
# AISB Convention 2015

# University of Kent, Canterbury

## Proceedings of the AISB 2015 Symposium on Embodied Cognition, Acting and Performance

Edited by Mark Bishop, Deirdre McLaughlin, Experience Bryon and Marco Gillies

ISBN: 978-1-908187-54-3

# Introduction to the Convention

The AISB Convention 2015—the latest in a series of events that have been happening since 1964—was held at the University of Kent, Canterbury, UK in April 2015. Over 120 delegates attended and enjoyed three days of interesting talks and discussions covering a wide range of topics across artificial intelligence and the simulation of behaviour. This proceedings volume contains the papers from the *Symposium on Embodied Cognition, Acting and Performance*, one of eight symposia held as part of the conference. Many thanks to the convention organisers, the AISB committee, convention delegates, and the many Kent staff and students whose hard work went into making this event a success.

—Colin Johnson, Convention Chair

# Contents

# Image theatre and digital story-telling: Towards a research method called 'Collaborative Embodied Participant Analysis' (CEPA)

**Michael Carklin**[1]

This paper reports on research that I have been undertaking investigating the use of image theatre and digital storytelling with groups of university staff to gauge their thoughts, perceptions and experiences of the creative industries in higher education. In piloting these approaches as research methods specifically, I have been interested in comparing the responses that emerge from such active, participatory activities, which have ideas of embodied cognition at their centre, with the kind of material that emerges from focus groups and one-to-one interviews.

As an academic and manager within a faculty of creative industries, the overarching focus of my research has been on critically exploring aspects of the rise of this multidisciplinary field within higher education. In our current HE context, much credence is given to student voice; my concern with staff voice being marginalised or lost within institutional decision-making has led me to search for research approaches which might help to articulate the multiplicity of thoughts and views of staff. At the same time, such approaches help to address three key challenges: a) carrying out insider research in a faculty in which I also hold a management position; b) subverting the dominant language of the meeting room which is often filled with jargon and cliché; and c) contributing to encouraging dialogue and interaction amongst staff across disciplines within the faculty.

I have called the method that I am piloting 'Collaborative Embodied Participant Analysis' (CEPA), which has involved critically re-investigating each of these constituent terms. Practically, the method is initially rooted in an active, participatory drama-based approach known as image theatre, seeking to investigate how applying processes of embodied meaning-making and interpretation, linked to a heightened need for reflexivity by the participants, might lead to insights and perspectives that would differentiate this approach from other, more dominant research methods. At its core is the notion of collaboration in meaning-making, but also in interpretation and re-interpretation. Participants collaborate with other participants, but are also collaborative research partners to some degree. And fundamentally, this collaboration is carried out through a physical, embodied, drama-based process.

An extension of this work has involved digital story-telling in which, following a recorded interview in a meeting room, individual academic staff are recorded talking about their approaches to teaching and learning within the actual spaces that they normally teach in. This is useful in extending notions of embodiment through the linking of experience to place and space; investigating the impact of being physically present in a space on the ways those participants might think about and articulate their experiences.

In both cases – the image theatre and the digital storytelling – we are concerned with performance which demands a physical engagement and interaction. Whilst participants are not actors per se, there are levels of enaction and physical expression demanded which open up further possibilities for considering relationships between embodiment, experience and understanding. This paper highlights the ways in which the various facets of these activities might be qualitatively analysed and understood.

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# Stanislavsky's Mindful Actor: The System as a Guide to Experiencing Embodiment

**Ysabel Clare**[1]

**ABSTRACT.** This paper proposes that embodiment, ostensibly the subject of the second part of Stanislavsky's actor training course [1] [2] actually forms the experiential foundation on which the first [3] [4] is based, and provides the framework and the terms of reference around which the whole is designed. Discovering how this framework underpins the work elucidates meaning by exposing conceptual and actual relationships between experiencing and embodiment, opening up new possibilities for the understanding and thus the practice of both.

The concepts of *Perezhivanie* (experiencing) and *Voploshchenie* (embodiment) are central to Stanislavsky's work. Both resist verbal description, definition or explanation. Stanislavsky has addressed this problem with considerable strategic ingenuity in his fictionalized training diaries. Examining how he did so provides practical insights into how to recognize, learn, teach, and facilitate embodiment.

Research comprising detailed analysis of the action outlined in these texts has uncovered complex narrative patterning evidencing underlying conceptual constructs that, once revealed, clearly articulate an embodied experiential framework. The most complete text, *An Actor Prepares*, is not just a series of exercises with justifications and explanations, but a subtle and nuanced sequence of actions and effects (in a Socratic, dialogic form of exercises and responses) cleverly engineered to deliver a systematic encounter with an orderly underlying model of subjective (and necessarily embodied) experience.

This implicit conceptual framework both originates in and is a re-presentation or projection of human experience. Original diagrams are supplied that in turn re-present the deep structure of Stanislavsky's model in its own terms, graphically illustrating its roots in embodiment. These demonstrate the irrevocable conceptual links between the core concepts of *Perezhivanie* and *Voploshchenie*, showing how they can be operated to create and maintain a stable, coherent state in which the actor is dynamically experiencing embodiment: mindful - 'in the moment'.

Stanislavsky's underlying model is consistent with an experiential realist view such as that of Lakoff and Johnson [5]. While superficially different, it also shares deep structure with other contemporary frameworks for understanding human process, such as those of Pinker [6], Damasio [7] and Fauconnier [8]. Stanislavsky, however, shows us how to manipulate the phenomena of human process deliberately, at will. While language might not serve his purpose, and he cannot actually give the reader of his books an embodied experience, he does the next best thing by cleverly engineering the form and the narrated events. In this reading, results are as important as exercises, for the patterns in which the fictional students' responses occur express essential aspects of embodied experience that otherwise resist description.

In conclusion, the paper asserts that despite the passing of time, Stanislavsky still has something to contribute to actor training in the 21st Century because he offers practical strategies for actors to learn, manage and manipulate their embodied experience for the purpose of mindful performance.

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# Better Than Life; testing techniques for an online audience to influence and participate in a live performance

**Nicky Donald, Marco Gillies**

**Abstract.** This work introduces the mixed reality show Better Than Life, testing techniques for an online audience to influence and participate in a live performance.
This show combines aspects of online multiplayer game, live theatre and reality television. Participants described it as immersive theatre, Alternate Reality Game (ARG) and Live Action Role Play (LARP).
The aim is to provide a set of interaction mechanisms for the online users to affect the storyworld in real time, alongside the data gathering and analysis tools to assess the ludic/narrative effectiveness and user experience of those mechanisms.

## 1 INTRODUCTION

Goldsmiths worked with Coney, who make live games and Showcaster, who stream live events. Coney created a storyworld of a cult built around the clairvoyant Gavin, testing new recruits for psychic abilities. These tests were designed by Pan Studios, who worked alongside magician Jon Armstrong to create two classic pieces of stage magic, a substitution and a disappearance. The participants in the live studio space were the recruits, and the online participants were tasked with choosing which of them would lead the cult on Gavin's departure.

The interactions had to form a seamless part of the narrative; the user interface had to enable a feeling of participation in the live event and the storyworld. This meant a very fast signup and entry process, so users could start watching and interacting very quickly. This in turn meant that we had to gather user data on-the-fly with short simple questionnaires that didn't detract from the flow of the live experience. We also looked to engender a feeling of presence and embodiment through multiple avenues:

- Online users could navigate the space by switching cameras at will, discovering additional locations, actors and scenarios.
- They could influence the action by means of live chat and mouse movement.
- They could chat to each other (often sharing things seen on other cameras) to actors (influencing their script and costume) and to live participants after the show (piecing together a shared picture of the show).

## 2 LATENCY

At two points online users' movements were captured. During a group breathing exercise, mouse movements became a DMX value controlling the brightness of lights in the real space. In the finale we projected a spot of light that embodied each user, moving as they moused over the video. In both instances, we were faced with an extremely variable system latency, i.e. the interval between an event in the live space and its appearance in the viewed video feed at remote locations was completely unpredictable. This was down to several factors:

- The commercial servers used to stream the data were under pressure from the World Cup and Wimbledon 2014 coverage and associated live streams.
- The commercial infrastructure (ISPs) delivering data to users was under similar pressure
- Users were viewing through a variety of domestic, office, public and academic connections rated at differing speeds
- Users were using a variety of devices and platforms, from hard-wired desktop machines to handheld devices operating on wifi.

This meant that the gap between an online users movement and the resulting scenographic change was subject to a similar delay. When we asked for concerted action, the input was spread over a period of between 10 and 60 seconds.

## 3 PERFORMERS

The actor playing Gavin was improvising constantly, incorporating input from the online users, addressing the online and live groups individually and simultaneously, maintaining a complex narrative with other actors and performing a vanishing act.

## 4 DATA

We collected a very large data set from 70 live and 262 online participants over 8 shows in a three-week period. Some of this data has to be animated since it is too complex and multidimensional for conventional visualisation. The initial findings are that the online experienced a growing social presence and collective agency, a sense of sharing and doing, which exceeded that of the live participants.

## 5 CONCLUSIONS & FUTURE WORK

Going forward, we want to model much larger user numbers and implement the technology in adventure games for heritage sites that connect small groups of visitors with large numbers of online participants in homes and classrooms.

# The Cognitive Dynamics of Performance Generating Systems: Deborah Hay through Christopher House

**Pil Hansen**[1]

**Abstract.** Performance generating systems are rule- and task-based dramaturgies that systematically set in motion a self-organizing process of dance or theatre creation. The resulting performance is not generated from the performers' impulses or choices, as in the case of improvisation, but rather from the ways in which a system directs, limits, and adapts the performers' conscious attention, perceptions, and interactions. At present we are unable to archive and remount these systems. The reason is that a valid blueprint needs to capture the dramaturgical and cognitive principles through which the systems generate performance instead of recording the actual performance that is danced or acted.

*Performance Generating Systems* (an international research project hosted by the University of Calgary) seeks to develop a tool for dramaturgical analysis and notation based on Dynamical Systems Theory; a tool that enables dramaturgs and scholars to script the most relevant components of performance generating systems and the dynamics of interaction and perceptual manipulation they generate. This paper will outline the project and present its first case study, the DST analysis and notation of Christopher House's (Toronto Dance Theatre) adaptations of Deborah Hay's solo performance scores.

Expressed in cognitive terms, Hay's scores and praxis challenge the performer to continuously and consciously register a larger and less selective amount of perceptual stimuli than normative cognitive processing involves. Otherwise implicit reliance on memory in the present is inhibited and replaced with attempts to avoid accumulation, patterning, sequencing, anticipation, and other forms of recycled movement responses to stimuli. The task is impossible; self-organizing movement patterns are attracted over time, yet the attempt results in a differently earned presence.

Hay articulates her praxis as a belief system. Thus one of my main challenges when applying DST to the work of Hay and House is to honour both their vocabulary and my observations of the embodied cognition of this praxis, while using DST to distill principles of performance generation that can be transferred between artists over time. In other words, I am negotiating the interdisciplinary positions of specificity versus generalization in search of an operational, and dramaturgically productive, compromise.

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# Acted Emotion: a performance experiment in psychology and actor training

**David Jackson**

Robert Harnish's 'narrow construal' of cognitive science envisages the mind as a kind of computer, a model that is closely related to efforts to build artificial intelligence. His 'broad construal' expands this definition to incorporate, in addition to computer science, philosophy, anthropology, neuroscience, psychology and linguistics. Each of these disciplines approaches the human mind from a different perspective, generating a wide range of theoretical models. It seems that the mind is such a complex topic that efforts to understand its workings tend to transcend the limits of a single discipline. Recent studies of brain architecture suggest that it is not just disciplinary boundaries that are collapsing under the weight of new discoveries. Hard and fast distinctions between cognition and emotion are also under threat. The work of neurologists Joseph LeDoux and Antonio Damasio demonstrates not just the interaction of thought and emotion, but also the role of the body in both cognition and feeling. Emotion and the body, therefore, must be welcomed into the fold of cognitive studies.

The explosion of interest in emotion research over the last twenty years has generated a host of ground-breaking accounts which place the emotional process in an ecological and somatosensory context. Moreover, new technology and research methods have developed to facilitate the investigation and understanding of the topic. These developments create an ideal climate for a reassessment of the specialised function of emotion in acting and performance and for addressing some key questions of long-standing theoretical and practical interest: what is the nature of acted emotion? Is it different from spontaneously occurring emotion? Do actors feel the same emotions as their characters?

This paper offers a timely response to this propitious moment for addressing the area of acted emotion. It outlines some of the influential theories that dominate discourse in the scientific and performance research communities, thus establishing the context for an investigation of the topic. I describe an innovative 'Performance Experiment', a term

which deliberately combines the language of science and performance. Using video documentation, I discuss the experiment in terms of its two principle aims: firstly, comparing two strategies for arousing and expressing emotion, (Method Acting and Alba Emoting) and secondly, integrating research methodologies drawn from psychology and actor training. Student actors engage with a series of exercises and I assess their impact using a range of techniques, including both self-report and external observation.

Finally, I present the results of the data analysis and consider a number of related questions: which technique has a greater impact on the actors from a phenomenological, physiological and observer's perspective? Is there a difference between actors' perception of their emotions and the unconscious evidence provided by the body? Can such interdisciplinary investigation bring us closer to an understanding of the nature of acted emotion? Can performance practice inform science as much as science can inform performance practice?

# Enacting Desire: Constructing Social Flexibility through Somatic-informed Processes

**Thomas Kampe (PhD)**[1]

This paper discusses the facilitation of actor training as a holistic education effected through somatic-informed processes of embodiment. It will draw on applications of the work of Moshe Feldenkrais (1904-1984), understood as an enactive and ecological model of reflective self-creation through movement, within actor training contexts.

It examines the construction of a Feldenkrais-informed educational practice which draws on Feldenkrais' practices of 'Awareness through Movement' and 'Functional Integration'. In addressing the themes of this conference, this paper considers Doidge's (2015) writings on neuroplasticity which places Feldenkrais' non-dualist practices, within the development of 'flexible minds' (Feldenkrais 2010) and at the forefront of learning approaches that use embodiment as a vessel for transformation of brain functions.

The paper places Feldenkrais as a radical pioneer within the enactivist paradigm, whose practical educational modalities empower learners to access possibilities for 'self-education'(Feldenkrais 1992). This includes a heightened self-awareness and expressive potentiality, and an emerging 'Enactive Social Understanding' (Di Paolo et al 2014:60) of their lived environment. Feldenkrais developed a use of 'self-imaging' (Beringer 2001) within his practice, which is multi-modal and synergistic. It includes verbal and sensory imagery, motor-imagery as in imagining movement without moving, and an 'enactivist approach to imagery' (Thomas 2011) where sensation and image are generated through movement and self-observation in interaction with the material and social environment.

More so, this paper explores the probing of underlying assumptions and principles informing the above practices as modes for an embodied co-creation of the actor as a flexible, relational and desiring social creature. It examines Feldenkrais-specific notions of thoughtful-doing as felt-embodied enquiry, Feldenkrais' use of touch-interaction as a questioning of the cognitive closure of the human being, his 'theory of reversibility'(Feldenkrais 2010), and his eco-proposition of a 'functional unity between body, mind, and environment' (2005:149) - environment understood as a bio-psycho-social structuralisation - as departure points for creative pedagogic inquiry.

Ultimately, this paper argues for a construction of a Feldenkrais-informed practice as a critical, transformative and emancipatory pedagogy which questions hierarchical and reductionist modes of actor training. It suggests that such pedagogy supports a co-enactive process of 'organic learning' (Feldenkrais 1981) that facilitates conditions for shared artistic inquiry.

Performance theorist Gesa Ziemer asserts that such conditions for embodied inquiry 'where linguistic eloquence is being slowed down, where we are disoriented and touched at the same time to perceive something'(2009) are socially transformative and empowering for the participants. In his discussions with Richard Schechner, Feldenkrais (2010[1972]) proposes that such slowing-down enables the actor to engage in 'an awareness of action' which fosters 'greater clarity and ease', a capacity to 'listening to the other person' and the possibility for 'rediscovery', which for Feldenkrais provides the potential towards a bio-psycho-social flexibility and the forming of new behavioural patterns.

The paper suggests that an acquired Feldenkraisian flexibility which includes psycho-social competencies and a heightened ability of a 'learning to learn'(Feldenkrais 2010), supports the student actor in their personal, creative and professional development. The author draws on practice-led research, his own pedagogical practice, and on student-feedback from the BA Acting program at Bath Spa University, while referring to writings by Moshe Feldenkrais, social-theorist Cornelius Castoriadis(2005,2011) and ecologist Edgar Morin (1999;2007) - all three informed by the paradigm of Autopoiesis (Varela 1995,1999).

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# Watergait:

# Designing Sense Perceptions for Individual Truth

**Esthir Lemi, Marientina Gotsis, Vangelis Lympouridis**[1]

**Abstract.** *Watergait* is an experimental meditation in the form of a sonified experience of walking with shoe sensors that translate shifting foot pressure into sound within an aural environment. This experiment was collaboratively designed by three artists, Esthir Lemi, Marientina Gotsis and Vangelis Lympouridis, influenced by different yet complementary theoretical, aesthetic, and technical domains. The quintessential adage for all three artists is best summarized by the sentence: "all sense perceptions are true" and a mutual adoration of water-related themes and design minimalism. Perhaps not by coincidence, our mutual ethnic backgrounds kept bringing us back to implicit knowledge and shared context of history and experiences that informed our design and pre/post discussion of the experiment.

In this essay, we explore Epicurean tradition, holistic design models, empirical dialectic systems, historical uses of water as a playful theme, and its implications in human computer interaction. The instrumentation of Watergait depends on some "objective" truths that had to be measured and be agreed upon. The sensing array of the shoes measure pressure. Placed right below the insoles and imperceptible to the wearer, the pressure sensors send data to the computer via Bluetooth®technology. What follows is a philosophical perspective of design on how sensing and art intersect through human-computer interaction, and why some contextual bridge between the two is needed.

The ancient Greek philosopher Epicurus advocated for the awakening of the senses through mindful observation of the felt and sensed experience (Letter to Menocoes and Herodotus). For Epicurus, relative and absolute truth can coexist while trying to make sense of the world from a human-centered point of view as he presents one of the first integrative viewpoints of psychology and perception, placing value in how belief influences perception and thus introducing the placebo effect as a quantifiable unknown that produces an effect and contributes to one's own perception of reality. This type of discourse is legitimized through everyday habits toward the pursuit of happiness. While manufacturing happiness, or pleasure, does it matter what the signal is or does it matter more what it is being perceived as, or does it matter at all? We, the artists of Watergait wanted to immerse participants into a simple narrative fantasy through the aural environment and to enable them to follow a path that can excite their imagination through the senses. Making the apparatus simple makes it more prone to several interpretations, and therefore more successful to stimulate the imagination.

Lastly, we discuss the manifested coincidence of summoning our mutual "otherworldly" experience within water: an encounter with whales, which started in the virtual and happened in real life.

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# Participatory enaction of music: Key points towards radicalizing the notion of embodiment in music

**Juan Loaiza 1**

Cognition -sense-making- is an affective-laden activity that takes place across 'brain, body, and environment' [1], [2], [3]. Strong naturalistic –yet non reductive- claims about the continuity between life and cognition distinguish Enactivism from other theories and implementations of the notion of embodiment [4]. Enactivism, in 'Varela style', rejects the received view of the body as contingent and the social environment as contextual, a view still held by 'mentalists' conceptualizations of embodiment. Enactivism, on the contrary, sees the body as continuously constitutive of sense-making processes [2], [3], [4], [5] and social interaction as the domain where 'higher cognitive processes' –such as linguistic use- take place [6].

The presentation will explore the idea that an enactive notion of music embodiment needs to be qualified by the introduction of a more precise –naturalized- definition of (social) Participation. This definition requires repositioning the level of analysis within the social encounter. Enactivism offers a refined account of participatory sense-making that does not reduce cognitive processes to the aggregate of pre-given individual agents; moreover, it offers an understanding of interactions as autonomous and generative in their own terms [6], [7], [8]. Thus, starting from a social level of analysis, Musicking (a term coined by Small 1998 [9]) is rethought as a class of enactive participation vis-à-vis other participatory genres such as Languaging.

The presentation will expand the discussion with some contrasting points:

"Biographical" vs. "snapshot": Critique to narrow time scales. The snapshot-like, laboratory approach to understand musical activity makes it easier to assume the individual experience as paradigmatic. In contrast to this, an ecologically valid approach brings to the foreground an agent's history of social relationships and patterns of participation.

Enactive organisms vs. "epistemic minds": Critique to mentalist and skull-bound explanations of cognition. Accounts of musical experience often portray the individual finding herself as if left in the middle of an opaque environment that has to be disentangled via mental epistemic moves. Enactivist approaches, in contrast, dis-localize cognition emphasizing the co-constitution of active autonomous organisms and its medium via sense-making.

Complex and adaptive vs. "tidy" ordered systems: Critique to linear approaches to musical interaction. Theorizations and practices often rely on tight modeling and prediction; these however lack the flexibility to address social dynamics. Interactions may be better understood within its own emergent normativity and relative autonomy.

The presentation will bring to the table Enactive notions that stretch beyond the sensorimotor approach to music cognition, namely: agency, autonomy, emergence, identity, sense-making.

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# The Embodied Brain: An Argument from Neuroscience for Radical Embodied Cognition

**Julian Kiverstein**[1], **Mark Miller**[2]

**Abstract.** In this programmatic paper we develop an account of embodied cognition based on the inseparability of cognitive and emotional processing in the brain. We argue that emotions are best understood in terms of action readiness [1, 2] in the context of the organism's ongoing skillful engagement with the environment [3, 4, 5]. States of action readiness involve the whole living body of the organism, and are triggered by possibilities for action in the environment that matter to the organism. Since emotion and cognition are inseparable processes in the brain it follows that what is true of emotion is also true of cognition. Cognitive processes are likewise processes taking place in the whole living body of an organism as it engages with relevant possibilities for action.

## 1 Introduction

Our aim in this paper will be programmatic. We propose a definition of embodied cognition based on the inseparability of emotional and cognitive processes in the brain [6]. Our argument has the following three steps:

(1) Cognition is embodied because cognition and emotion are inseparable processes in the brain.
(2) Emotion is a dynamic process involving the organism's whole body.
(3) From the inseparability of emotion and cognition in the brain it follows that cognition is likewise a dynamic process involving the organism's whole body.

We align ourselves with proponents of radical embodied cognition in endorsing the non-decomposability of the brain-body-environment system. We take this thesis to be implied by the functional integration of emotional and cognitive processing in the brain. We show how recent research concerned with large-scale patterns of connectivity in the brain challenges a decompositional analysis of the brain into regions and components that carry out either emotional or cognitive psychological functions. The current evidence points instead to a theory of brain processes as complex, non-linear, self-organizing processes composed of "intricately interconnected, interacting elements" [7]. We find interconnection, interaction and mutual influence among components (or neural regions) resulting, we argue in processes that are simultaneously both cognitive and emotional.

How can we make an argument from the non-decomposability of cognitive and emotional processes within the brain to the non-decomposability of the larger brain-body-environment system? We begin by providing a tweak to psychological constructionist theories of emotion which interpret the integration of cognitive and emotional neural processes in terms of interactions between domain general neural networks [8]. We suggest (following arguments developed by Luiz Pessoa [9]) that structure-function mappings are not fixed and static properties of networks. Instead structure- function relationships are dynamic, with the functions a given network performs varying over time in a context-dependent manner. It is the latter finding which we take to support the non-decomposability of the brain-body-environment system. To determine the precise functional contribution a network is making to behavior requires zooming out, and having in view the whole organism in its interaction with the environment. Emotional-cognitive processes don't only take place inside of brains, but are processes that involve constant interaction between the brain and the whole living body of the organism in an ecological setting.

The first two steps in our argument establish the inseparability of emotion and cognition in the brain and the deep dependence of emotional processes on the whole body of the living organism in its practical skilled engagement with the environment. We take these two steps to imply a third step: the conclusion that cognitive processes depend on the whole living body in its practical and skilled engagement with an environment of affordances.

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# Stanislavski's System and a Dual-Process Approach to Performer Training

**Grant Olson**[1]

**Abstract.** Konstantin Stanislavski's (1863-1938) development of actor training and performance methodology, which he called 'the system', has significantly shaped modern performance theory and practice. Stanislavski was keenly aware that a majority of human experience was shaped by processes not normally available to what he understood as conscious thought. Stanislavski was particularly interested in the role non-conscious processes could be harnessed to achieve his goal of reaching *perezhivanie,* or experiencing through a role. Subsequently, as he developed his approach towards actor training and rehearsal methodology he aimed to access what he considered the unconscious through conscious preparatory methods. In Stanislavski's understanding, he further divided the unconscious into a subconscious equated with instinct, and a superconscious that he associated with intuition. Most of what is currently understood of as intuition finds support in a dual or multiple processor theory of cognitive analysis. William James (1842-1910) first predicted a concept of a multiple or dual processing system in *Principles of Psychology* (1890) wherein he proposed one system of rational thought or true reasoning, and another devoted to impulse or associative thought. As advances in Cognitive Studies have increased understanding in cognitive function, a consensus has emerged of an acceptance of a dual or multiple processing systems divided between the so-called System 1 or fast and intuitive processes, and the System 2 slower analytical processes. This paper identifies several of Stanislavski's theories showing potential correlations with current understandings related to dual-process theories. In addition, I propose several approaches found in Stanislavski's methodology that hold potential to develop an actor's System 1 processing abilities as related to intuition in performance. Moreover, I identify gaps in Stanislavski's system that could benefit from alterations in methodology that would bring his approach in line with current understandings of the dual processing theory of cognitive function. Incorporating approaches aimed at developing the System 1 or fast processing system of cognition into the methodology of performer training and practice holds potential into strengthening performer skills once relegated to the numinous realm of an actor's intuition. In addition, further insight gathered from the performance situation offers a greater understanding of the role emotional response plays in judgement formation and cognitive function.

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# Attempts on Margarita (multiple drafts): A cognitive dramaturgy generated by voice and space

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**Abstract.** In the dynamic contemporary theatre and performance landscape of 'immersive', hybrid and interactive production where the boundaries between public and private, performance space and audience space intertwine, alternate or even disappear, scenography is referred to as a process. [1] [2]

The above observation poses a series of questions regarding the critical frameworks that could be used in order to analyse scenography as process and the methods that might be employed to contribute to the creation of dynamic scenographic landscapes where the audience becomes an active co-author of the work.

Through my practice-led research at the University of Leeds I am suggesting a method of staging dynamic scenographic systems using current cognitive theories of consciousness (Baars, Dennett, Edelman and Tononi). These performance-systems engage with the concepts of process, integration of information and complexity inviting the participants to interact in a dynamic bottom-up way with the work.

In the piece 'Work Space I- a scenographic workshop on consciousness' I appropriated Baars' diagram of consciousness known as the Global Workspace [3] to create a workshop-installation in which the participants are invited to share the experience of a performance-game and contribute to the hands-on creation of a multi-authorial artwork.

By reflecting on the above work, which draws and explores the notion of embodiment and the 'socially collaborative, culturally and materially grounded nature of the human mind' [4] I focused on the 'dialogue through making' that occurred during the time of the workshop.

In another practice-led investigation ' Work Space II - Attempts on Margarita (multiple drafts)' I am drawing from Martin Crimps' *postdramatic* work 'Attempts on her Life' and the cognitive theories of consciousness by Dennett, Edelman and Tononi in order to create a multi-layered cognitive dramaturgy in the form of an installation space. A current view on the hard problem of consciousness, largely initiated by neuroscientist/psychiatrist Giulio Tononi, is that 'wherever there's information processing, there's consciousness' [5] In the piece 'Attempts on Margarita (multiple drafts)' aim is to generate a *collective consciousness* in the form of a durational, sound installation by mixing information such as pre-recorded and live - stream voices generated by three types of participants:

- P1: a) Friends/colleagues/acquaintances of mine and b) random passers-by in the university campus who answer the same set of questions regarding 'Margarita'.
- P2: Participants-audience who attended the installation.
- P3: A group of artists working with sound, devising and objects in the main installation space.

In this paper I will focus on the post-show discussion with the participant artists (P3) on their experience of the installation. I will refer to their comments of their experience as 'a reflective space' and of the 'ethics that can be established by a space'. Using as critical framework enactive cognitive science and the ideas of an ecologically extended and socially engaged mind I will then try and analyse this multi-layered process scenography.

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# Extended Body in the Telematics Performance: the perceptual system of remote dancers

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**Abstract.** This article discusses some artistic proposals of Telematic Performances that explore the relationship of human bodies in distributed dances. Besides several titles of this dance configuration that we can find in the bibliography of this field, we prefer to keep the traditional designation of telematic dance to configure the composition of movements created with bodies (subjects) distributed through discrete nodes from a network and that interact with each other in some level in real time. The dancers can be distant from each other, or be in the same room, what matters is that communication between the nodes must be performed over the network. The nature of this field is a fluid reality, a constant transformed environment where the human being (i.g. the dancer) and her/his milieu (i.g. the network) are co-evolutive, co-dependent and mutually implicated. This article is grounded on the concepts of "Extended Mind" and "Cognitive Artefact" [3, 4], "Actionism" [6, 7] and "Body Image" and "Body Schema" [5]. This approach contributes to re-think the notion of (tele)presence, time, space, distance and of the body (the self). Through these comprehensions we should understand the new perceptual demands from which dancers have to deal with in the context of telematic dance. This new art configuration promotes different sensorimotor experiences than the stage-based dance environment, it affords different skills to the dancers, because this is a transformative art that validates this fluid reality. The discussion of telematic dance will be made through the analyses of the project *"EVD-58 / Embodied Varios Darmstadt 58"* which was created in collaboration with artists from Mexico and Spain (2013), and Portugal and Chile (2014). EVD-58 was created to develop the concept of "(tele)sonorous body" from the theoretical and aesthetic point of view, and to explore the telepresence beyond the relation with the image. The research about sonorities in my artistic process in telematic context began in 2011 and was deepened during the investigation in my post doctoral at the Sonic Arts Research Centre (UK). In this article, it is assumed that a human being knows the world through her/his sensorimotor skills when s/he interacts with the environment [6] and understand the milieu. The digital culture brings some important transformations which are embodied including the notions of negotiation, construction, context and distributed mind which overlap the conventional ideas of reception, representation, content and autonomous brain [1, 2]. Our action in face of telepresence brings different ways of how to perceive one another and how to perceive oneself, because the body image and body schema play an active role in shaping our perceptions [5]. During my trajectory working with Telematic Dance since 2001, my goal has been to investigate new relationships between remote dancers in performances embedded into this digital culture.

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## The Pleasure of Not Finding Things Out: Dramaturging with Boundary Objects

Freya Vass-Rhee

**Abstract.** The work of the dramaturg is usually thought of as a practice of helping a director or ensemble to reconcile, refine, and consolidate ideas into a coherent scenic whole. However, in the work of devising dance and theatre, by contrast, neither highly specified task distribution nor acute communicative coordination are necessarily required or even desired. Instead, as in the dramaturgical practice of choreographer William Forsythe and his ensemble, dramaturgy is a distributed phenomenon in which informational sharing is deprioritized in favor of an opening the work of devising to flexibility and change. In this talk, I evoke Star and Griesemer's concept of *boundary objects*—things or concepts which, although jointly deployed by members of a community, are utilized differently by different participants – to describe how The Forsythe Company's dramaturgy, rather than involving an informational "pooling" typically associated with ensemble dramaturgical practice, instead entails a radical and verbally reticent spreading of concepts that unsettles the practice of dramaturgy, while simultaneously calling the dramaturg's function into question. My analysis also reveals how Forsythe's ensemble's practice exemplifies a reversal of the trajectory towards informational coherence that typifies problem-solving, and in doing so, highlights and critiques key aspects of devising and improvisational work in theatre.

# The Embodiment of Sound in an Intermedial Performance Space

**Dr. Caroline Wilkins**[1]

**Abstract**

*Digital technology has merely reinforced the importance of the human body and the physical in live performance.* [2]

In this paper I aim to describe the working process of a creative collaboration between electronics composer Oded Ben-Tal[3] and myself as performer, involving interactive audio technology. Methods, tools, terminologies and subjective experience all present some meta-technical issues that will be raised with regard to a project essentially embedded in the medium of sound theatre (a performance concept that draws attention to the phenomenological qualities of sound, music and theatre) and installation.

Coming from a background of theatre, performance and acousmatics, I shall examine the work from the perspective of these disciplines. Documenting the process of exchange at each stage allowed for an ongoing analysis of methods that were used to facilitate communication and developmental procedure within the larger context of a multimedia performance project. As an example of developing performance practice, this took the form of a choreographic installation encompassing dance, video, animation, visual design and virtual worlds, and was entitled *Ukiyo: Moveable Worlds* http://people.brunel.ac.uk/dap/ukiyo.html

I will focus on the use of language and systems as cognitive tools for research, as well as on some phenomenological aspects of performing together with technology, such as acting / reacting, action / sound, 'self / other'. Meta-technical ideas will be explored with regard to the spatial and temporal considerations involved in this kind of process: the acoustic, the three-dimensional, absence/presence of a sound source and its evolving relationship with the visual elements of performance. According to post-human philosophy it is these parameters of technology, belonging to a cognitive system, that have caused our human functionality to expand.[4]

In this case the key sound sources stemmed from a bandoneon (a musical instrument similar to the accordion) and the voice. They were combined with choreographic movement and a wearable costume that incorporated wired and wireless systems of amplification into its design. Sounds of an acoustic nature were thus transformed through the use of technology, into several *extended* instruments in space. This shared artistic space, where audience, performers and sound are considered in a parallel relationship, offers a very different premise for a work's reception and perception when compared to traditional performance practice. What is seen is not necessarily heard (and v. v.) and certainly not experienced in the same way by all.

My presentation will include a performance of some of the live sonic material followed by recordings of its electronic transformation into a re-embodied form.

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