In the manner of dialogic interaction with the computer, the prototype will be highlighted and we will demonstrate the precision retrieval and qualities of framework, offering the contextual discourse on transdisciplinarity.

BARBARA LAYNE

Associate Professor, Department of
Studio Art, Concordia University**Textile Translations**

Barbara Layne uses an artistic approach to combine electronic and material approaches to the production of animated textiles. LEDs and other light emitting materials are embedded in woven constructions to activate the surfaces. These chameleonic fabrics suggest a narrative situation for examining the fluidity of political and cultural boundaries, using textiles as a carrier of cultural information. The incorporation of sensors and other triggers create interactive possibilities. Working with a computer programmer, new design structures are developed through a variety of input. Expressed through textile patterns, this new Atlas of Experience refers specifically to the relationship between physical and electronic domains.

ZAB MABOUNGOU

Artistic Director and Founder,
Cercle d'Expression Artistique Nyata Nyata**Techniques/Ologies of
Transformation in African Dance**

Performance within an African context involves a multiplicity of actions in which the African dancer becomes an "actor" with an array of transformative techniques and/or technologies at his or her disposal. The term "actor" should not be understood in a theatrical or dramatic sense. Actor, literally, means the capacity to activate, put into action. The accent is not on the "being" of the dancer but on his acting body/mind, which is, conveys meaning. Rhythm as such serves as a unique evidence, one that articulates and shapes the dancer's intention, yet precedes it. Understanding these aspects allows us to understand this techniques/ology of transformation in African Dance as, essentially, a process that is inclusive. This presentation looks at the notion of performance as the best example of experiencing thought as movement and rhythm as the capacity to illuminate that (transformative) process, revealing a world of connectivity that is ever changing.

LAURA U MARKS

Associate Professor, Art + Culture Studies
School for Contemporary Arts
Simon Fraser University**ROUNDTABLE DISCUSSION:
Performing Art Performing Science**

Dr. Laura U. Marks is a media theorist and curator and Associate Professor in the School for the Contemporary Arts, Simon Fraser University, Vancouver, Canada. She is the author of *The Skin of the Film: Intercultural Cinema, Embodiment, and the Senses* (Duke University Press, 2000) and *Touch: Sensuous Theory and Multisensory Media* (Minnesota University Press, 2002). She has recently been involved in researching Arab and African mathematics for alternative models of digital culture. In 2004 she curated the Experimental Media from the Arab World film program for Images Festival 2004 and three programs of Arab documentary and experimental works for the San Francisco Cinematheque in November 2004.

SARAH RUBIDGE

Reader in Digital Performance,
University College Chichester**Fugitive Moments**

ABSTRACT The interplay between the environment, the body and consciousness is discussed extensively in both the arts and the sciences. J.J. Gibson's theories concerning ecological perception which acknowledge the interplay between the environment and perception, and the manner in which the former both acts upon and is acted upon by the perceiver are taking hold in a number of fields (e.g. Cognitive Science, Art, Architecture, Archaeology, Geography.) Gallese and his colleagues, Hadendoorn, B. Calvo-Merino, and his colleagues are exploring a set of neurons known as 'mirror neurons', the behaviour of which echo in the observer the neuronal behaviour of an observed actor when performing movements. Additionally neuroscientists such as Antonio Damasio have been investigating the way in which human consciousness is predicated on a number of interconnecting, often non-conscious, physiological systems, which act upon each other both in the act of perception and in acts of consciousness. In this presentation I will discuss the manner in which an intertwining of artistic experimentation and scientific investigations, along with a purpose built AI programme, might be used to generate a performative artistic environment, which can not only interact with the physiological systems of the viewer, but also simultaneously evolve in response to the behaviour of those systems. I will be using research-in-progress being undertaken by myself and neuroscientist Dr Beau Lotto of University College London as the framework for this paper.

JIM RUXTON

Co-Director, Subtle Technologies, Toronto
Co-authored with Stephen Morris,
Physics Department, University of Toronto**An Exploration of Patterns: A
Transdisciplinary Approach**

ABSTRACT One of the mandates of the Toronto based organization, Subtle Technologies, is to bridge the divide, which exists between the arts and sciences. An opportunity arose through the "Off The Radar" program of the Canada Council for Subtle Technologies to invite a group of artists into the laboratory of physicist Stephen Morris at the University of Toronto. Morris's group studies the mechanisms responsible for the formation of emergent patterns that occur under non-equilibrium conditions. Specifically, some of the topics they study include Rayleigh-Bénard and Bénard-Marangoni convection, convection at chemical reaction fronts, crack patterns in drying mud, electroconvection in smectic liquid crystal films, Chladni patterns in vibrated plates, segregation of a granular medium in a rotating drum and Faraday waves. These techniques and phenomena are used to experimentally study how patterns form in nature. Since patterns are used by artists in various forms, it was apparent that introducing artists to a scientist who studies pattern formation was a logical window for them into some of the tools a scientist might use. When we talk about artists using "patterns" we use the term in a general sense so that we can think of choreography, painting or sound exploration as patterns. Artists include: a performance artist, industrial designer, painter, ceramics artist, video artist, software artist, surface designer, electronics and installation artist. We will share the experiences of the artists, and organizers of the workshop and discuss transdisciplinary collaboration.

JONATHAN SCHULL

Associate Professor of Information Technology, Rochester Institute of Technology

Co-authored with Stephen Jacobs, Assistant Professor, Rochester Institute of Technology

Reflections in a Global Brain

ABSTRACT This presentation is a demonstration of the increasingly popular notion that the internet is an “emerging global brain” harboring humanity’s collective unconscious. The World Wide Web was explicitly designed to mirror the workings of the human mind by facilitating trans-global hyperlinks that connect associated concepts and projects spanning the entire planet. By analyzing this global network of associations, with particular weight to the most robust and widespread of these associations, the creators of Google were able to produce a search engine with an uncanny ability to “guess” and “respond” to the intentions behind our loosely specified queries, leading to the increasingly popular Is this just a clever and useful trick, or a harbinger of an emerging sentience? During our presentation, audience members will form and express their own opinions while pondering imagistic reflections of, and by, the global brain itself. Using custom group conferencing software, the words that Schull speaks and types, and the words typed by the audience will all continuously query the Google Images database and generate a dynamic stream-of-consciousness visualization that will accompany, inform, illuminate, disrupt, comment upon, and amusingly undermine the linear content of this lecture.

RICHARD VAUGHAN + POUYA BASTANI

Richard Vaughan, Assistant Professor, Autonomy Lab,

Pouya Bastani, Undergraduate Research Student, Autonomy Lab,

School of Computing Science, Simon Fraser University

Misbehaviour

ABSTRACT Robotics researchers have come to understand that the behaviour of a robot system is a function of its physical construction, the environment in which it finds itself, and its control program. However, simultaneous with the growth in popularity of this view there has been an increasing use of the word ‘behaviour’ to refer to a subroutine in a robot controller, the word designating a set of instructions rather than the outcome of those instructions as they are executed. An analogy might be the difference between the choreographed steps of a dance and a one-time performance in a certain theatre on a certain night. After devising a robot experiment to illustrate the various meanings of ‘behaviour’ in a robot system, several questions emerged: When do performance and behaviour converge? How does behaviour emerge within an environment? Is there a difference between perceived behaviour and the control program or instructions? To what extent to behaviour and performance make something ‘life-like’? This presentation/ demonstration will begin to address our understanding of behaviour in the robot system.

DANIEL WEEKS

Chair, Department of Psychology, Simon Fraser University

The Acquisition of Physical Skills

ABSTRACT The acquisition of skill is fundamental to our existence and throughout life we endeavor to develop new skills and refine those already acquired. Success in any physical activity depends upon the performer’s ability to acquire and hone a unique set of perceptual, cognitive and motor skills. This presentation will review the work of scientists interested in examining how we learn physical skills and who have expertise in diverse fields including ballet, field hockey, soccer, basketball, volleyball, gymnastics, microsurgery and laparoscopic surgery. Elite and novice performers in these fields have been studied to determine the attributes of experts that are linked to essential component abilities and those that are determined by experience within a particular domain. Another interesting development has been the emergence of literature on the practice patterns of highly skilled performers (e.g. athletes, surgeons) as a tool for prescribing training regimes for novice performers.

TRANSNET RESEARCH TEAM

TransNet is an international network of artists, scholars, performers, educators, scientists, engineers, and community activists formed to explore notions of performance, especially in the arts and sciences. The network uses a transdisciplinary approach to analyze the intersection of diverse disciplines and knowledges and to examine how new research directions emerge from this confluence. TransNet suggests that performance, of people and of systems, is the primary activity in an exchange across societies and cultures, with new technologies and the human body as common denominators for these exchanges.

HENRY DANIEL, Principal Investigator
School for the Contemporary Arts
Simon Fraser University

MARTINE EPOQUE
Professor and Director, LarTech
Department of Dance
University of Quebec at Montreal

JOHANNES BIRINGER
Senior Research Fellow
School of Art and Design
Nottingham Trent University

NORMA SUE FISHER-STITT
Associate Professor
York University

CAROL BROWN, Artistic Director
Carol Brown Dances
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Humanities Research Board (AHRB), UK

David Kaufman, Professor
Faculty of Education, Director, LIDC
Principal Investigator
SAGE for Learning Project
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ANGELA PICCINI
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THANKS TO THE FOLLOWING SPONSORS

**IRMACS Centre (Interdisciplinary Research in the Mathematical and Computing Sciences),
Simon Fraser University**

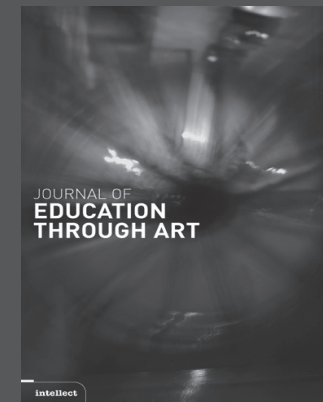
Office of the Vice-President, Research, Simon Fraser University

Office of the Vice-President, Academic, Simon Fraser University

School for the Contemporary Arts, Simon Fraser University

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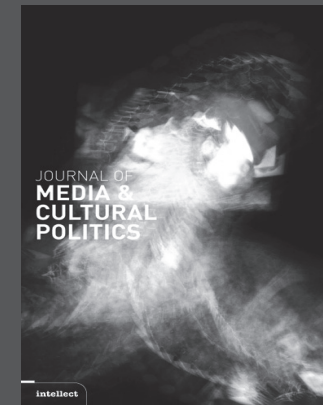
intellectjournals2005



Education through Art

ISSN 1743-5234
3 nos/vol
First volume 2005

The International Journal of Education through Art is a new English language journal that promotes relationships between the two disciplines. The journal comprises refereed texts in the form of critical essays, articles, exhibition reviews and image-text features. Particular emphasis is placed on articles and visual materials that critically reflect on the relationship between education and art. The editorial content proposes original ways of rethinking the status of education and art education, while addressing the role of teaching and learning in either formal or informal educational contexts – and alongside issues of age, gender and social background.



Media & Cultural Politics

ISSN 1740-8296
3 nos/vol
First volume 2005

The International Journal of Media and Cultural Politics publishes work that directly addresses 'real world' affairs, relates different cultures and societies, and aims to bridge the gap between theoretical/abstract knowledge and cultural and social practice. The journal wishes to rejuvenate the tradition of ideological critique in writing about the media and culture, and expand aspirations toward genuine international comment. The journal is particularly interested in scholarship that debates the nexus of communications, culture and politics.



Performance Arts & Digital Media

ISSN 1479-4713
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