LEA is a publication of Leonardo/ISAST.

LEONARDO®
THE INTERNATIONAL SOCIETY FOR THE ARTS, SCIENCES AND TECHNOLOGY

Sabancı Üniversitesi

Goldsmiths
UNIVERSITY OF LONDON

LEONARDO ELECTRONIC ALMANAC

VOL 18 NO 3 VOLUME EDITORS **LANFRANCO ACETI, JANIS JEFFERIES, IRINI PAPADIMITRIOU** / EDITORS **JONATHAN MUNRO** AND **ÖZDEN ŞAHİN**

Touch and Go is published in collaboration with Watermans and Goldsmiths College in occasion of the Watermans' International Festival of Digital Art, 2012, which coincides with the Olympics and Paralympics in London. The issue explores the impact of technology in art as well as the meaning, possibilities and issues around human interaction and engagement. *Touch and Go* investigates interactivity and participation, as well as light art and new media approaches to the public space as tools that foster engagement and shared forms of participation.

TOUCH AND GO

LEONARDO®
THE INTERNATIONAL SOCIETY FOR THE ARTS, SCIENCES AND TECHNOLOGY

FACT

Sabancı Üniversitesi

Goldsmiths
UNIVERSITY OF LONDON

Leonardo Electronic Almanac
Volume 18 Issue 3
August 2012
ISSN 1071-4391
ISBN 978-1-906897-18-5
The ISBN is provided by Goldsmiths, University of London.

LEA PUBLISHING & SUBSCRIPTION INFORMATION

Editorial Address
Leonardo Electronic Almanac
Sabanci University, Orhanli – Tuzla, 34956
Istanbul, Turkey

Email
info@leoalmanac.org

Web
» www.leoalmanac.org
» www.twitter.com/LEA_twitts
» www.flickr.com/photos/lea_gallery
» www.facebook.com/pages/Leonardo-Electronic-Almanac/209156896252

Leonardo Electronic Almanac is published by:
Leonardo/ISAST
211 Sutter Street, suite 501
San Francisco, CA 94108
USA
Leonardo Electronic Almanac (LEA) is a project of Leonardo/The International Society for the Arts, Sciences and Technology. For more information about Leonardo/ISAST's publications and programs, see http://www.leonardo.info or contact isast@leonardo.info.

Leonardo Electronic Almanac is produced by Passero Productions.

LEONARDO ELECTRONIC ALMANAC, VOLUME 18 ISSUE 3

Touch and Go

VOLUME EDITORS
LANFRANCO ACETI, JANIS JEFFERIES, IRINI PAPADIMITRIOU

EDITORS
JONATHAN MUNRO, ÖZDEN ŞAHİN

Watermans International Festival of Digital Art, 2012

***Touch and Go* is a title that I chose together with Irini Papadimitriou for this LEA special issue.** On my part with this title I wanted to stress several aspects that characterize that branch of contemporary art in love with interaction, be it delivered by allowing the audience to touch the art object or by becoming part of a complex electronic sensory experience in which the artwork may somehow respond and touch back in return.

With the above statement, I wanted to deliberately avoid the terminology 'interactive art' in order to not fall in the trap of characterizing art that has an element of interaction as principally defined by the word interactive; as if this were the only way to describe contemporary art that elicits interactions and responses between the artist, the audience and the art objects.

I remember when I was at Central Saint Martins writing a paper on the sub-distinctions within contemporary media arts and tracing the debates that distinguished between electronic art, robotic art, new media art, digital art, computer art, computer based art, internet art, web art... At some point of that analysis and argument I realized that the common thread that characterized all of these sub-genres of aesthetic representations was the word art and it did not matter (at least not that much in my opinion) if the manifestation was material or immaterial, conceptual or physical, electronic or painterly, analogue or digital.

I increasingly felt that this rejection of the technical component would be necessary in order for the electronic-robotic-new-media-digital-computer-based-internet art object to re-gain entry within the field of fine art. Mine was a reaction to an hyper-fragmented and indeed extensive and in-depth taxonomy that seemed to have as its main effect that of pushing these experimental and innovative art forms – through the emphasis of their technological characterization – away from the fine arts and into a ghetto of isolation and self-reference. Steve Dietz's question – *Why Have There Been No Great Net Artists?* [1] – remains unanswered, but I believe that there are changes that are happening – albeit slowly – that will see the sensorial and technical elements become important parts of the aesthetic aspects of the art object as much as the brush technique of Vincent Willem van Gogh or the sculptural fluidity of Henry Moore.

Hence the substitution in the title of this special issue of the word interactivity with the word touch, with the desire of looking at the artwork as something that can be touched in material and immaterial ways, interfered with, interacted with and 'touched and reprocessed' with the help of media tools but that can also 'touch' us back in return, both individually and collectively. I also wanted to stress the fast interrelation between the art object and the consumer in a commodified relationship that is based on immediate engagement and fast disengagement, touch and go. But a fast food approach is perhaps incorrect if we consider as part of the interactivity equation the viewers' mediated processes of consumption and memorization of both the image and the public experience.

Nevertheless, the problems and issues that interactivity and its multiple definitions and interpretations in the 20th and 21st century raise cannot be overlooked, as much as cannot be dismissed the complex set of emotive and digital interactions that can be set in motion by artworks that reach and engage large groups of people within the public space. These interactions generate public shows in which the space of the city becomes the background to an experiential event that is characterized by impermanence and memorization. It is a process in which thousands of people engage, capture data, memorize and at times memorialize the event and re-process, mash-up, re-disseminate and re-contextualize the images within multiple media contexts.

The possibility of capturing, viewing and understanding the entire mass of data produced by these aesthetic sensory experiences becomes an impossible task due to easy access to an unprecedented amount of media and an unprecedented multiplication of data, as Lev Manovich argues. [2]

In *Digital Baroque: New Media Art and Cinematic Folds* Timothy Murray writes that "the retrospective nature of repetition and digital coding—how initial images, forms, and narratives are refigured through their contemplative re-citation and re-presentation—consistently inscribes the new media in the memory and memorization of its antecedents, cinema and video." [3]

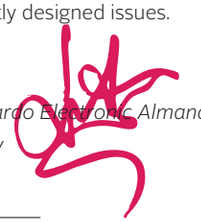
The difference between memorization and memorialization may be one of the further aspects in which the interaction evolves – beyond the artwork but still linked to it. The memory of the event with its happening and performative elements, its traces and records both official and unofficial, the re-processing and mash-ups; all of these elements become part of and contribute to a collective narrative and pattern of engagement and interaction.

These are issues and problems that the artists and writers of this LEA special issue have analyzed from a variety of perspectives and backgrounds, offering to the reader the opportunity of a glimpse into the complexity of today's art interactions within the contemporary social and cultural media landscapes.

Touch and Go is one of those issues that are truly born from a collaborative effort and in which all editors have contributed and worked hard in order to deliver a documentation of contemporary art research, thought and aesthetic able to stand on the international scene.

For this reason I wish to thank Prof. Janis Jefferies and Irini Papadimitriou together with Jonathan Munro and Özden Şahin for their efforts. The design is by Deniz Cem Önduygu who as LEA's Art Director continues to deliver brilliantly designed issues.

Lanfranco Aceti
Editor in Chief, Leonardo Electronic Almanac
Director, Kasa Gallery



1. "Nevertheless, there is this constant apparently inherent need to try and categorize and classify. In Beyond Interface, an exhibition I organized in 1998, I 'datamined' ten categories: net.art, storytelling, socio-cultural, biographical, tools, performance, analog-hybrid, interactive art, interfacers + artificers. David Ross, in his lecture here at the CADRE Laboratory for New Media, suggested 21 characteristics of net art. Stephen Wilson, a pioneering practitioner, has a virtual – albeit well-ordered – jungle of categories. Rhizome has developed a list of dozens of keyword categories for its ArtBase. Lev Manovich, in his Computing Culture: Defining New Media Genres symposium focused on the categories of database, interface, spatialization, and navigation. To my mind, there is no question that such categorization is useful, especially in a distributed system like the Internet. But, in truth, to paraphrase Barnett Newman, "ornithology is for the birds what categorization is for the artist." Perhaps especially at a time of rapid change and explosive growth of the underlying infrastructure and toolsets, it is critical that description follow practice and not vice versa." Steve Dietz, *Why Have There Been No Great Net Artists? Web Walker Daily* 28, April 4, 2000, http://bit.ly/QjEWIY (accessed July 1, 2012).
2. This link to a Google+ conversation is an example of this argument on massive data and multiple media engagements across diverse platforms: http://bit.ly/pGgDsS (accessed July 1, 2012).
3. Timothy Murray, *Digital Baroque: New Media Art and Cinematic Folds* (Minneapolis: University of Minnesota Press, 2008), 138.

ISSN 1071-4391 ISBN 978-1-906897-18-5
ISSN 1071-4391 ISBN 978-1-906897-18-5

Touch and Go: The Magic Touch Of Contemporary Art

It is with some excitement that I write this preface to Watermans International Festival of Digital Art, 2012. It has been a monumental achievement by the curator Irini Papadimitriou to pull together 6 groundbreaking installations exploring interactivity, viewer participation, collaboration and the use or importance of new and emerging technologies in Media and Digital Art.

From an initial call in December 2010 over 500 submissions arrived in our inboxes in March 2011. It was rather an overwhelming and daunting task to review, look and encounter a diverse range of submissions that were additionally asked to reflect on the London 2012 Olympic and Paralympic Games. Submissions came from all over the world, from Africa and Korea, Austria and Australia, China and the UK, Latvia and Canada and ranged from the spectacularly complicated to the imaginatively humorous. Of course each selector, me, onedotzero, London's leading digital media innovation organization, the curatorial team at Athens Video Art Festival and Irini herself, had particular favorites and attachments but the final grouping I believe does reflect a sense of the challenges and opportunities that such an open competition offers. It is though a significant move on behalf of the curator that each work is given the Watermans space for 6 weeks which enables people to take part in the cultural activities surrounding each installation, fulfilling, promoting and incorporating the Cultural Olympiad themes and values 'inspiration, participation and creativity.'

Some, like Gail Pearce's ***Going with the Flow*** was made because rowing at the 2012 Olympics will be held near Egham and it was an opportunity to respond and create an installation offering the public a more interactive way of rowing, while remaining on dry land, not only watching but also participating and having an effect on the images by their actions. On the other hand, Michele Barker and Anna Munster's collaborative ***Hocus Pocus*** will be a 3-screen interactive artwork that uses illusionistic and performative aspects of magical tricks to explore human perception, senses and movement. As they have suggested, "Magic – like interactivity – relies on shifting the perceptual relations between vision and movement, focusing and diverting attention at key moments. Participants will become aware of this relation as their perception catches up with the audiovisual illusion(s)" (artists statement, February 2011). Ugochukwu-Smooth Nzewi and Emeka Ogboh are artists who also work collaboratively and working under name of One-Room Shack. ***UNITY*** is built like a navigable labyrinth to reflect the idea of unity in diversity that the Games signify. In an increasingly globalized world they are interested in the ways in which the discourse of globalization opens up and closes off discursive space whereas Suguru Goto is a musician who creates real spaces that are both metaphysical and spiritual. ***Cymatics*** is a kinetic sculpture and sound installation. Wave patterns are created on liquid as a result of sound vibrations generated by visitors. Another sound work is Phoebe Hui's ***Granular Graph*, a** sound instrument about musical gesture and its notation.

ISSN 1071-4391 ISBN 978-1-906897-18-5

Audiences are invited to become a living pendulum. The apparatus itself can create geometric images to represent harmonies and intervals in musical scales. Finally, Joseph Farbrook's ***Strata-caster*** explores the topography of power, prestige, and position through an art installation, which exists in the virtual world of Second Life, a place populated by over 50,000 people at any given moment.

Goldsmiths, as the leading academic partner, has been working closely with Watermans in developing a series of seminars and events to coincide with the 2012 Festival. I am the artistic director of Goldsmiths Digital Studios (GDS), which is dedicated to multi-disciplinary research and practice across arts, technologies and cultural studies. GDS engages in a number of research projects and provides its own postgraduate teaching through the PhD in Arts and Computational Technology, the MFA in Computational Studio Arts and the MA in Computational Art. Irini is also an alumni of the MFA in *Curating* (Goldsmiths, University of London) and it has been an exceptional pleasure working with her generating ideas and platforms that can form an artistic legacy long after the Games and the Festival have ended. The catalogue and detailed blogging/documentation and social networking will be one of our responsibilities but another of mine is to is to ensure that the next generation of practitioners test the conventions of the white cube gallery, reconsider and revaluate artistic productions, their information structure and significance; engage in the museum sector whilst at the same time challenging the spaces for the reception of 'public' art. In addition those who wish to increase an audience's interaction and enjoyment of their work have a firm grounding in artistic practice and computing skills.

Consequently, I am particularly excited that the 2012 Festival Watermans will introduce a mentoring scheme for students interested in participatory interactive digital / new media work. The mentoring scheme involves video interviews with the 6 selected artists and their work, briefly introduced earlier in this preface, and discussions initiated by the student. As so often debated in our seminars at Goldsmiths and elsewhere, what are the expectations of the audience, the viewer, the spectator, and the engager? How do exhibitions and festival celebrations revisit the traditional roles of performer/artist and audiences? Can they facilitate collaborative approaches to creativity? How do sound works get curated in exhibitions that include interactive objects, physical performances and screens? What are the issues around technical support? How are the ways of working online and off, including collaboration and social networking, affecting physical forms of display and publishing?

As I write this in Wollongong during the wettest New South Wales summer for 50 years, I want to end with a quote used by the Australia, Sydney based conjurers Michele Barker and Anna Munster

> *Illusions occur when the physical reality does not match the perception.* [1]

The world is upside down in so many alarming ways but perhaps 2012 at Watermans will offer some momentary ideas of unity in diversity that the Games signify and ***UNITY*** proposes. Such anticipation and such promise!

Janis Jefferies
Professor of Visual Arts
Goldsmiths
University of London, UK

23rd Dec 2011, University of Wollongong, NSW, Australia

1. Stephen L. Malnik and Susana Martinez-Conde, *Sleights of Mind: What the Neuroscience of Magic Reveals about our Everyday Deceptions* (New York: Henry Holt and Company, 2010), 8.

ISSN 1071-4391 ISBN 978-1-906897-18-5

Leonardo Electronic Almanac

Volume 18 Issue 3

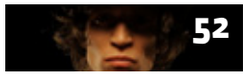
4 **EDITORIAL** Lanfranco Aceti

6 **INTRODUCTION** Janis Jefferies


10 **SUGURU GOTO, CYMATICS, 2011 – AN ACTION SHARING PRODUCTION** Simona Lodi & Luca Barbeni
+ SUGURU GOTO in conversation with Paul Squires

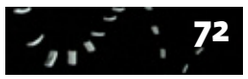

30 **INTERACTIVITY, PLAY AND AUDIENCE ENGAGEMENT** Tine Bech

44 **UNITY: IN PURSUIT OF THE HUMANISTIC SPIRIT** One-Room Shack Collective
+ ONE-ROOM SHACK COLLECTIVE in conversation with Evelyn Owen


52 **HOKUSPOKUS** Michele Barker & Anna Munster

58 **AS IF BY MAGIC** Anna Gibbs

60 **BLACK BOXES AND GOD-TRICKS: AN ACCOUNT OF USING MEDICAL IMAGING SYSTEMS TO PHOTOGRAPH CONSCIOUSNESS IN THE CONTEXT OF A DIGITAL ARTS PRACTICE** Eleanor Dare

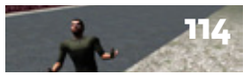

72 **CO-AUTHORED NARRATIVE EXPERIENCE: AFFECTIVE, EMBODIED INTERACTION THROUGH COMBINING THE DIACHRONIC WITH THE SYNCHRONISTIC** Carol MacGillivray & Bruno Mathez

84 **UNTITLED** Phoebe Hui
+ PHOEBE HUI in conversation with Jonathan Munro

98 **GOING WITH THE FLOW**
GAIL PEARCE in conversation with Jonathan Munro


102 **THE SWEET SPOT** Graeme Crowley in collaboration with The Mustard and Blood Orchestra

108 **STRATA-CASTER: AN EXPLORATION INTO THE TOPOGRAPHY OF POWER, PRESTIGE, AND POSITION** Joseph Farbrook
+ JOSEPH FARBROOK in conversation with Emilie Giles


114 **WHERE IS LOURENÇO MARQUES?: A MOSAIC OF VOICES IN A 3D VIRTUAL WORLD** Rui Filipe Antunes

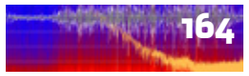
ISSN 1071-4391 ISBN 978-1-906897-18-5

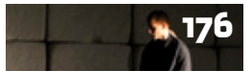

122 **GEOMETRY**
FÉLICIE D'ESTIENNE D'ORVES in conversation with Claire Le Gouellec

130 **THE EMPOWERING POTENTIAL OF RE-STAGING** Birgitta Cappelen & Anders-Petter Andersson


140 **SCENOCOSME: BODY AND CLOUDS**
Grégory Lasserre & Anaïs met den Ancxt

154 **LIGHT, DATA, AND PUBLIC PARTICIPATION**
Dave Colangelo & Patricio Davila


164 **INCARNATED SOUND IN MUSIC FOR FLESH II: DEFINING GESTURE IN BIOLOGICALLY INFORMED MUSICAL PERFORMANCE**
Marco Donnarumma

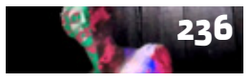

176 **THE STORY OF PARCIVAL: DESIGNING INTERACTION FOR AN INTERDISCIPLINARY DANCE PERFORMANCE** Gesa Friederichs-Büttner & Benjamin Walther-Franks

190 **INTERACTION'S ROLE AS CATALYST OF SYNTHESIZED INTELLIGENCE IN ART** Judson Wright


200 **IN SEARCH OF A DIGITAL MASTERPIECE (OR TWO): STANZA**
Maria Chatzichristodoulou [aka Maria X]


212 **TELEMATIC TOUCH AND GO**
Ellen Pearlman, Newman Lau & Kenny Lozowski

224 **HAPTIC UNCONSCIOUS: A PREHISTORY OF AFFECTIVITY IN MOHOLY-NAGY'S PEDAGOGY AT THE NEW BAUHAUS**
Charissa N. Terranova


236 **THE GESTALT OF STREET TEAM: GUERRILLA TACTICS, GIFS, AND THE MUSEUM** Charissa N. Terranova

240 **BIOGRAPHIES**

250 **ACKNOWLEDGEMENTS**

ISSN 1071-4391 ISBN 978-1-906897-18-5

Interactivity, Play and Audience engagement

by

Tine Bech

www.tinebech.com

Catch Me Now by Tine Bech, Kinetica Art Fair, 2011.

"Play is the swing of the rhythm in music, the bounce in the ball, the dance that delivers us from the lockstep march of life. It is the "meaningless" moment that makes the day memorable and worthwhile." (Brown, 2010: 43)

INTRODUCTION

A growing number of artists today are pushing forward the exploration and understanding of audience engagement. As new technologies emerge, different ways to creatively interact and collaborate emerge with them. There is a blurring of the boundaries between artists, audiences and participants which promotes new ways of interacting.

This paper will focus on the making of playful interactive artworks, as an affective model for audience engagement. The paper is based on my artistic practice and draws on my PhD research at the Digital Cultures Research Centre (DCRC) UK. [1] My practice-based doctoral research focuses specifically on the development of a play directory showing the different kinds of play initiated through interactive artworks, in order to create a model for making playful interactive art installations, which will inform my own and future artists making of artworks. The model is concerned with creating immersive and playful art experiences and is linked to play theory and interactive art practices. Through my own practice and others it looks at how we can create conditions or possibilities for play within and around interactive artworks. Ultimately, the model aims to connect people with their immediate environment, the artwork and with each other.

The intention in making a model for creating playful interactions is not to define a good or successful interactive artwork. What is of interest to me is the interactive behavior elicited by the artwork; what kind of play takes place? How do a material's inherent properties and affordances play a role in how the audience play or interact? And equally, how does a space's inherent properties play a role in how the audience play or don't? How do the levels of legibility of the artwork enable or hinder interaction? How can I create collaborative interaction if needed? These questions are the focus of my PhD research.

This paper argues that 1] interactive art or media art should turn its attention to emphasize the issues that

art deals with rather than simply focusing on debates around the technology or medium used. 2] Interactive art is an important part of wider changes in contemporary art moving beyond representation to creating experiences. 3] It then suggests that embodied and playful experiences are an affective mode for audience engagement. 4] Finally it proposes a tentative model for *playing well* within an interactive art context.

INTERACTIVITY AND EMBODIED CONNECTIONS

The terminologies of media art or digital art are fluid (nomenclature) and reflect the changing nature of the field. For interactivity in terms of systems and authorship see Cornock & Edmonds (1973), Edmonds, Turner and Candy (2004), Haque, Dubberly and Pangaro (2009). For a cultural approach see Manovich (2001) and Dovey et al (2006), for game relations see Aarseth (2003) and Klastrup (2004), and for a curatorial discourse see Dietz (2000), Huhtamo (2007), Paul (2008) and Graham and Cook (2010). The exhibition *Decode* V&A 2009–10 also offered insight into the ongoing curatorial debate, by defining the exhibition in three sections: 1] Code 2] Network and 3] Interactivity – a similar three phased, more rigorous definition is offered by Graham and Cook.

From all the many ways of defining media art I want to emphasize those that use the body as a site for interactions. In other words interactive artwork (my preferred term) is defined as an artwork where the audience both physically and visibly interacts with the work. This "conversation is usually non-verbal and involves a dance of physical movements." [2] The artwork is defined by incorporating a person as part of the artwork and the focus is moved to the interactions between the audience and the artwork. This is ultimately

Fig 1. *Echidna* is an interactive sound sculpture, which uses an electro magnetic field to create a sound when the sculpture is almost touched. As a magnetic field reacts to water, the human body (around 60% water) is the ideal interface for *Echidna*.

ISSN 1071-4391 ISBN 978-1-906897-18-5

what my practice is concerned with – the dialogue between artwork and audience. The term 'interactive art' illustrates the dialogue of interaction that takes place in the in-between space, between artwork and the audience. Crucially, this leads to an understanding where interactivity is seen as a mode or behavior.

I consider physical participation or a bodily interface using movement as the nexus of audience engagement. While there is a long tradition within contemporary art of using movement to activate the viewer as well as an exploration of the body, for example land-art, performance, and social participatory artworks – the body as an interface is perhaps relatively new within participatory and interactive arts that employ technology.

Interactive artist David Rokeby sees the human interface as a method for accessing "a pool of content of unimaginable complexity." [3] My own use of interactive technology often tries to address the interplay between the digital and the physical, proposing the body as the membrane through which we must necessarily relate to the world.

It is this use of the body and movement in art that has enabled a move away from a visual representational communication to an actual (physical) connection. As explained here by Stiles and Shanken in the context of activating the viewer via motion and empathy:

> *..movement culminated when artists introduced the body in interaction with the viewer. This conjunction augmented a structural change in art (..and) drew the physiological processes underlying visual perception into the terrain of interactive contingency, and altered the communicative means of art from a dependence on metaphor to one of virtual and actual connection.* [4]

If we agree that the last century dealt with the art of representation by ways of seeing, then in this century art is an exploration into experiences: "through interactivity, contemporary artists mirror, distort, and confuse the audience's experience not of representation but of reality itself." [5] For example, artist Scott Snibbe's interactive artwork opens the possibility for reshaping reality – away from seeing and towards a more visceral experience. Carsten Höller's series of slides is also an exploration of the world through the senses. Höller's slides initiate play by inviting the body into an experience of exhilaration and vertigo. The works are, using Roger Caillois definition 'ilinx,' an "attempt (to) momentarily destroy the stability of perception." [6]

Dorothea von Hantelmann supports this and argues in the *Test Site* catalogue that these new works can be seen as 'experiences creation,' which signals:

> *A fundamental shift in the way in which the meaning of an artwork is understood; from a level of intention, expression or content to a dimension of effect and experience; from what an artwork 'says' to what it 'does'.* [7]

In other words there is a shift taking place in which artworks are moving away from the traditional representation of statements towards artworks which produce experiences and behaviors.

ISSN 1071-4391 ISBN 978-1-906897-18-5

ARTICLE

DON'T JUST STAND THERE

This brief (and selective) history proposes the body and the creation of experiences as a particular mode of interaction, one that involves gestures, touching, moving etc. These kinetic interactions are a distinct mode of interactions where the body is activated into play such as jumping, dancing, running; what in turn, and crucially for this paper's context, a play anthropologist such as Geoffrey Bateson would read as play behavior. Indeed, movement is the most primal element and is found in all forms of play. Through the playful body we structure our understanding of the world – "we think in movement." [8] This embodied interactive play is reminiscent of Roger Caillois' play categories of 'illinix' and 'paidia' with its intervention of:

> *happy exuberance which effects an immediate and disordered agitation, an impulsive and easy recreation, but readily carried to excess, whose impromptu and unruly character remains its essential if not unique reason for being. From somersaults to scribbling, from squabble to uproar, perfectly clear illustrations are not lacking of the comparable symptoms of movements, colors, or noises.* [9]

Play within interactive art has historic links to Dada and Fluxus, where artists often used play (absurdities, audacities and trickery) as a means to engage the audience and transform the experience of art. The concept of art as a transformative tool is an old tradition in the visual arts. This has also been aided and enabled by new technologies; as Mary Flanagan notes "shifts in play have historically mirrored shifts in technologies." [10] These technological developments (in particular sensors, cameras, and tracking technology) have been part of a shift in contemporary culture which has moved us into an era of participation and interaction – we have become players in the gallery, moving away from a *stand back, look, don't touch* audience to an active participating culture. In this context play is a persuasive and powerful tool. It can change people's behavior and inspire audiences to interact, rather than simply observe. In fact the "hallmark of play is that anyone can do it." [11]

TECHNOLOGY AS MATERIAL

There is an extensive and continuing debate around the use of technology and new media within contemporary art and it is only briefly touched on here. More insight can be found in: Quaranta (2011), Graham and Cook (2010), Arns (2007), Stiles and Shanken (2010), Christiane Paul (2008), Huhtamo (2007), Dietz (2005), CRUMB and Rhizome discussion lists, Manovich (1996). Much of the debate is about the specificity of technology and the field of media art, or what perhaps now is *post*-media art. My approach is that of 'art after media,' [12] which critically, enables us to focus on the more important issues that art can highlight and not the medium or the newness of the technology. As Erkki Huhtamo writes:

> *Today interactive media is everywhere; its forms have become commonplace. It might be wise to turn attention from the modes and technologies of interaction to the themes and topics they can serve, highlight and criticize.* [13]

Artists today, I would argue, are fairly uninhibited in their choice of media and will mix technology with traditional contemporary materials [14] (for example a Duchampian style teapot augmented with technology to make it interactive, as seen with the *Chi-TEK* project (Fig. 5). Artists are connected to, and changed by, a world which is increasingly using technologies. The same point is made by Inke Arns who suggests that media art is not defined by its media but rather by its "content-related examination of our present" (2007: np). However more relevant for this paper, the approach of art after media [15] can, in my view, be linked to understanding technology as neither tool nor medium but rather as a material. Tom Armitage writes that "technology is not always a tool, an engineering substrate; it can be something to mould, to shape, to sculpt with." [16] Armitage's viewpoint is similar to the long tradition in visual art of exploring materials. Technologies have affordances and properties just like any material and just as the grain of the wood allows me to make a particular kind of shape, so it is by understanding the grain of the technology, we can work with it or work against it (hack it) to create art. Materials have their own fascinations and desires and the immateriality of technology can be equally tactile and sensory. What is critical is that for artists today there is no either/or anymore, new digital materials are part of everyday life and are used in art together with the 'old' aesthetics.

Artists today, I would argue, are fairly uninhibited in their choice of media and will mix technology with traditional contemporary materials. Artists are connected to, and changed by, a world which is increasingly using technologies.

Seeing technology as a material not a tool, reminds me of the Japanese Automata which employs a similar methodology. These historical Japanese robotic dolls *Karakuri ningyo* are "mechanical devices to tease, trick, or take a person by surprise." Central to the Karakuri philosophy is that the technology is hidden and that it is combined with an art aesthetic, which aims to "evoke feelings and emotion." [17]

ISSN 1071-4391 ISBN 978-1-906897-18-5
ISSN 1071-4391 ISBN 978-1-906897-18-5

INTERACTIVE AND PARTICIPATORY PLAY BEHAVIOR

The notion to surprise, tease or trick is plentifully represented within art and particularly in art which involves human interaction of some kind. A good example is Michael Naimark's description of an artwork (unknown), which used a plank of wood, a hammer and cheap old-fashioned sharpened pencils – the kind with an eraser at the end, to create a playful audience interaction. He writes that most people would try to hammer the pencils in and found it difficult "mainly due to those damn erasers." [18] Naimark's example *plays well* with the audience. It also makes the case for "a much broader conceptual space for interactive art." [19] The playful behavior of the artwork highlights that we can use and play with any material and its affordances to create interactive art. Another example that demonstrates the range of play and interactive behavior is Maurizio Cattelan's work *Charlie*. *Charlie* is a boy on a tricycle moving around the gallery. The work behaves like an interactive work using sensors, camera and programming but instead plays a double game – the work is in fact controlled by a man with a remote control hiding around a corner, secretly playing with you – the audience. Cattelan's work uses subversion and plays with the distinction between art and audience interactions. I experienced *Charlie* myself and I took delight in being tricked, because, to me, it showed my own preoccupation with the technologies. I spent most of the time trying to figure out how the piece worked technically, only to walk around a corner and find the person with the remote who was controlling the work – and realize there was not a smart system reacting to my presence and movement. Others might very well feel displeasure at being tricked but to me the work illustrated all the different ways play is mobilised. It showed that play is something different for different people, which is, of course, why it is so hard to define.

My last example of play behavior within interactive art is Ross Phillip's *Videogrid*. The work consists of a large screen with multiple rectangles arranged into a grid showing short video sequences of the audience. The video clips continually loop until various patterns until another audience records over it. When I experienced the work at *Decode*, V&A 2009–10 audiences of all ages were interacting. People were clearly playing, making faces and inventing clever body movement and patterns for the video grids in response to the work. The work also encouraged dialogue among the audience (including those who did not know each other) and demonstrated the artist as a "skillful host" enabling strangers to interact in play. [20] There was a sense of exuberance and the audience *played well.*

These examples can also be understood in the context of participatory art theory (and Relational Aesthetics) with its links to co-creation. In this view the artwork rejects a static and singular worldview. The audience is part of the work and the meaning of the artwork is not always intrinsic to the artwork, or the artist's own self, but rather in the dialogue created within the relationship between artwork and viewer.

What participatory art and interactive art have in common is an aim to explore and push the boundaries of the audience/artist relationship. This is epitomized here by (participatory) artist Carsten Höller who is quoted saying: "You could say that the real material I'm working with is people's experience" [21] and (interactive) artist Golan Levin's reply, when asked what digital technologies allow him to do: "I can create 'behaviour.'" [22]

CATCH ME NOW

Catch Me Now (Fig. 2) is one of five research projects into the making of playful interactive artwork. The work is a unique interactive spotlight which plays with the audience. A small spotlight is moving randomly around on its own. When you catch the spot it will grow, enticing you to participate, creating possibilities for play and performance – and for the audience to step into the light and take center stage.

Fig 2. *Catch Me Now* at the V&A 2010 and Bath Illuminate 2012.

The work consists of a moving-head spotlight linked to a computer, which in turn is connected to a camera surveying the area. The programming language is OpenCV blob analysis and DMX. The work is programmed site-specifically for the exhibition space – often in a 'passer-by' space. When the spotlight is on its own e.g. not being played or interacted with, it is always a small spot (iris approx 30 cm) and moves occasionally, when it gets bored while roaming in its programmed play space. The spot reacts when a person steps into the light by immediately opening up into an encompassing spotlight, creating an individual personal spotlight moment. It then changes color and stays with the participant for a few seconds, before getting 'bored' and swooping away to resume a random position, becoming a small spot once again. The artwork is a 'chase me, catch me,' turning the conventional notion of a spotlight following you upside down. Two well-known artworks also using the material of a spotlight is Marie Sester's excellent artwork *Access* and Kma's *Flock*. [23]

The aim of *Catch Me Now* is to create a playful interactive light, which opens up the possibility for physical participation and play. A spotlight provides a known affordance (at least for most people) for performance.

ISSN 1071-4391 ISBN 978-1-906897-18-5
ISSN 1071-4391 ISBN 978-1-906897-18-5

It is an invitation to play. [24] Some materials look and feel intriguing; they are fun or sensory. Their affordance is playful, either because culturally we are familiar with the material as a play element (such as balloons, bold colors, and spotlights) or because the material has a playful appearance. A tactic to deliberately use certain sculptural material creates an opening into the work – it becomes an invitation and makes it easier for the audience to approach and people are less restrained. The link between the artist's material intelligence [25] and the artist's intentions (mine here is of play) are entwined in interactive artwork's behavior. Seeing technology as a material means that the interface can take on a sculptural feel.

When artists use objects in new ways, or hack technology and transform places, they create the unexpected. Artwork that reacts with a playful anthropomorphic life is liable to take us by surprise. This connects us with the work and we pay attention. It counteracts the mind's tendency to name and categorise our surrounding, without really looking. Richard Gold's paper *This is Not a Pipe* in which he uses the metaphor to describe the role of ubiquitous computing is interesting in this context:

> *Our pattern-matching mechanisms seem to make only a lazy distinction between the symbol and the symbolized. This is surely what allows advertising to work, not to mention art, literature, painting, erotica, and of course, language itself.* [26]

Making interactive art is much like planning a social event. We need to know how people might behave (act/play/perform) so that we, in the words of Krueger, can "anticipate the participant's possible reactions and compose different relationships for each alternative." [27] Graham, as mentioned above, suggests that the interactive artist's role is similar to that of a "party host" – a metaphor for "a role that may control the guests (tightly) or supply only the necessary social lubricants." [28]

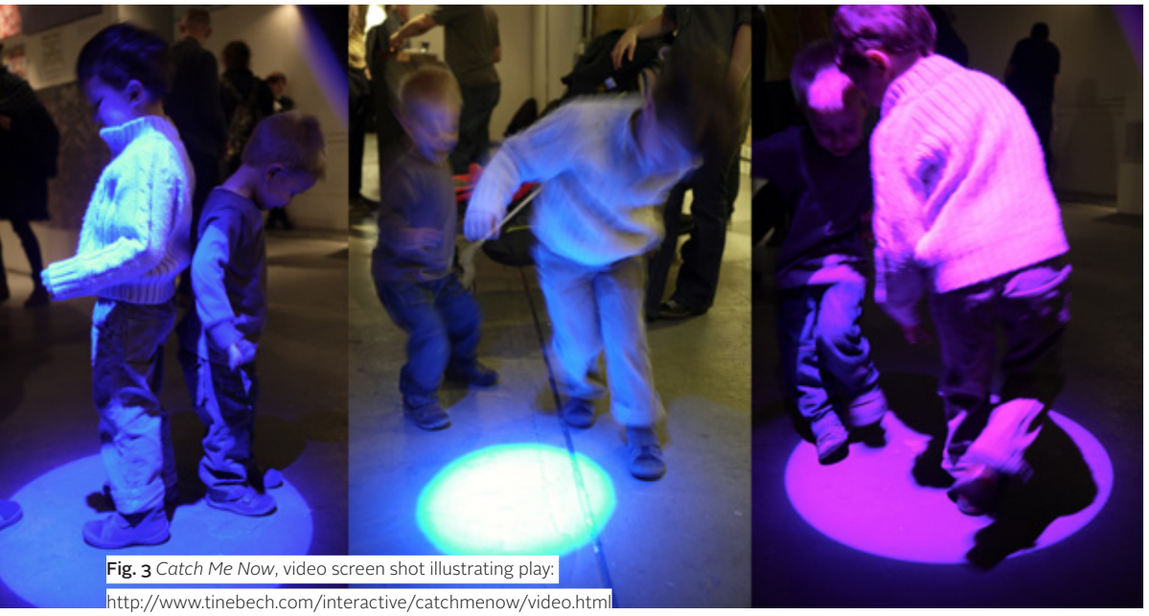


Fig. 3 *Catch Me Now*, video screen shot illustrating play: http://www.tinebech.com/interactive/catchmenow/video.html

ISSN 1071-4391 ISBN 978-1-906897-18-5

Catch Me Now (Fig. 2) facilitated a range of play forms. [29] Often people simply enjoyed running and catching the light with no greater purpose to their play other than the experience of it. In this context Csikszentmihalyi's theory of flow was unmistakably demonstrated. People would frequently stay with the work longer than they first intended – catching the light over and over again. The play was immediate; people would enter into play after observing others, or by stumbling upon the light. The instant the light (iris) opened up, people were captivated into staying with the work. Observation also showed interactions with a strong performance element such as 'strike a pose' and lots of 'look at me' and 'ta daaa! I caught the light.' The work clearly unlocked playful behavior; people would create fantasy play (some odd chicken impersonators were about at one point), make small impromptu dances or initiate physical demonstrations, such as cartwheels. Often competitive games developed when groups played together. When groups of children interacted, the dominant game would be who catches the light first, spotting where the light went and running fast. Some friendly stepping on toes and pushing others out of the light – 'it's mine' also happened.

The emerging play was noticeably different between adults and children. Children seemed to enter into play mode more quickly and the differences were also apparent in how long participants played; often children were called away by impatient adults after 10 minutes. I frequently overheard remarks such as 'one more go, then say bye-bye light' and replies 'nooo one more go please.' Adults playing were more tentative in their physical play and more often than not, a child would steal the light from the adult, who would gladly step back and let the younger person play. This tweet by an audience member attending Illuminate Bath 2012 illustrates the challenge in creating work in which adults allow themselves to play if children are playing: "Loved all the installations at @Illuminatebath tonight. Missed having a go on @t_bech Spotlight tomorrow = #moveoverchildren" (Tweet feed: @hannah_ab 25/01/2012). But as described earlier, adults do play and observation conducted at the Science Museum late nights, open to adults only confirmed this, as did this fun late night tweet from Illuminate Bath also: "Chased an interactive spotlight around Abbey Churchyard on the way home at 12.30am @Illuminatebath. Me and hubby giggling like kids" (Tweet feed: @ArtBathSpa 25/01/2012).

Fig. 4 *Catch Me Now*, girl doing cartwheels.

Catch Me Now does not facilitate narrative play (as in games) and there are no clear forward-driving goals or proceeding through levels. Rather, the work is open-ended, allowing the audience to put their personalities into the work and create their own (meaningful) experiences.

Since a key principal in my artist doctoral practice is to create play and agency, I use simple interfaces that match the skills of a general audience, in keeping with Csikszentmihalyi's theory of enjoyable experiences,

ISSN 1071-4391 ISBN 978-1-906897-18-5

which makes the case that flow takes places when the "actor's ability to act matches the requirements for action in his environment." [30] The work also needs to be readable, engaging the audience to participate – to respond to the call to action. For this reason I like using interfaces which require little conscious effort to activate the artwork (such as motion or sound sensors and imaging cameras), as well as an interface which invites a bodily interface. [31]

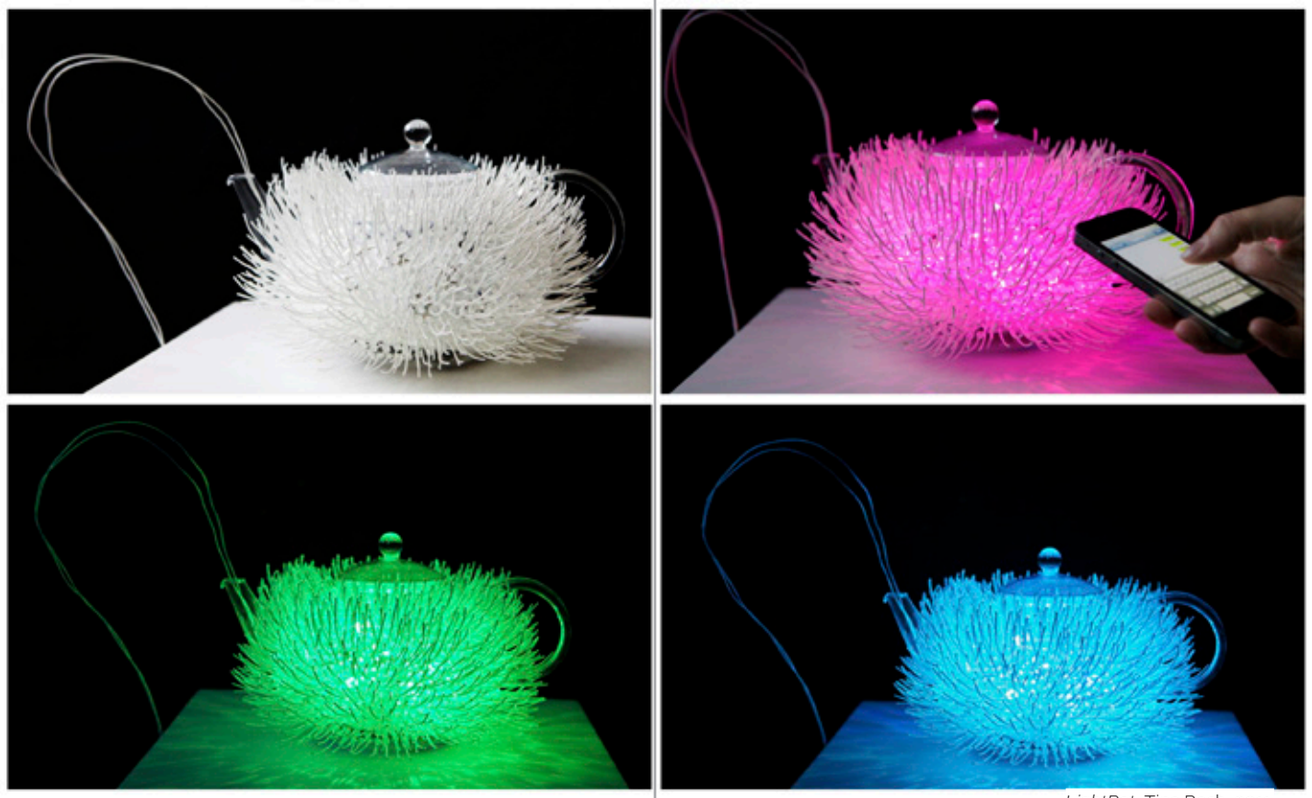
The interface also needs to be reliable and robust. It goes without saying that interactive art needs to actually work in order to be interacted with. A good experience is dependent on knowing that the environment is reacting. [32] There are those who believe that the 'out of order' sign at interactive exhibitions is a Dadaistic aspect of interactive art and should be read as part of the work i.e. sometimes it works, sometimes it does not. Personally, I find it creates great frustration if my own work or other artists' works do not want to play with me.

The question of who controls the artwork, the audience or the artist is debatable. As David Rokeby writes:

> *for many people, interaction has come to mean control. People look to interactive technology for empowerment, and such technologies can certainly give the inter-actor a strong sense of power.* [33]

> There is no doubt that materializing the audience's physical interactions enhances their engagement significantly. It creates a sense of victory – a 'Yay I caught it' moment. It is pointless (and the moment of victory impossible) if the audience is not made of aware of how the environment is responding to them. Beryl Graham also confirms this: "the primary pleasure of interactions is that of control, which is why the thwarting of audience control or the realization of token control is a site of such displeasure." [34]

However, it is important to acknowledge, as Rockeby states that the audience control over the interactions is often actually limited. I believe the artist is the creator and decides the frame for the agency. Artist's overriding methodology is to influence the viewers interactions through the material affordance, the code and the subject matter. The audience do not participate with an illusion of power; rather the ambiguous aspect of control is accepted as implicit and unspoken. This is Bateson's meta-message of play – we know we are playing: "The playful nip denotes the bite, but it does not denote what would be denoted by the bite." [35] When we play, we suspend our disbelief and treat our experiences as true (and serious), but nonetheless we do know that it is only play. The play paradox, according to Bateson, is that the experience is both real and not real at the same time.



LightPot, Tine Bech, 2011.

Fig. 5 *LightPot*, a woman showing her sense of victory after getting a teapot to change color by texting it during Chi-tek at the Victoria & Albert Museum's digital weekend 2011.

CONCLUSIONS

The Playful interactive artworks presented in the paper have been an exploration into creating playful interactive experiences through involvement of the body. This distinct mode of embodied play holds the possibility to delight, tease and empower us. It is the sense of 'victory' made possible by opening the artwork to participation, the feeling of exuberance we get when we enter into play with an interactive artwork that is *playing well* – playing well is akin to being alive and present. These modes of playful embodied interaction are worthy of further exploration. It is more than *hey let's play*; it is an exploration into visceral experiences – knowing the world through other modalities than the dominant visual media of our contemporary existence. When we accept an invitation to play, we invest in the moment – we care. It is important to recognize that while play is fun it is also serious, in fact research shows that our ability to recognize the play-signals of others (and of interactive art) establishes trust and helps us to adapt to the unexpected in a complex world, as Brown states. It's not about new technology but about creating art, which moves us and allows us to find new ways of engaging with people emotionally and socially – much like the old Japanese Automata. There are many social limitations in our daily lives that hold us back, but once we accept the invitation to play, we engage and our surroundings once again become open to possibilities! Play has the ability to break down social barriers and as such it is transformative. After all, we know that play is the most pervasive behavior across human culture. Embodied playful interaction has the potential to become a meaningful form of engagement. The invitation is there! ■

REFERENCES AND NOTES

1. Digital Cultures Research Centre is the hub for a network of researchers from across the University of the West of England. They work across Art & Design, Computer Sciences, Cultural & Media Studies and Geography to investigate the ways in which people make culture through their use of digital communications: http://www.dcrc.org.uk/about . The DCRC hub is the brainchild of Professor Jon Dovey. DCRC is based at the media innovation lab Pervasive Media Studio. The Studio is a unique environment where designers, artists and engineers share expertise to produce new experiences for media audiences.
2. Andrew Polaine, "Lowbrow High Art: Why Big Fine Art Doesn't understand interactivity," in *Proceedings of REFRESH conference*, 2005, http://www.polaine.com/playpen/wp-content/images/apolaine_whybigfineart_refresh_paper.pdf (accessed November 8, 2010).

ISSN 1071-4391 ISBN 978-1-906897-18-5
ISSN 1071-4391 ISBN 978-1-906897-18-5

ARTICLE

3. David Rokeby, "*The Construction of Experience: Interface as Content*," 1998, http://homepage.mac.com/davidrokeby/experience.html (accessed December 16, 2011).
4. Kristine Stiles and Edward A. Shanken, "Missing in Action: Agency and Meaning in Interactive Art," in *Context Providers: Conditions of Meaning in Media Arts*, eds. Margot Lovejoy, Victoria Vesna and Christiane Paul, 46 (Bristol, UK: Intellect, 2011).
5. G. Fifield, *Milwaukee Art Museum Presents the World Premiere of Act/React: Interactive Installation Art, (2008),* http://mam.org/info/pressroom/2008/10/mam-presents-the-world-premiere-of-actreact-interactive-installation-art/ (accessed January 20, 2012).
6. Roger Caillois, "The definition of Play and The Classification of Games," in *Rules of Play Game Design Fundamentals,* eds. Salen and Zimmerman, 138 (Cambridge, MA: MIT Press, 2006).
7. Dorothea von Hantelmann, "'I,'" in *The Unilever Series: Carsten Höller Test Site,* ed Morgan Jessica, 29 (London: Tate Publishing, 2006).
8. Stuart Brown, *Play: How It Shapes the Brain Opens the Imagination and Invigorates the Soul* (New York: Penguin Putnam, 2010), 84.
9. Caillois, "The definition of Play and The Classification of Games," *141*.
10. Mary Flanagan, *Critical Play Radical Game design,* (Cambridge, Mass: MIT Press, 2009), 262.
11. Brown, *Play: How It Shapes the Brain Opens the Imagination and Invigorates the Soul*, 20.
12. They are several writers and artists writing about 'Art after Media,' in particular see Beryl Graham and Sarah Cook, *Rethinking Curating*, 2010. Domenico Quaranta also states it is time to abandon the old bias between contemporary art and media art. He argues that the art formerly know as new media needs to become familiar with art history and that contemporary art curators must look at the art (not the media) and learn 'to look for art where it is not expected to exist' (Quaranta 2011: final chapter extract published online). Domenico Quaranta's book is in Italian but the abstract of the final chapter posted at Rhizome is in English. There is a review of the whole book by the bilingual writer Regine Debatty at her blog we-make-money-not-art.com.
13. Erkkki Huhtamo, "Trouble at the Interface 2.0," *NeMe*, 2007, http://www.neme.org/main/591/trouble-at-the-interface-2 (accessed November 20,2010).
14. If we continue from the above footnote then artist's material choices can be linked to previous debates about the divide between media art and gallery art, or in the words of Manovich: Duchamp-land (contemporary art exemplified by galleries and museums etc) and Turing-land (computer art represented at SIGGRAPH, ISEA, Ars Electronica, ZKM etc). According to Manovich, Duchamp-land is concerned with producing objects of art that are 'oriented towards the content, complicated' and often 'ironic' and 'self-referential, and often 'literally destructive attitude towards its material.' Turing-land or new media art on the other hand is oriented 'towards new, state-of-the-art computer technology,' it takes technology seriously and produces artworks that are 'simple and usually lacking irony' (Manovich 1996:1–2). Domenico Quaranta adds to the discourse that the contemporary art world critically does not see art as a method for research into the medium 'but as a powerful statement on the world we are living in' (2011:np). These statements are of course only a snippet of the debate, which is far less binary and far more complex. Furthermore both worlds have changed a lot over the 15 years – yet the debate seems to be ongoing still.
15. This is related to the wider debate about art, medium and technology: Art before media / Art with media / Art through media / Art after media.
16. Tom Armitage, "Technology As A Material," *infovore,* August 2011, http://infovore.org/archives/2011/08/22/technology-as-a-material/ (accessed August 30,, 2011).
17. Kirsty Boyle, "Karakuri.info: Robot Perspectives," *Karakuri.info,* January 14, 2008, http://www.karakuri.info/perspectives/index.html (accessed October 8, 2010).
18. Michael Naimark, "Interactive Art – Maybe It's a Bad Idea," 1997, http://www.naimark.net/writing/badidea.html (accessed April 20, 2010).
19. Ibid.
20. Beryl Graham, "Not a Show About New Technology a Show about Interaction," in *Serious Games: Art/Interaction/Technology*, eds. Carol Brown and Beryl Graham, (London: Barbican Art Gallery/Tyne and Wear Museums, 1996) http://www.immersence.com/publications/1996/1996-BGraham.html (accessed September 14, 2010).
21. Carsten Höller, "Carsten Höller: Reindeers & Spheres – Press Release," *Gagosian Gallery,* February 14, 2009, http://www.gagosian.com/exhibitions/january-10-2009--carsten-hller (accessed March 12, 2010).
22. Victoria & Albert Museum, *Decode* (London: Victoria & Albert Museum, 2010).
23. *Access* by Marie Sester (2003) is a robotic and acoustic spot, which lets online users anonymously track individuals in public places. It explores elements such as exposure, control and transparency of surveillance. *Flock* by KMA (2007) is a large scale outdoor multiple spotlight installation inspired by Tchaikovsky's *Swan Lake*. Pedestrians become performers, allocated their own spot where ghostly projections and stories are revealed.
24. Marc Pesce, "Introduction," in *The Playful World*, 2000, http://playfulworld.kungfudesign.com/index_exerpts.htm. (accessed October 1, 2009).
25. My material approach is concerned with the properties and affordances of materials – how objects and materials behave and how they are experienced and interacted with. Barbara Bolt describes this as a form of material intelligence within arts practice: *Material thinking offers us a way of considering the relations that take place within the very process or tissue of making. In this conception the materials are not just passive objects to be used instrumentally by the artist, but rather the materials and processes of production have their own intelligence that come into play in interaction with the artist's creative intelligence.* See Estelle Barrett and Barbara Bolt, *Practice As Research: Approaches To Creative Arts Enquiry* (New York:: I. B. Tauris & Co. Ltd., 2007), 29–30.
26. Richard Gold, "This Is Not a Pipe," in *Commun.,* ACM 36, no. 7 (1993): 1.
27. M. W. Krueger, *Artificial Reality II*, (Massachusetts: Addison-Wesly Publishing, 1991), xiii.
28. Beryl Graham, "A study of Audience Relationships with Interactive Computer-based Visual Artworks," in *Leonardo* 32, no. 4 (1999): 327.
29. Obervations of *Catch me Now* were carried out at Watermans *Unleashed Devices* 2010, at the Victoria and Albert Museum, Sackler Centre *Digital Design Week* 2010, during The Kinetica Art Fair 2011, at The Science Museum during *PLAYER* 2011 and at Illuminate Bath 2012. London, UK.
30. Mihaly Csikszentmihalyi and Stith Bennett, "An Exploratory Model of Play," in *American Anthropologist* 73, no. 1, (1971): 45.
31. Polaine, "Lowbrow High Art: Why Big Fine Art Doesn't understand interactivity," 2005.
32. M. W. Krueger, *Artificial Reality II*, 1991.
33. David Rokeby, "Transforming Mirrors: Subjectivity and Control in Interactive Media," in *Critical Issues in Electronic Media,* ed. Penny Simon, 147 (Albany: State University of New York Press, 1995).
34. Beryl Graham, "A Study of Audience Relationships with Interactive Computer-Based Visual Artworks," in *Gallery Settings through Observation Art Practice and Curation,* Ph.D., (The University of Sunderland, 1997), 171, http://stare.com/beryl/cv/sub/thesis.pdf (accessed March 9, 2010).
35. This is from Bateson's research into animal play in which he proposed the theory of the meta message – the meta message is the message about the messages. Simplified it tells us, for example when a dog bites the other dog it knows it is not a bite but play – "the playful nip denotes the bite, but does not denote that which would be denoted by the bite." Gregory Bateson, "A Theory of Play and Fantasy," in *Rules of Play Game Design Fundamentals,* eds. Salen and Zimmerman (Cambridge, MA: The MIT Press, 2006), 317. Richard Schechner later added that a bite is also *not* not a bite, from Stanislavski performance theory 'as if' that a performance can also be the "enactment of a double negative, the not ...not [sic.]." Richard Schechner, *Performance Studies, 2nd* edition, (New York: Routledge, 2006), 103.

WEBSITES

Act/React: *Interactive Installation Art*, Milwaukee Art Museum, 2008, http://mam.org/info/pressroom/2008/10/mam-presents-the-world-premiere-of-actreact-interactive-installation-art/ (accessed May 2, 2012).

Chi-TEK, MzTEK, 2011, http://www.mztek.org/programs/chi-tek/the-showcase (accessed May 2, 2012).

Serious Games, Laing Art Gallery and Barbican Art Gallery 1996, http://www.berylgraham.com/serious/ (accessed May 2, 2012).

The Art Formerly Known As New Media, Banff Centre, 2005, http://www.banffcentre.ca/wpg/exhibitions/2005/formerly (accessed May 2, 2012).

Decode, Victoria & Albert Museum, 2009, http://www.vam.ac.uk/microsites/decode/ (accessed May 2, 2012).

ISSN 1071-4391 ISBN 978-1-906897-18-5
ISSN 1071-4391 ISBN 978-1-906897-18-5