THE 3rd ISAT
Collision, Collaboration and the Future of Artsci

14 - 17 November 2016
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Preface

Professor Fong-Gong Wu
Dean, College of Planning and Design, National Cheng Kung University

The main objective of The 3rd ISAT: Collision, Collaboration and the Future of Artsci is to explore the possibility of collaboration between art and technology, both now and in the future. It also serves as an open platform for facilitating the international exchange of state-of-the-art knowledge in the field of art and technology.

From 14 November to 17 November 2016, the Techno Art Program of National Cheng Kung University is honored to collaborate with the Art & Technology Association Taiwan, in organizing The 3rd ISAT: Collision, Collaboration and the Future of Artsci which is the association’s annual conference for 2016. The conference committee received more than 70 submissions from 12 countries. Seven eminent international scholars have been invited to give keynote speeches, covering up-to-date thinking and development in the world of art and technology, through which they will share with us their ideas about the possibility of the future of Artsci.

I am grateful for the invaluable support I have received from the committee team, both from this college and from the Art & Technology Taiwan Association, and particularly for the support I have received from members of staff from the Techno Art Program, which serves as the conference host and organizer. My appreciation is also extended to our graduate students in the Techno Art Program for their dedicated assistance and contribution. Finally, I wish to thank all participants and sponsors for their support for the conference.
Art and science, commonly seen as two different parallel disciplines, are gradually merging into one world. In 1959, Snow described science and humanities as ‘The Two Cultures’, and this prompted many disputes and much debate about whether there is a significant gap between art and science. In 1987, theoretical physicist David Bohm also highlighted the importance of creativity and communication in science and humanities. In The Third Culture (1995), John Brockman proposed the concept of a mediating third culture in which scientists use literary language to convey their thoughts. In Art + Science Now (2013), Wilson collected and introduced a diverse range of work and projects in which there is an intersection between art and science, ranging from digital media to life sciences. Furthermore, in Colliding Worlds (2014) Miller also suggested that an exciting new art movement had recently emerged in which artists utilize and highlight the latest advances in science.

In recent years, many galleries, festivals, university programs, publications, websites and funding schemes have emerged to support the intersection and interaction of art and science. This new form of art practice is challenging the traditional methods of viewing art. The term for this new form of art is now understood as ‘Artsci’, a hybridization of art and science. Artsci enriches the public image of science and serves as a new communication tool with which to engage the general public and help them to understand and question scientific research and contemporary art practice. The 3rd ISAT: Collision, Collaboration and the Future of Artsci aims to articulate a vision for creativity and science, and what we would envision for the future of Artsci. Undoubtedly, the division between art and science has collapsed and the two have collided, such that they are actually now merging and collaborating.

The 3rd ISAT: Collision, Collaboration and the Future of Artsci has been organized by the Techno Art Program at National Cheng Kung University in Taiwan, in partnership with the Art & Technology Association Taiwan. The 3rd ISAT focuses on the interchange of creativity and innovation with the aims of exploring what is new, sharing ideas, shaping future collaboration, and promoting excellence in outstanding research and practice. It is the first international conference on this subject in Taiwan, and we hope that it serves as a spark to ignite dialogue and collaboration with our prestigious international guests, including artists, makers, scholars, theorists, and curators in the field of art and technology.
PROGRAM
The 3rd ISAT: Collision, Collaboration and the Future of Artsci  
台灣科技藝術學會第三屆國際學術研討會「衝突與合作 - 科技藝術的未來」

http://technoart2016.web2.ncku.edu.tw

Main Venue: National Cheng Kung University, Kuang-Fu Campus. International Conference Hall, Lecture Room III

14 November 2016, Monday

8.45am – 9.15am  Registration

9.15am – 9.30am  Welcome & Opening Remarks
Dean | Professor Fong-Gong Wu, College of Planning and Design, National Cheng Kung University
Jens Rösler, Director of Goethe Institut, Taipei
Professor Chih-Yung Chiu, Director-General, Taiwan Art & Technology Association
Professor Ming Turner, Conference Chair, National Cheng Kung University

9.30am – 10.30am  [keynote Speech 1] Professor Mike Stubbs, FACT, UK.
No Such Thing as Gravity
Moderator: Professor Ming Turner, National Cheng Kung University

10.30am – 11am  Coffee/tea Break

11am – 12pm  [keynote Speech 2] Professor Tomimatsu Kiyoshi, Kyushu University, Japan. Design CoCreation
Moderator: Professor Pey-Chwen Lin, National Taiwan University of Arts

12pm – 1.30pm  Lunch Break

1.30pm – 3pm  [Session 1] Chair: Professor Yen-Ting Cho, National Cheng Kung University
• Professor Tobias Klein, City University of Hong Kong.
  MASK_augmented 3D printed material in Art and Design
[Skype presentation]

- Professor Paul Thomas, University of New South Wales Art and Design. Quantum Consciousness: and quantum Uncertainty
- Olaf Hochherz, City University of Hong Kong. Experimentation in Art and Science

[Chinese Session 1] NCKU International Conference Room
Chair: Professor Chih-Yung Chiu, BNU-HKBU United International College; Discussant: Professor Hao-Chiang Koong Lin, The National University of Tainan

- 李婉貞、梁容輝教授 / 國立台灣科技大學工商業設計系；〈「人的想望」或「物的魔幻」？——從大衛・羅斯的魔法物件反思物聯網設計〉
“Human Wonder” or “Object Magic”? - Rethinking the IOT Design from David Rose’s Enchanted Objects
Lee Wan-Chen, Professor Liang Rung-Huei/ National Taiwan University of Science and Technology

- 陳令佳、梁容輝教授 / 國立台灣科技大學工商業設計系；〈陰翳的互動：物性別之初探〉
The hidden perception in interaction design: A preliminary study on gender of objects
Jar Chen, Professor Liang Rung-Huei/ National Taiwan University of Science and Technology

- 程元 / 國立台灣藝術大學；〈博物館行動導覽應用之評比初探〉
A Comparative Study on Mobile Application for Museum Guidance Systems
Yuan Cheng/ National Taiwan University of Arts

3pm – 3.30pm  Coffee/tea Break
3.30pm – 5pm  [Session 2] Chair: Professor Wei Hsiu Tung, National University of Tainan

- Sal Anderson, University of the Arts London. Psychiatry and the Subjective: Art’s Role in Challenging Current Clinical Practice
- Professor Ming Turner, National Cheng Kung University.
Patricia Piccinini: Imaginative Creatures and the Hybridised Body

- **Professor Noyan Dinçkal**, University of Siegen, Germany, **Professor Susanne König**, University of Leipzig, Germany. The Artist as Alchemist: How shit turns to gold. A technical-historical and art-historical comparison of ecological biofuel plants

[Chinese Session 2] NCKU International Conference Room
Chair: Professor Chenwei Chiang, National Taipei University of Business;
Discussant: Professor Liang Rung-Huei, National Taiwan University of Science and Technology

- **邱誌勇教授**/北京師範大學—香港浸會大學 聯合國際學院；〈數位藝術表演中的身體考掘〉
The Body in Digital Performance Arts
Professor Chih-Yung CHIU/ BNU-HKBU United International College

- **潘正育教授**/國立台南藝術大學；〈連線數位新美學？ 試探 VOCALOID 現象的文化效應及其對現行創作模式挑戰〉
Emergence Of a new aesthetic in the digitally connected era? a tentative study on the cultural effects of the vocaloid phenomenon and its challenge to current modes of creation
Professor Cheng-Yu PAN/ Tainan National University of the Arts

- **藍敏菁**/國立台灣藝術大學；〈藝術的「轉向」— 以林珮淳新媒體藝術《夏娃克隆》系列為例〉
Min-Ching Lan/ National Taiwan University of Arts

15 November 2016, Tuesday

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**Program**

6.30pm – 8pm Welcome Dinner at Ami Restaurant (No. 138, Section 2, Minquan Rd, West Central District, Tainan City); 阿美餐廳 (台南市中西區民權路二段 138 號)

15 November 2016, Tuesday
9am – 9.30am Registration
9.30am – 11am [Session 3] Chair: Dr. Ottavia Huang, Postdoctoral Researcher,
National Cheng Kung University

- **Professor Eleanor Gates-Stuart**, National Cheng Kung University. *Under the Surface*
- **Anastasia Tyurina**, Griffith University, Brisbane, Australia. *The Unseen Water*
- **Gyungjin Shin**, City University of Hong Kong. *The White, Black, and Grey Cubes: a Trajectory of Display Technologies in Contemporary Art*

11am – 11.30pm  Coffee/tea Break

11.30pm – 12.30pm  **[keynote Speech 3]**  **Professor Arthur Miller**, University College London. *The Fusion of Art, Science and Technology in the 21st Century: The New Avant-Garde*

Moderator: **Professor Ming Turner**, National Cheng Kung University

12.30pm – 2pm  Lunch Break

2pm – 3pm  **[keynote Speech 4]**  **Professor Ursula Damm**, Bauhaus University in Weimar, Germany. *Public Spheres and Shared Habitats: Interfaces for Humans and Animals*

Moderator: **Jens Rösler**, Director of Goethe Institut, Taipei

3pm – 3.30pm  Coffee/tea Break

3.30pm – 5pm  **[Session 4]**  Chair: **Professor Chun-Heng Ho**, National Cheng Kung University

- **Yu-Chen Chen, Professor Chao-Ming Wang**, National Yunlin University of Science & Technology. *The Research of Interactive Installation Design by Combining Affective Computing Technology into Chinese Calligraphy Art*
- **Josef Bares**, City University of Hong Kong. *Consumption, Hong Kong, Volume 1*
- **Felix Clausberg**, Universität Tübingen, Germany. *Visual Ontologies in Traditional Eastern and Western Art*

5pm – 6.30pm  **Artists’ Session at NCKU Art Gallery**

Moderator: **Dr. Ottavia Huang**, Postdoctoral Researcher, National Cheng Kung University

**Josef Bares**/ City University of Hong Kong. *Consumption, Hong Kong, Volume 1*
Jia-Ying Chou, Sheng-Chieh Wang, Johnson Liew, Jie-Jun Zhu/ National Taiwan University of Arts. "Notations" the creation of an interactive sound installation

Professor Eleanor Gates-Stuart/ National Cheng Kung University. Unravelling the Sequence

Professor Samantha Krukowski/ University of Cincinnati, USA. Histograms

Wei-Peng Kuo/ National Taiwan University of Arts. ‘Rove’ The Creation of Brainwave Interactive Installation

Fengqi Li, Professor Amber Bartosh/Syracuse University, USA. Wall Parley

Professor Pey-Chwen Lin, Pey-Chwen Lin Digital Art Lab/ National Taiwan University of Arts. Happening Rehearsal

Yi-Ning Lo/ National Cheng Kung University. Analog Stories

Xiaotian Sun/ Kyushu University, China, Professor

Professor Paul Thomas/ The University of New South Wales, Australia. Quantum Consciousness: A visual/sonic installation that immerses the viewer in quantum phenomenon

Kiyoshi Tomimatsu/ Kyushu University, Japan. Breathing City Shelter

Pei-Yi Tsai/ National Taiwan University of Arts. “Rethink” The Creation of Video Jockey with Interactive Performing Art

Anastasia Tyurina/ Griffith University, Australia. Watermarks

Tai-You Ye/ National Cheng Kung University, Ashok Mistry/ Artist. For the Dancers

Ting-Yi Yu, Pei-Shan Huang/ National Cheng Kung University. Digital Image Arts: Conversion of Landscape

7pm –8.30pm VIP Party

16 November 2016, Wednesday

8.45am – 9am Registration

9am – 10.30am [Session 5] Chair: Professor Ming Turner, National Cheng Kung University
• **Professor Louis Lo**, National Taipei University of Technology. Contemporaneity in Tsai Ming-liang’s Cinema as Video Installation

• **Chieh-Ju Huang, Guan-Lin Liu, Geng-Hao Hsu, Professor Sheng-Ming Wang**, National Taipei University of Technology. Hands on, Face off: Chinese Cultural Performance Experience with Interaction Technology

• **Dr. Reto Schoelly**, The University of Freiburg, Germany. Artifying Mathematical Terms

10.30am – 11am Coffee/tea Break

11am – 12pm [keynote Speech 5] Professor Tomasz Bednarz, CSIRO and Queensland University of Technology, Australia. Ninja Hack Art + Science, and Visualisation Future

Moderator: Professor Eleanor Gates-Stuart, National Cheng Kung University

12pm – 1.30pm Lunch Break

1.30pm – 2.30pm [keynote Speech 6] Professor Jutta Weber, The University of Paderborn, Germany. Tinkering With the Unpredictable. A Brief History of Technoscience Culture

Moderator: Professor Hsi-Jen Chen, National Cheng Kung University

2.30pm – 3.30pm [keynote Speech 7] Professor Sheng-Fen Chien, National Cheng Kung University. In the Making

Moderator: Professor Chia-Han Yang, National Cheng Kung University

3.30pm – 4pm Coffee/tea Break

4pm – 5.30pm [Session 6] Chair: Professor Hui-Wen Lin, National Cheng Kung University

• Dr Hugh Davies, La Trobe University, Australia. Australia’s Networks of Art and Science

• Ting-Yi Yu, Pei-Shan Huang, Professor Ming Turner, National Cheng Kung University. Digital Image Arts: Conversion of Landscape

• Meng-Chin Huang, National Taiwan Normal University. Knitting a Paratextual Body: Video Installation as Abodily Identity Context
• Hyunkyoung Cho, Design Institute at Inje University, Korea. Well-Being In between art, technology and humanity in multi-cultural life: A decolonized approach to new collaborations of politics and the aesthetic of “We” human-and-technology in knowledge engineering art

5.30pm –6pm Overall Discussion & Summary
Chair: Professor Ming Turner, National Cheng Kung University

17 November 2016, Thursday

Cultural Tour in Tainan

9.15am Meet In front of Zenda Suites

10.00am Taiwan Metal Creation Museum 志鋼觀光工廠

11.45am Tainan Confucius Temple 孔廟

12.40pm Lunch Break Slack Season Tainan Main Store (Tu Hsiao Yueh) 度小月

2.00pm Anping Tree House, Old Tait & Co. Merchant House, Jiu-Yun Zhu Former Residence 安平樹屋、德記洋行、朱玖雲故居

3.50pm Blueprint Cultural & Creative Park 藍曬圖文創園區

5.30pm Back at Zenda Suites
KEYNOTE SPEAKERS
No such thing as gravity – feeling curious?

The provocation "No such thing as gravity" is the title of this exploration of creative practice which places disruption and experiment at its heart. Practices cited range from those inspired by Dadaism to DIY bio hacking who adopt an ‘experiment positive’ approach.

It is in the suspension of disbelief that many assumptions continue enabling a status quo, however curious people, look between the cracks, observe alchemy, create different states for us to inhabit, to defy existing fact and belief.

These curious people find refuge in making art and sometimes science, and increasingly we observe individuals working between disciplines, confused between traditional definitions of materials, methods and forms. Collaborations between curious scientists and artists have proliferated leading to results, more than the sum of individuals’ research. Aiding our case to challenge the utilisation of technology based on modernist principles of ‘progress’, being exploited for the objectives of economic development.

This tension between utility and poetics drives my interest, which spans a social dysfunction of ‘techno-fetishism’.

Preferring the term STEAM, Science, Technology, Engineering, Art & Maths to challenge the mass adoption of STEM championing, I wish to emphasise the significance of artists in any formula for innovation and imagination.

Situations where these collaborations and experiments flourish will include the FACT Collide@CERN project and No such thing as gravity, also title of the FACT exhibition co-produced with NTMoFA, opening in Liverpool November, 2016 and in Taichung March 2017.
The way of thinking about the human centered design is still important and effective as a base layer. I will introduce a new perspective how we design CoCreation.

There are two sides in the design process, the one is the side of analysis to be evaluated by a user testing, the other side is the ideation to produce ideas for a design.

I have emphasized to push on the side of ideation to navigate ideas of the Interaction Design from the year around 2000 has begun. It is a field of the Media Art to express diverse ideas by using advanced technology without limitation. I would like to show some works of my lab' related with a game design and interactive system design, around that period.

Meanwhile there is an upcoming design trend to pay attention, that is the open design by non designer community like FabLab. The way of thinking of the intellectual property has been changed completely upside down in this community. The idea has changed from an exclusive method to an open method to be shared in the community, and also it is shareable, re-useable and developable by the community much more and more. This is called CoCreation.
The Fusion of Art, Science and Technology in the 21st Century

The New Avant-Garde

There is a revolution going on in the world of art, a new avant garde pushing the boundaries farther than ever before. Art, science and technology are merging to form a Third Culture. I call this exciting new art movement ‘artsci’. Its denizens are artist, scientist and technologist rolled into one. But today this goes dramatically further because computers are playing an increasingly important role in producing art and music. The question naturally arises: Can Computers Be Creative?

In my talk I will explore this brave new world. What are some of the many sorts of art that spring from the interplay between art and science? How did this interaction begin and where is it going in the 21st century? How are concepts such as art and aesthetics being redefined? Are there similarities between the creative processes of artists and scientists and if so, what? I will discuss these questions and more.
Public spheres and Shared Habitats: Interfaces for Humans and Animals

Contemporary art sees the artist and the audience as constitutional parts of a creative act. Artworks are no longer mere objects, but rather processes, driven by the agency of things, humans and other creatures. Interactivity and mutual interplay have become a pivotal element of current artistic practices.

The planning of interactive settings and interfaces in art – other than in science projects or in interface design – does not follow a predefined aim or target. Art requires open-minded experiments seeking for novel and authentic experiences – for both: the artist and the audience.

Andrew Pickering names this ‘performative, productive and transformative dances of agency […], an open-ended spiral with no fixed future destination’. ¹

With my artworks I follow such a systemic approach, using biosemiotic feedback circles and cybernetic models.

Biosemiotics and cybernetic frameworks allow the layout of spheres and habitats for humans and other species out of their own realms of experience, a ‘consensual domain’², as Humberto Maturana would say.

My video tracking based installations allow a machines perspective on collective human behaviour in urban spaces. With my artworks I offer an experience to correlate the actions of passengers to a bigger picture of the site.

¹ Andrew Pickering: Varieties of Cybernetics, Ontology, Critique, Politics
Recent bioartistic artworks and experiments seek to explore the conditions of the cohabitation of animals, plants, and humans in a common environment.
Ninja Hack Art + Science, and Visualisation Future

Everything starts with a pixel. Once you know how to display a dot, you can draw almost everything without any limitations. Things became simpler - you don't need to know operation on bits to draw a ghost or a flower, or remember hexadecimal numbers to animate shapes. However, you still need to know a bit about hardware, its limitations to produce efficient code and creative real-time visuals. Ninjas can achieve almost impossible, even control Big Data of 64kb. Ninja Hack Art is alive in connecting dots of art and science, making new engineering designs. This talk will show off how the combined effort of programming, graphical, technical and design skills shapes our visual future. Examples will include live-drawing with code, use of electronic devices (such as Arduino) for creating modern art or science installations detecting breath, motion or monitoring surrounding environment. Also, demonstrations how hacking drives development of modern visualisation facilities, from small to large scale including Virtual Reality and massive visualisation walls consisting of more than 40 multi-touch screens, and millions of pixels.

Prof. Tomasz Bednarz
CSIRO and Queensland University of Technology, Australia
Tinkering With the Unpredictable.
A Brief History of Technoscience Culture.

Our technoscience culture interprets and models the world as emerging, flexible and open-ended. Accordingly, it builds on a Post-Newtonian rationality using strategies of recombination, re-design, as well as automatized and systematized tinkering.

Computer science, Artificial Intelligence, genetics and other technosciences aim at resourcing the unpredictable by exploiting random processes, probing possibilities and constructing multiple correlations. Imitation as well as imagination – traditionally situated in the realm of the arts – play a core role in the technosciences to develop complex, dynamic and ‘self-learning’ systems.

In my presentation I will analyse the epistemological and ontological underpinnings of our technoscience culture with a focus on recent trends in robotics and data mining. Thereby I will discuss how and why art and technosciencces turn increasingly into ‘allies’.
In the Making

Can we provide a sound techno art education and foster serious contemporary artists in a design school? The design school, College of Planning and Design, is very young, established only in 2003. And it is within a University that began as an Engineering College. One may be skeptical yet should be critical of designers and technology specialists claiming to be artists themselves or to be educators of artists.

The keynote reviews the supporting environments for a new Techno Art (M.A.) program in NCKU. While there are significant differences in fostering artists and training designers, the culture of making, crafting and prototyping in the design school, as well as the engineering school, provides a fertile learning milieu with fellow students of design. Furthermore, members of our design faculty, with their dedications to perfection through making, are excellent mentors to students. However, to cultivate the mind of an artist, the Techno Art program needs guest supports from established artists, thinkers, and philosophers.

Prof. Sheng-Fen Chien
Associate Professor of Architecture & Creative Industries Design
National Cheng Kung University
SESSION 1

14 NOVEMBER 2016, Monday

1.30pm - 3pm
MASK_AUGMENTED 3D PRINTED MATERIAL IN ART AND DESIGN

Tobias Klein

ABSTRACT

Additive Manufacturing, commonly referred to as 3D printing, has become a new standard in all design, medical, engineering and creative industries. Yet, research in this field is largely conducted in optimization strategies of print quality, resolution and time efficiency. The potential to create new material combinations, using 3D printed objects and their associated precise constructed formal and surface properties, as substrates in chemical amalgamations and digital augmentations, is largely unexplored.

MASK explores the qualities of 3D printed materials to act as substrate for emerging amalgamations of environmental reactive agents and projection mappings. The project demonstrates chemical augmentation in the form of crystal condensations and polychromic pigments in the micro-porosity of selective laser sintered polymer and augmentations using geometrically complex video projection mapping in conjunction with above mentioned agents. Furthermore, we speculate upon the use of biological reagents in the form of bioluminescence from modified E.coli bacteria to articulate environmentally reactive illumination.

These emerging new reactive material properties have been showcased in the context of an exhibited artwork, MASK (https://vimeo.com/169978536), exploring the dynamic change of roles and moods of the performers and the colour coding of the characters of the Chinese Opera as a testing ground for these new material properties. The project has produced a set of wearable 3D printed highly reactive costume elements combining cultural heritage and new materiality and expanding a repertoire of material properties potentially leading to design and knowledge transfer opportunities in the mentioned industries.

Thus, the paper discusses the following key objectives of this project. Firstly, we demonstrate the development of a catalogue of material amalgamations using commercial available 3D substrates and polychromatic and crystalline reagents, exploring the reactivity and propagation of the agents in relation to form and porosity of resulting 3D print. Secondly we showcase the creation of 3D projection mapping workflows with 3D printed substrates and amalgamated new materials leading to the design of a full first set costume set first statically and then dynamically projected on.

1 Assistant Professor, City University of Hong Kong, School of Creative Media, Hong Kong. ktobias@cityu.edu.hk
Thirdly, the paper gives insight into the aesthetic affordances and dynamic resistance of the 3D amalgamated costume elements in the context of regionally-specific performance and protocols for projection mapped interaction between the various performers, taking account of choreographic elements such as feedback between performers and reactive costume elements.

Lastly, the work highlights an ongoing investigation into the potential of further application of amalgamated reactive materials to be used outside the performance-based context and to be transferred to other art and design related areas.

Keywords: 3D Print, 3D Projection Mapping, Cultural Heritage, Crystalisation, Chemical augmentation
QUANTUM CONSCIOUSNESS: AND QUANTUM UNCERTAINTY

Paul Thomas¹

ABSTRACT

This paper will explore the synchronicity happening between science and art in dealing with the development of new artistic languages on the speculative nature of the quantum universe. The research contextualizes conceptually quantum mechanics and whether the world comes into existence once we observe it. Uncertainty will be explored via, historical and contemporary synergies, between science and art, in particular the development of new abstract languages on the speculative front of quantum physics. This paper is an attempt to creatively conceptualize quantum mechanics and its premise that the world comes into existence only once we observe it. The recognition of the quantum phenomenon is not an isolated view but one that is linked to an art lineage and causal networks that situate how the contemporary world is being experienced. It explores how the quantum computer works with uncertainty and will create a rupture in the way humans understand where consciousness exists.

The materiality at the core of new quantum computer is analogous to human consciousness and derives its power from the atoms, speed, superposition and unpredictable swerve. The quantum computers atomic speed can be seen as being relative to the speed of thought in humans. The human bodies materiality at an atomic level is questioned when used to drive the processing in the quantum computer. We understand that thinking and thoughts are atomic and stem from a historical intuitive understanding of rationalising nothing. In other words if nothing cannot exist and everything is something and the smallest individual part is atomic and as thoughts are something they most also be atomic.

The paper will discuss the artwork Quantum Consciousness an audio-visualisation of atomic data which indexes the quantum "movement" of an electron. This project delivers an aesthetic and immersive experience that places the viewer inside the virtual superposition of a sub-atomic particle (i.e. its field of probability). This audiovisual experience establishes a metaphor and indexical map of human thought. The quantum spin of the electron here mapped is serving as the conduit for the form of the sensory stimuli of the work. The broader significance of Quantum Consciousness concerns the possibility of non-human, computational intelligence commingling with human consciousness. This link stems from the fact that the "material" of the electron and its quantum behaviour is the basis of the possibility of

¹ Associate Professor, University of New South Wales Art and Design, Australia. p.thomas@unsw.edu.au
quantum computation.

By posing questions on thinking and thoughts being atomic and stemming from an Epicurean understanding of rationalising nothing. I investigate the coming of a different understanding, which will change way artist contributed to new technological advances through nanotechnologies and quantum phenomenon.

Keywords: Quantum Art, Transdisciplinary, Uncertainty, Fine Art.
EXPERIMENTATION IN ART AND SCIENCE

Olaf Hochherz

ABSTRACT

Experimentation can be described as a point of proximity between art and science. In my talk shed light on this proximity by describing similarities and differences between experiments in art and science. Practitioners in art described their practice as driven by experimentation. Recent discussions in science and technology studies highlighted the importance of the practice of experimentation for the development of scientific. Conceptualizations of science, which recognize the fundamental role of scientific experimentation, have been discussed in the philosophy and history of science and science and technology studies.

The conception of scientific experimentation proposed by Hans Jörg Rheinberger describes how the practice of experimentation is productive in the development of science. Scientific experimentation can be described as a heterogeneous ensemble constituted in a network between spaces of representation, technical system, grapheme and epistemic thing, shaping by differential reproduction the development of science. Scientific experimentation is a constitutive part of science itself. Art is only in so far touched as experimentation is enacted within a work. By applying this conception of experimentation into the realm of art, conditions that are possible to be enacted in experimentation in art will be described. We can summarize three conditions: (1) Art must be thought to exist in a space of representation. (2) Technologies are used and techniques are enacted for their predictable patterns. (3) Traces created by the used technologies must be allowed to point at something not known. These conditions shape a conception of an art, which is thought to be driven by experimentation.

For practitioners of art these functions might be as well a basis of experimental practice in the production of art. In this case experimentation would only play a role in art production — its development of new tools for art, a testing of new ideas. Art is conceptualized as constituted in relation to an appreciating subject. While scientific experimentation, as described by Rheinberger, does not imply a particular relation to human subjects, the role of the appreciating subject in the constitution of an artwork transforms the conditions of experimentation in art. I will describe on the example of David Tudor's Rainforest IV, his experimental practice in the preparation of the work and how his performance creates a situation, in which the audience reenacts or reconstructs the process of experimentation. So that experimentation despite it was primarily govern the creation of the work is allowed to shape its

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appreciation as well.

Keywords: experimentation, sound art
CHINESE SESSION 1

14 NOVEMBER 2016, Monday

1.30pm - 3pm
“HUMAN WONDER” OR “OBJECT MAGIC”?
- RETHINKING THE IOT DESIGN FROM DAVID ROSE’S ENCHANTED OBJECTS

「人的想望」或「物的魔幻」?
– 從大衛・羅斯的魔法物件反思物聯網設計

李婉貞 ¹, 梁容輝 ²

摘要

物聯網時代，羅斯 (David Rose) 主張推展以人為本 (Human-centered Design) 的設計策略。他提出「魔法物件」 (Enchanted Objects) 來促進人與物之間的情感連結，滿足人對生活的各種想望，以開發更具魅力且討喜的設計。羅斯雖從施展魔法的概念，試圖消弭人對物的功能導向思維，卻未能真正還原物的本體價值。當我們置身於聯網之物的世界，不可忽視物本身所具有的實在與能動性。提倡「物導向本體論」 (Object-oriented Ontology) 的莫頓 (Timothy Morton) 即認為物的魔幻來自物本有的潛能以及隱藏在物表象下的特質。探討萬物之間相互的張力關係，正是物聯網引人入勝之處。本文將以數件羅斯提出的魔法物件設計為例進行論述：一、探討羅斯與莫頓對於「魔法」 (Magic) 之物觀點的差異，分析透過物導向的觀點，能激盪出哪些設計啟示？二、探討羅斯的設計在莫頓的物生態思維下是否能達成某些影響，反思物聯網設計應如何跳脫人類中心的視野侷限，以開展出更寬廣的設計面向。透過本文探討之魔法觀點，將有助於體察人應如何重新認識物件與其自身角色，藉由「與物共在」的後人類關懷，啟發設計師創造更合適的未來智慧生活，並激發與物之間更豐富的互動經驗。

關鍵詞：物聯網、魔法、物導向本體論、物生態、後人類

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THE HIDDEN PERCEPTION IN INTERACTION DESIGN: A PRELIMINARY STUDY ON GENDER OF OBJECTS

陰翳的互動：物性別之初探

陳令佳 1, 梁容輝 2

摘要

iPhone 是男的？Wii 是女的？

在法文或德文此類有語法陰陽性的語言中，對於物件的名詞描述有特定的性別之分，語意學的研究探討語法性別之於語言使用者，是否影響了人們的思維、甚至是設計師所體現於設計物上的外顯符碼。雖然我們無法探究語性的來源是否真正指涉了物件的性別存在，但人與物的互動經驗也許深受性別感知的影響。

我們與物的關係正如布希亞新物體擬人主義的象徵體系，人與物共同活在這個擬像的「超真實（hyper-real）」之中。從另一個角度來看，布希亞的象徵體系其實指向一個充滿意義與個體性的物世界。正因設計師對人機互動之間的想像與擬像形成了新世界，使我們滲入了這個隱匿日常生活背後、一個機器生命的意識幻象之中。物既是我們的意念投射，而我們也是物的反身。試問，我們創造物的同時，物的主體性是否於設計之中生成？在這個連智慧都能被「人工」的世代，機器是否也具有「人工性別」？

透過不同於傳統產品語意的視角來理解人與物件的新世界關係，本研究旨在以物件性別角度切入，並藉由現象學還原，探究互動設計物的「經驗品質」如何於人的意向性之中建構物件性別的意象。我們選定三個互動設計：成癮產品（Addicted products）、自拍植物（The selfie plant）和渴望的桌燈（The aspirational lamp），分別進行主觀和感知的性別量測，並分析與批判論述其各自的性別特質。

關鍵字：物件導向本體、性別、互動設計、感知、意向性

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A COMPARATIVE STUDY ON MOBILE APPLICATION FOR MUSEUM GUIDANCE SYSTEMS

博物館行動導覽應用之評比初探

程元

摘要

近年來，數位科技持續改變生活體驗與美感經驗，數位應用結合多元領域提供多樣化的服務，創新應用已成為眾多領域發展之目標。於此時空脈絡下，博物館亦採用許多創新技術提供觀眾不同的參觀經驗，藉由數位的特性以貼近觀眾，擴大服務對象進而達成資訊內容平等、開放共享的機會。博物館常見服務「導覽」於此數位化浪潮下，從原有的紙本、錄音機、語音導覽到目前以行動裝置為主的載具「行動導覽」為主，於無線網路 4G、行動裝置的快速發展下，加速博物館機構行動化 (Mobility) 建設，以行動裝置的可攜性、便利性、普及性，發展出相關的微型應用程式提供觀眾使用。然而多數博物館缺乏對行動導覽系統的技術知識，又因各家博物館、觀眾、系統三方需求的不同，導致開發應用時間較長，缺少一致行的理念，使得行動導覽資訊內容龐雜，使用成效不明顯。

本研究所目的為，彙整國內博物館、美術館各家發展出的行動導覽系統，以技術層面及人機介面設計的兩項觀點論述，檢視系統設計思維、資訊內容提供程度以及操作難易程度，並根據上述分析整理並提供相關建議，以減少未來設計開發時程，提供使用者更良好的輔助工具。

關鍵詞：博物館、行動導覽、情境感知、人機介面
SESSION 2

14 NOVEMBER 2016, Monday

3.30pm - 5pm
PSYCHIATRY AND THE SUBJECTIVE: ART’S ROLE IN CHALLENGING CURRENT CLINICAL PRACTICE

Sal Anderson

ABSTRACT

Science’s perceived alignment with objectivity has traditionally been posited in counterpoint to art’s potential to represent a subjective perspective. In this context psychiatric discourse can be seen as objectifying the patient in the classic doctor-patient relationship whereby a ‘case history’ is constructed within a set of predetermined categories of symptoms.

In conveying the subjective perception of an individual with lived experience of a neurological or mental health condition, the role of the artist in rendering the point of view of a patient is investigated. This role is explored in relation to the possible value of art in influencing a clinical interaction where an individual could feel ‘labelled’ or objectified.

Cinema has been described as the pre-eminent medium to convey the inner and subjective experience with its affinity to dream states, and in creating and evoking subconscious and transient mental states. With reference to aesthetic techniques of film language, in particular the medium’s use of the point of view shot, cinema is perceived as speaking directly to perceptions of subjective experience.

Examples are drawn from the author’s films that deal with the representation of neurological and psychiatric conditions. Cinematic inquiries into conditions explored include concepts of identity and the subjective experience of living with epilepsy, cinematic point of view representations of visual agnosia and psychiatric conditions.

A case is made for an interdisciplinary examination of the dual aspects of a doctor-patient relationship, whereby the medium of film can offer the possibility of safe territory for investigating the paradoxes and complexity of subjective experience in the problematic relationship between doctor and patient.

With the increasing emphasis in psychiatric research on quantitative techniques such as neuroimaging, there may be a further tendency towards objectification and a concomitant diminution of the subjective experience of the patient. It is suggested that the arts have a greater responsibility to question the ‘labelling’ and medicalizing of human emotions and experience and that film may be the ideal interdisciplinary

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tool for challenging the medical profession, in particular in the field of psychiatry.

Interactive social media platforms offer an extended dimension and diversity to the art-science, subjective-objective, debate and the potential to provoke more intuitive and compassionate approaches to scientific research.

Keywords: interdisciplinarity, film, psychiatry
PATRICIA PICCININI: IMAGINATIVE CREATURES AND THE HYBRIDISED BODY

Ming Turner¹

ABSTRACT

With passion and care, Patricia Piccinini has been creating her imaginary creatures, which seem to live alongside with us and have built emotional connections with us. This paper will explore the exhibition, Bodyscape: Patricia Piccinini, which was curated by Ming Turner, held at Yu-Hsiu Museum of Art in Taiwan in 2016. The exhibition deals both with issues surrounding bio-science, and intends to raise awareness for any creatures which are at risk of extinction. Piccinini’s work is full of mythical and magical properties. Through her art, she questions how our lives might be re-shaped via bio-science and how people’s greed could affect other creatures’ lives. Piccinini’s art is powerful and influential, and by utilising objects and settings with which we are familiar in our everyday lives, her work brings her imagined creatures to life. Her unusual, alternative world overlaps with the real world and what she creates isn’t simply something from her imagination but rather is something that has been integrated within us.

The show was displayed on the second and third floors of the museum, and featuring 35 pieces of work, including photography series, sculptures, a video and drawings. The project covers two main themes, i.e. the ‘Narratives of Bodyscape’ and the ‘Imaginative Body of Bodyscape’. A narrative is a story of real or imaginary events. This category covers three photography series, including The Fitzroy Series, Nature’s Little Helpers and the Science Story series. The body has long been an influential theme in contemporary art practice. In Bodyscape, nine pieces of sculptural work are displayed, featuring the hybridised forms of people and animals. Among them, seven pieces have been created with fiberglass, silicone and human hair, while the remaining two pieces are made from bronze and steel. In addition, Bodyscape also includes the video work, Tender (2014), which connects powerfully among several sculptural pieces in the exhibition.

Piccinini’s work deals with ethical issues related to the development of bio-technology. However, it doesn’t indicate directly whether the impact of bio-science on people’s lives is right or wrong, rather, with her qualities of tenderness and femininity, her work visualises the possible scenario in our life, as influenced by the development of bioscience in the future. It also suggests the kind of imaginary creatures which might be created in the future and how they might live with us.

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Examining Piccinini’s work from the past 15 years, it is clear that is always deals with issues related to the natural and the artificial, while critically challenging the themes of technology, ethics and life medicine. Nevertheless, her work does not aim to identify any answers to the questions she asks. Rather, her art creates an opportunity for viewers to think and re-consider the impact of bio-technology in our lives.

Keywords: Bioart, hybridity, biotechnology, body, ethics, contemporary art
THE ARTIST AS ALCHEMIST: HOW SHIT TURNS TO GOLD
A TECHNICAL-HISTORICAL AND ART-HISTORICAL
COMPARISON OF ECOLOGICAL BIOFUEL PLANTS

Noyan Dinçkal¹, Susanne König²

ABSTRACT

This research contract addresses the topic of the artist as a scientist, and respectively the circulation of knowledge between art and technology in works of art, wherein the new understanding of the role of the artist as well as new forms of artistic production will be examined. New players and productions in the art field, however, call for an equally new form of analysis, thus necessitating an interdisciplinary collaboration; therefore, artworks that grapple with socioecological technical processes should be researched.

This analysis centres around the project biogas plant in Tanzania, which the artist collective Superflex—founded in 1993 in Copenhagen by Rasmus Nielsen, Jakob Fenger und Bjørnstjerne Christiansen—has been pursuing since 1996. Together with engineer Jan Mallan, they developed a biogas plant independent of electricity that produces energy solely from excrement and solar heat. The system is thus applicable everywhere, particularly for single-family households in the rural areas in developing countries, and frees its user from international electricity suppliers. The project is one of many solutions to the problems facing the environment, whose common structural characteristics are sustainability and decentralisation.

Superflex integrate social ideas into their artistic work, examine ecological questions, and try to find economically feasible answers. They depart from the fictitious plane of art with their projects and instead deal with actually existing processes. They thus join the ranks of the arthistorical process of an extended concept of art, as Duchamp has already introduced with his Ready-made, and as was continued through the art of the 1960s by the use of new materials and techniques, the occupation of new locations not meant for art, and the transfer of the object itself into the action of art. The observer became the co-author, who used the provided tools and ultimately interpreted the object.

By Superflex leaving the fictitious plane of art behind to instead work with real and existing products, they do not only appropriate a variety of commercial and technical processes, but instead also act as product-developers, designers, managers, as

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well as scientists. Just like the actual process of economical product development, the artists cooperate with engineers, aid organisations, advisory offices for start-ups, and factory managers in order to make a product for a free market economy. In addition to the supervision of the entire product development, Superflex are primarily responsible for the design, forming the biogas plant to look like an everyday commodity.

In the analysis, Superflex’s biogas system is placed in a technical-historical context, whereby the historical developments as well as their conditions are based on interest, like the comparison to the real and existing system of private business. It is precisely this comparison between an artistic and a commercial object that provides insight into the technical mechanisms and the necessary forms of knowledge, such as application, appropriation, and reflection of the artefacts.

In terms of the art-historical analysis, the biogas plant follows in the footsteps of a variety of artistic traditions, which both combines and continues the previous work. As an example, references to two artworks shall be made: Piero Manzoni’s Artist’s Shit (1961), which sold the artist’s excrement for the then current price of gold, and Hans Haacke’s Rheinwasser Kläranlage (“Rhine-water treatment plant”), which confronted the observer with the then current problems of the water supply, as sewage from a municipal water treatment plant was flowing into the waters of the Rhine river.
CHINESE SESSION 2

14 NOVEMBER 2016, Monday

3.30pm - 5pm
當代數位藝術表演作為一種跨域的藝術形式，巧妙地結合起科技（尤指數位科技）與藝術之間的共存關係。而作為表演者的身體，時而扮演科技載體，賦影成形；時而與科技幻影互動，共譜樂章；身體成為融匯科技與藝術的體現主體，科鑿出一場場獨一無二的作品痕跡。更體現出「身體」作為一個重要議題在數位藝術表演中的流變。追溯台灣數位藝術表演的蓬勃發展約莫五年之間（2010年始），期間積累了無數成果，跨域之間的混雜表現也達至極致。聲音、影像、裝置、舞蹈、劇場、機械等各種元素開始以前所未有的開放姿態共構出一種專屬於數位藝術表演的沉浸美學。此種沈浸美學轉變，延伸了時間與空間的向度與感知，而表演者的身體，作為一種體現主體，無論在場或缺席，皆成為數位藝術表演中一種極其顯著且弔詭的存在。本文將依循此一論述脈絡，並以台灣當代數位藝術表演中重要且國際知名的作品（如：《死亡的過程》、《蕭賀文計畫》、《黃翊與庫卡》、《第二身體》與《城市微幅》等），探討身體作為一科技媒介在其中的流變與狀態。

關鍵字：數位表演藝術、身體、跨領域

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EMERGENCE OF A NEW AESTHETIC IN THE DIGITALLY CONNECTED ERA? A TENTATIVE STUDY ON THE CULTURAL EFFECTS OF THE VOCALOID PHENOMENON AND ITS CHALLENGE TO CURRENT MODES OF CREATION

連線數位新美學？試探 VOCALOID 現象的文化效應及其對現行創作模式的挑戰

潘正育

摘要

以初音未來為首的虛擬歌手 (Vocaloid) 所造成的影響顯然已經超越次文化和技術層面。本研究首先藉由釐清虛擬歌手與所謂替身 (avatar) 的差別，對虛擬歌手的出現與存在方式作基本介紹。接著，從初音未來的一場全像投影演唱會切入，以 Ronald T. Azuma 所提出的擴增現實 (augmented reality) 定義和 Paul Milgram (et al.) 的現實 - 虛擬連續境 (Reality-virtuality Continuum) 為基礎，試以技術、社會和本體論三個面向廣義延伸的「進階擴增現實」概念來分析虛擬個體對當今社會的入侵。最後，我們以 Vocaloid 創作現象對比 Douglas Davis 的網路接龍和 Jean-Pierre Balpe 的自動文學生成器等參與式作品，可發現該現象對於「作者 - 作品 - 觀眾」的傳統作者 / 受眾關係，甚至對於現代藝術的「觀眾參與」，乃至當代藝術「後設作者」概念，皆造成根本性的顛覆。新的作者 / 受眾關係，即「(真正的) 後設作者 - 主動作品 - 主動觀作者 (meta-author – work-author –spect-act-author)」儼然正在形成，其中，作者退至台下，幾近隱身；作品開始具有主動性甚或似是而非的主體性，而觀眾則正式晉升為創作者。按此類數位連線文化尚在初期階段，若是聽其發展，將是藝術家定位和創作形式的嚴峻挑戰，抑或是一種新美學的開展？本研究暫止於開放性提問，尚待後續觀察與思索。

Keywords: Augmented reality, avatar, internet, meta-author, net art, virtuality, vocaloid

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藝術的「轉向」—
以林珮淳新媒體藝術《夏娃克隆》系列為例

藍敏菁

ABSTRACT

新科技改變人類接觸資訊的方式、學習模式，影響到人類思維。藝術家運用新科技創造新藝術，作為一種新的藝術形式，新媒體藝術不僅為社會注入一種新的視覺與媒體文化，同時也將重塑人類的美學觀。從十九世紀到二十世紀，哲學家不約而同的用「藝術已死」（黑格爾）、「藝術的終結」（亞瑟·丹托）、「藝術的死亡」（瓦蒂莫）等警語提醒我們，21 世紀的藝術將會有根本上的改變。當藝術「新結構」的樣貌還是模糊不清與正在形塑中，我們可以開始思考：新媒體藝術為藝術擴張那些疆域？新媒體藝術具備藝術哪些本質？新媒體藝術將會對我們感知藝術帶來怎麼樣的衝擊？本文想要透過林珮淳「夏娃克隆」系列嘗試思考：（1）展覽空間從「白盒子」到「黑盒子」的侷限性與可能性；（2）哲學家的理論又為新媒體藝術帶來怎麼樣的新思維與新思考；（3）新媒體藝術為觀眾帶來怎麼樣的新體驗。

關鍵字：新媒體藝術、展覽空間、美學、藝術體驗、夏娃克隆

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SESSION 3

15 NOVEMBER 2016, Tuesday

9.30am - 11am
UNDER THE SURFACE

Eleanor Gates-Stuart

ABSTRACT

‘Under the Surface’ focuses on mining and minerals, the innovation and technology involved in looking under the earth’s surface, working with research scientists at the Commonwealth Scientific and Industrial Research Organization (CSIRO) Western Australia (WA) and the Kalgoorlie Consolidated Gold Mines. Visualizing innovation is a crucial part of this research and with it, the context of scientific brilliance as it places Australia at the cutting edge of global science. ‘Under the Surface’ is commissioned by the Scitech Discovery Centre (WA) and as the artist in residence, Eleanor Gates-Stuart explores ways in which art can help communicate science to non-scientists and scientists alike, particularly in this instance of the science museum.

Intrigued with the scientific problem of geological uncertainty (Uncover 2012), ‘Under the Surface’ explores complexity of technology in scientific and industrial innovation, repositories of information (both physical collection and electronic) through visual communication and interpretation through artworks. Influenced by scientific innovation and with reference to historical artefacts. The installation is aimed at playful engagement allowing the audience to interact with the artwork by using their body gesture (hand movement) to control and explore the layers of context. ‘Under the Surface’ is a collaboration of knowledge and information sharing, in bringing this artwork to completion, with the results of this science and art collaboration discussed in the context of working with scientists and organizations, in creating art for communication science.

Keywords: Artscience, Interdisciplinary, Collaboration, Science Communication

Reference:

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Artworks:


THE UNSEEN WATER

Anastasia Tyurina¹

ABSTRACT

My visual art project is concentrated in the specific area of scientific photography made by the Scanning Electron Microscope (SEM), which has expanded the boundaries of observation and representation of the micro world since it was introduced to scientific research in the mid-1960s. In particular, I investigate how to interpret scientific images captured by the SEM of micro-scale drops of water from different aquatic systems after evaporation in an attempt to discover morphological features of the patterns related to water contamination and thus to turn scientific photography into a creative art form. Although scientific photography can be considered non-aesthetic since its main purpose is to convey accurate information rather than beauty, its ability to record material in addition to that which is merely informative allows it to also serve expressive, subjective and aesthetic purposes. Microphotography in particular has the potential to communicate to a general public from both a scientific and a cultural perspective. Certain images obtained through experimenting with the SEM can have aesthetic value apart from that of scientific documentation, while my artistic practice can be seen as experimentation in scientific representation that encourages the unexpected over the predictable.

Keywords: Interdisciplinarity, Photomicrography, Scanning Electron Microscope, Art, Water

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Brisbane River, 2015, Anastasia Tyurina, photomicrograph. © Anastasia Tyurina photomicrograph.
South Bank Pond, 2015, Anastasia Tyurina, photomicrograph. © Anastasia Tyurina

Mount Gravatt Pond, 2015, Anastasia Tyurina, photomicrograph. © Anastasia Tyurina

Garden Pond, 2015, Anastasia Tyurina, photomicrograph. © Anastasia Tyurina

Rainwater, 2015, Anastasia Tyurina, photomicrograph. © Anastasia Tyurina

Cleveland Point, 2015, Anastasia Tyurina, photomicrograph. © Anastasia Tyurina
THE WHITE, BLACK, AND GREY CUBES: A TRAJECTORY OF DISPLAY TECHNOLOGIES IN CONTEMPORARY ART

Gyung-Jin Shin ¹

ABSTRACT

Since the late 1960s, when the first generation of video artists began to use TV sets, display technologies have been regarded as the “canvas” of video artists. Since then, a new concept, “Black Cube,” has emerged to refer to a type of art space that is designed for the special needs of video art and digital art works, as opposed to the traditional style of presenting art with four white walls and by appropriating lighting: the “White Cube.” In addition, another newly-coined word, “Grey Cube,” has emerged to identify the fusion of the aesthetics of the “White Cube” and “Black Cube.” These neologisms reflect how display technologies have had a huge impact on the ways not only of presenting artworks, but also of producing, appreciating, marketing, collecting, and preserving them.

Even though the selection of screening equipment by artists or curators is one of the key factors both in determining the modes of art exhibitions and understanding works of art, display technology itself has not attracted the considerable attention it deserves in the history of art. As state-of-the-art screening technologies have emerged and affected artistic creation, however, it has become necessary to reconsider display technologies in the context of contemporary art. My paper will examine the trajectory of display technologies in 20th- and 21st-century art with special attention to the development and adoption of key display artifacts: the television receiver, LCD monitor, and video projector.

I regard the phenomenological approach as a useful framework for analyzing artistic activities utilizing digital technologies in particular, since artwork mediated by digital technologies provides audiences with more complicated, multi-dimensional, and diversified sensory experiences than traditional forms of art, such as painting and sculpture. By referring to Marc de Vries’ taxonomy of function and Don Ihde’s classification of human-technology relations, which are mainly concerned with the systematic reflection of the structures of experience and consciousness, I will analyze how certain types of display technologies have critical impacts both on artistic language and the experience of audiences through examples of the works of Nam June Paik, Bill Viola, Tony Oursler, etc.

I argue that the advent of new display technological artifacts has played a key role in innovative moments of art history. By shedding new light on the correlation between

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display technologies and art forms, I argue that phenomenological analysis focusing on the relation between the human body, consciousness, and technical apparatus is becoming indispensable in criticizing artworks. Neither an analysis of a single technological artifact nor a critique of artwork, this study seeks to trace shifting points of contemporary and media art history, in which modern display technologies and human creativity are deeply intertwined and have coevolved.

Keywords: Display technology, Contemporary art, New media art, Phenomenology, Marc de Vries, Don Ihde, White cube, Black cube, Grey cube
SESSION 4

15 NOVEMBER 2016, Tuesday

3.30pm - 5pm
ABSTRACT

Chinese calligraphy is one of the most important cultures in the Chinese world. It has not only significant representation in the literature field, but also plentiful forms in the art world such as its movements of writing, structures and styles. However, Chinese Calligraphy is not only to present its writing, it is also training for stable mood, therefore Calligraphers’ handwriting is closely bounded to their emotions. For past years, many researchers used physiological sensors to monitor calligraphers during writing and the results proved that writing Chinese Calligraphy truly related to people’s emotion. But it was hard for general people to realize the emotion from Calligraphy’s strokes. With the advent of digital generation, Chinese Calligraphy was not just a writing tool, it promoted to art appreciation. At the same time, traditional Chinese Calligraphy also encountered the situation of transition, and modern art changed the performance from single to multi-way. Creator can use variety of technology for creations or rebuild artworks; and people can have physical interactions with artworks not just for watching. Interaction makes users immerse in artworks more and provide enjoyable experience. Hence, in this study, Chinese Calligraphy art is the aspiration and using affective computing to make an interactive installation. Expecting users would know more about the connection between Chinese Calligraphy and human’s affection, and also having rich interactive experience.

The research method used literature reviews of Chinese Calligraphy art, interactive art and affective computing, and proposed design principle, and through expert interviews to correct design principle. And then prototyped an interactive Chinese calligraphy art installation “Mind Calligraphy”. After that, analyzing and modify prototypes by observation, questionnaires and users interviews to evaluate the systems during two exhibitions. The research results show as below:

1. Users showed high interests and acceptance of brainwave interaction.
2. Users felt pleasant and interesting while interacting with “Mind Calligraphy”, hence motivating users’ to realize Chinese Calligraphy.
3. Enhancing the sensitivity of touch screen for writing.

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(4) Transferring physical data into animation and audio can make users understand the connection of Chinese Calligraphy and personal emotion more.
(5) The immediate feedback and display of “Mind Calligraphy” increased the communication of Chinese Calligraphy between users.
(6) “Mind Calligraphy” proposed a new interactive way, and its user experience was different from traditional Chinese Calligraphy.

Keywords: Chinese Calligraphy Art, Interactive Art, Affective Computing, Interactive Installations.
CONSUMPTION, HONG KONG, VOLUME 1

Josef Bares¹

ABSTRACT

In the age of computational, networked services, where self-reflection has been outsourced to the recommendation algorithms of Google and Amazon, how can we maintain our integrity as human beings and not just as machine parts within a system beyond our control?

This is a research-based project based on my own consumer decisions: Tracing relationships between private sphere of individual decision making and the public sphere of aggregated socioeconomic effects (as reported in news media) in the specific circumstances of Hong Kong. The work consists of an artist book and a multiple-channel video data visualization.

The project re-appropriates personal consumer decision data, which would otherwise be silently forgotten by the consumer while actively data mined by the merchant. I propose a method based on consumer spending that is a part of our practice of everyday life (de Certeau).

The consumer decision data is re-used as a compass to navigate 12 months’ worth of news items and press releases, resulting in a vast, yet consistent data sculpture, reflexive of the conditions of its own creation. The pleasurable activity (shopping, consuming) thus becomes a starting point of a long circuit (Stiegler) of knowledge creation. The creative process functions as a sense-making mechanism (Snowden) resulting in a new distribution of sensibilities (Rancière).

Economy, consumption, data visualization, sense-making, art practice-based research

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Consumption, Hong Kong, Volume 1, screenshot (top-down view)

Consumption, Hong Kong, Volume 1, installation view
VISUAL ONTOLOGIES
IN TRADITIONAL EASTERN AND WESTERN ART

Felix Clausberg

ABSTRACT

In our daily experience we rely on a deep-routed notion that images are mere representations of “real things”. In terms of our perceptual routines we seem to be spontaneous metaphysicists – taking the split between being and phenomena for granted. We spontaneously ask ourselves whether the pictures we gaze at hide and conceal something we cannot immediately touch. This, of course, results in a peculiar venture into the pictorial beyond where easy access is most likely denied. Instead, it might be more worthwhile to pose the question what constitutes picturality itself.

The Japanese philosopher and art historian Ken’ichi Iwaki refers to the Heideggerian notion of being-in-the-world in his essay The Metaphysics of Image – A Proposal for Contemporary Aesthetics beyond traditional Metaphysics. He points out that our day to day dealings with images are proof of a fundamental oblivion of image, i.e., we fail to appreciate the facticity of our being-in-images altogether. Interestingly enough, this trope is not as novel as one might think – at least not in the context of Post-Han-Dynasty reflections on landscape painting in China. As irreducible to one another as those discourses might be, there is considerable and growing evidence for the assumption that both Buddhist and phenomenological frameworks share a common epistemological basis. This has already been pointed out elsewhere, for example by Dan Lusthaus in his work Buddhist Phenomenology, but nevertheless needs further investigation.

Early medieval Chinese thought insistently dealt with the problem of superimposing representational structures of meaning onto the viewer’s gaze, differentiating between various degrees of aptitude to grasp what might be ‘quintessential’ in a brush-stroke, a painting or a landscape. Its ultimate aim was the realization of Buddhahood through practices of visualization and imagination.

Building on Heidegger and Merleau-Ponty my paper aims to show to what extent the notions of immersivity and embeddedness correlate in a certain sense with classical Chinese concepts of visualization. Furthermore, I would like to trace the outlines of possible visual ontologies in a cross-cultural and cross-disciplinary setting; – this approach inevitably has far-reaching implications for the new emergent domains of artnsci, and especially the quickly expanding realm of Virtual Reality.

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Keywords: Buddhist Phenomenology, Chinese Landscape Painting, Immersivity, Visual Ontology, Heidegger, Merleau-Ponty, Virtual Reality
ARTWORK PRESENTATION
Artists’ Session at NCKU Art Gallery

15 NOVEMBER 2016, Tuesday

5pm - 6.30pm
“NOTATIONS” THE CREATION OF AN INTERACTIVE SOUND INSTALLATION

《共譜》互動聲音裝置

王聖傑 ¹, 劉祖昇 ², 周佳穎 ³, 朱潔君 ⁴

摘要

觀眾可以透過本作品《共譜》互動機動樂器的撥弦，而即時產生音樂與投影螢幕上的音譜。螢幕上的音譜乃挪用 15 世紀所使用的古音譜 Gregorian Chant，此古音譜乃由四線譜組成，每個音符都以方形呈現，是屬於無伴奏的單音音樂音譜。互動機動樂器是由 Arduino、Adafruit、Processing、Max / MSP、無線藍芽、LED、3D 列印、壓克力及金屬管等所創作成的音譜，允許觀眾在現場即時撥弦而產生不同的音譜，所發出的音樂會即時轉換成正確的音譜投影於螢幕上。當沒有觀眾時，會自動播放與顯示之前所有觀眾所創作的聲響與音譜，表現了互動科技與共創音譜的數位美學，賦予數位機動樂器更具文化性與音樂性。

關鍵字：共創、互動裝置、機動藝術、互動聲音、古樂譜、互動程式

三幕投影

圖片來源：王聖傑

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圖：《Notations》裝置介面
圖片來源：王聖傑（2016/09/19）
UNRAVELLING THE SEQUENCE

Eleanor Gates-Stuart

ABSTRACT

‘Unravelling the Sequence’ is the first in a series of new artworks by artist, Eleanor Gates-Stuart focusing on the morphology of organisms and their molecular structure as the humanoid expression becomes visible within the development of protein and bacterial growth. These minuscule genetic life forms are predominately stilted in time, as the moment is encapsulated in the void of virtuality, awaiting simplicity to overcome the complexity and the genome sequence to be complete.

Keywords: Artscience, Interdisciplinary, Bioart, Science Communication

Artworks:

Image: ‘Unravelling the Sequence’ by Eleanor Gates-Stuart, 2016
Photograph, Size: 841 mm x 867 mm

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A series of small, playful drawings based on histological slides; brightly colored, illustrative and cartoon-like bits of bodies. They are scaled to recall the view through an analog microscope – the view to a slide specimen covered by a thin square glass plate. The clarity and linearity of these drawings resists the cloudy and out-of-focus qualities that are associated with manually directed microscopic vision. The Histograms can move beyond their identification as drawings, evolving into stamps, patterns, papers.

Hypophysis, 2011
Interdigitations, 2011
Cat’s Tongue, 2011
Bone Marrow Reticular Fibers, 2011
Goblet Cells, 2011
"Rove" The Creation of Brainwave Interactive Installation

《遊迷》腦波互動裝置創作

郭為芃 ¹

摘要

人類大量發展科技，使環境受各式各樣的人工波所危害，如光波、聲波、無線電波、微波等，這些人工波所帶來的刺激改變人們對於環境的認知，無形間也影響人們的生活方式。本作品《遊迷》腦波互動裝置乃從作者自身經驗出發，觀察人們日常使用科技方式，探討其中所帶來之社會現象，試圖藉腦波儀與互動裝置結合，思考當今社會過度依賴科技所產生之失控現象。作者建構虛擬空間影像與腦波線圖，當觀眾帶上腦波儀時，腦波訊號經由視覺程式轉譯後推動空間影像，同時繪製線圖並發出聲響，畫面隨腦波特徵，呈現變幻無常畫面變化，反映科技社會下的腦神經所投射之紛亂想像。本文將先探討腦波應用於藝術創作之相關作品，最後針對《遊迷》之創作理念與方法作論述。

關鍵字：腦機介面、腦電波、神經美學、科技依賴、互動裝置

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WALL PARLEY

Fengqi Li\textsuperscript{1}, Amber Bartosh\textsuperscript{2}

ABSTRACT

Wall Parley is an exploration of the possible dialogue between users and intelligent environments. Based on Gordon Pask’s conversation theory, dialogue is a “pruned and described entailment structure” which establishes a complex but ordered relationship between unrelated ideas or events. (Pask 1975) The project is a series of prototypes which iteratively develop a cognitive system between humans and walls akin to the manner by which humans communicate with one another by receiving information, processing that information, and then responding. This participatory engagement between two entities, human and wall, creates a dialogue, an intentional reciprocal commitment for which the capacity of communication by and with the wall can be evaluated. The mechanism of the wall is programmed using a Java and C-based language to demarcate identified gestures and trigger specific panel rotations. Collectively, the panels create perceivable configurations on the surface of the wall which result in a tangible interface.

Ultimately, Wall Parley is approaching the integration of high or strong artificial intelligence (AI) in architecture but is limited to applied AI which operates in a narrow field and produces predictable responses based on processing patterns and programming. (Schrader 2015) Though the wall is responsive as a product of its programming rather than through cognitive recognition, it provides a semiotic medium for envisioning the future where architectural elements act as autonomous intelligent instruments - capable of capturing data, interpreting it, and responding in an interactive manner. Additionally, it allows for the behaviour of humans in the presence of proto-intelligent architecture to be chronicled and inform future software development of the wall. Forthcoming iterations of Wall Parley will continue to layer the input and output mechanisms of the wall to provide increasing complex and unsupervised responses, encouraging human and wall dialogue, and redefining the reference “like talking to a wall.”

References


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intelligence-and-the-end-of-the-world/.
Keywords: Embedded Responsiveness, Intelligent Environments, Artificial Intelligence, Human-Computer Interaction and Design, Interdisciplinary/Collaborative Design
“Brain” of A Wall

Prototype: Basic Mechanical System  Prototype: Double Sided Wall Unit

Prototype: Wood Panel Wall Unit  Prototype: Pattern Wall Unit
Wall Parley
Panels rotate to reveal layered construction and perforation beyond.
ABSTRACT

The use of the word 'Ou (a homonym which can mean both puppet and chance)' in the title gives it a double meaning, and indicates a bold experimentation which weaves together 'form' with the 'concept' of artwork. In regards to form, a 'happening' narrative mode is presented. An 'interactive digital interface' is used to attempt to create an open experimental playscript where a different improv performance is given for each audience that participates. In addition, an imitation of the 'rehearsal' process composed of actors on the stage playing the parts of 'street performers' along with members of the production crew deliberately shown on stage while operating computers, cameras, projectors, sensors, machinery, and ladders can be seen played out on stage.

The saxophone which plays at both the start and the end of the performance serves as a metaphor of an endless street performance. Conceptually demonstrating the likening of 'street performers' to 'puppets', controlled and ensnared within a virtual world. The use of the Internet and technology such as MYO muscle sensors, brain wave transmitters, and mobile phones allows for a long-distance and unrestricted communication of information and emotion, thus creating a space without the constraints of time and distance. Yet, the ‘puppet-like’ body controlled by technology remains unable to leave the confines of its cage (the area on top of the white box).

Minor revision: The daily act of putting on and wearing a mask with ‘666 (the mark of the beast)’ printed on it while wearing alluring high-tech equipment illustrates the conflicting process described in Genesis where Satan tempts Eve into eating fruit from ‘the tree of knowledge of good and evil’. This work reflects on the idea of whether the advancement of human technology will also result in their entrapment within an inescapable nightmare controlled by Satan.
ANALOG STORIES

Yi Ning Lo

ABSTRACT

‘Analog stories’ is an artwork started from sharing stories and experiences with other people, but much of the time, it’s hard that we couldn’t bridge the gap between two different group, cultures or languages. Artist looked for a way that people could understand each other’s meanings without languages and texts, and finally she found that the sound tone and tone emotion would be the easiest way for most of people. She considered that the sound of digital signal is too popular to be used in modern society, and it also ignores some details from the original sound waveforms. In contrast, the sound of analog signal could completely copy the original sound waveforms and faithfully express the details of the sound. So the artist found the vinyl turntable and vinyl would be the best choice to play the analog signal rather than the digital signal with CD player and CDs. She used the analog signal by playing vinyl turntable to represent the details of every story beyond expression. She questions that the real emotion would be changed through the digital signal in the modern society. Also she experimented different texture and material as the vinyl and chose the acrylic to be the base material. She collected the surrounding things from her daily life and processed on the acrylic vinyl by laser engraving, carving and rubbing. The notches on the vinyl surface affect the sound pitch. The most interesting result of the vinyl experiment is that artist put the vinyl in her cats’ litter box to carve the surface by her cats. The tune of that vinyl sounds like the drizzle. The audience could easily get the vinyl information from the vinyl cover picture and listen to the sound by playing the turntable.

Keywords: Vinyl, Sound, Stories

The installation of ‘analog stories’ in ‘broken window theory’ exhibition, photo by Lo, Yi Ning

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The vinyl and information installation of ‘analog stories’, photo by Lo, Yi Ning
The audience listened to the ‘analog stories’ in ‘broken window theory’ exhibition, photo by Lo, Yi Ning

The details of vinyl of ‘analog stories’ in ‘broken window theory’ exhibition, photo by Lo, Yi Ning
BREATHING SHELTER—RELIEVE CITIZEN PRESSURE WITH THE BREATH CONTROL

Xiaotian Sun\textsuperscript{1}, Kiyoshi Tomimatsu\textsuperscript{2}

\textbf{ABSTRACT}

We propose an interactive breathing shelter which could regulate the breath of city and its dwellers by influencing their breath speed to relieve their stress. An interactive urban shelter expresses the relationship between city and its dwellers through the action of breathing. In Schrödinger's book What is Life?, he originally stated that 'what an organism feeds upon is negative entropy' and that 'the essence of metabolism, in its survival period successfully ridding themselves of organisms, must have all the entropy.'

Cities increase in entropy due to pollution, traffic jams and information overload and so on. Meanwhile, these issues prompt stress in citizens. Breathing is the simplest way to counter the increase of entropy – people are noticeably relaxed and find it easier to concentrate after deep breathing. This city shelter thus aims to transform anxiety to relief – you breathe the city and the city also breathes back at you, in a mutual beneficial connection.

\textbf{Keywords:} HCI, Bio-sensing, BreathControl

\textbf{References}


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QUANTUM CONSCIOUSNESS: A VISUAL/SONIC INSTALLATION THAT IMMERSES THE VIEWER IN QUANTUM PHENOMENON

Paul Thomas¹

ABSTRACT

Quantum Consciousness is an audio-visualisation of atomic data which indexes the quantum "movement" of an electron. This project delivers an aesthetic and immersive experience that places the viewer inside the virtual superposition of a sub-atomic particle (i.e. its field of probability). This audiovisual experience establishes a metaphor and indexical map of human thought. The quantum spin of the electron here mapped is serving as the conduit for the form of the sensory stimuli of the work. The broader significance of Quantum Consciousness concerns the possibility of non-human, computational intelligence commingling with human consciousness. This link stems from the fact that the "material" of the electron and its quantum behaviour is the basis of the possibility of quantum computation.

Quantum Consciousness is in the visualization of the co-emergence of thought-data (viewer) and quantum-data (electron). The scientific research informing the work was conducted in collaboration with Assoc. Professor Andrea Morello. Dr. Morello’s current research looks at controlling the spin of electrons and nuclei for the development of the processor in quantum computer. The experiment makes visible and audible the spin of the superposition of a phosphorous electron that has been bombarded by microwave signals. The paradox of the quantum superposition (best articulated in the Schrodinger’s Cat - thought experiment) exists as an actual and empirical condition in which an electron occupies multiple positions in space simultaneously, but none specifically.

The scientific data for this project is generated from a microwave signal which transforms a reading of Richard Feynman’s (1982) paper on the birth of the quantum computer. The link between the quantum computer, consciousness and artistic expression is presented via the installation through the co-emergence of thought and quantum conditions. Quantum Consciousness is thus an experiment in the imaging and materialising of impossible states of quantum matter and the co-emergence of human consciousness.

Keywords: Quantum Art, Transdisciplinary, Uncertainty, installation.

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Screen shot of Quantum Consciousness

Installation diagram showing projection and an array of eight speakers.
Quantum Consciousness was on the cover of nature nanotechnology.
Screen shot of Quantum Consciousness showing the firing positions of each analogous neuron in the Bloch Sphere.

Screen shot of Quantum Consciousness
"Rethink" the creation of interactive performing arts

《反思》VJ 應用於互動表演創作

蔡佩宜

摘要

女性的身體自古以來被社會上的審美觀給束縛，現今追求著符合大眾的審美觀時，我們的思想無疑的被社會的觀感由內而外的操縱著。本創作《Rethink》以自身經驗出發，以 VJ 即時控制影像的表演方式來探討女性於父權社會中的相互關係，如女性身體影像符號、女性身體測量、標語、剪刀等，試圖反思女性身體能否脫離父權文化下所制定的標準與刻板印象。

關鍵字：VJ、女性主義藝術、互動表演、新媒體藝術、控制

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WATERMARKS

Anastasia Tyurina

ABSTRACT

The main purpose of my doctoral visual art project is to uncover the inherent features of water that are invisible to the eye through using the Scanning Electron Microscope (SEM) and, by doing so, to use the process of evaporation as an alternative and unusual artistic method of visually presenting the composition of water. My approach is unique in the specific way in which I use water to create images using the SEM. This process of revealing the nature of water (water chemistry) allows me to play with it like an artist. I am not aiming to produce scientific records through my use of the SEM; instead, like several artists before me, I am using scientific photography methods to create aesthetic images. Scientific photography aims to record and illustrate data and experiments that differ according to specific disciplines. Although scientific photography can be considered non-aesthetic, since its main purpose is not to convey beauty but rather accurate information, its ability to record material in addition to that which is merely informative allows it to also serve expressive, subjective, and aesthetic purposes. In my project, I use scientific photography to achieve an objective (scientific) resemblance of individual water drops to their subject, but the resulting images are highly selective in what they show and how. I try to create ‘expressive portraits’ of water drops. My artistic intervention of a scientific process through experimenting with the SEM is a way to find what potentially different things my images can say about water to a viewer. Transforming the micro-world to a macro level, I play with the meaning of presented images. I also make the captions for my photographs intriguing as they can resemble aerial photographs of topographic features of water reservoirs. My images evoke an irony in that pollution is shown as being beautiful. This causes a dilemma for viewers, particularly because the gallery space is different from a laboratory. Keywords: Interdisciplinarity, Photomicrography, Scanning Electron Microscope, Art & Science, Water

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COLLECTIVE MOVEMENT

Tai-You Ye¹, Ashok Mistry²

ABSTRACT

The work explores active and passive collaboration in the context of electronic media. In particular the work explores passive use of technology to control the capture and presentation of other people's creativity. By placing a kinect device in the window of an art centre Tai You Ye encouraged dancers using the space for rehearsals to respond to an image of their depth data. In doing so he attempts to encourage dancers to allow him to passively capture generative imagery and thereby, engages in a form of passive collaboration. The images generated from the dancers’ movements were then collated by Ashokkumar Mistry who then reworks them to create new compositions. In doing so Tai You and Ashokkumar play the part of social mediator who engage with the dancers to reroute their creative outputs.

Keywords: media art, interactive art, graphic

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AUSTRALIA’S NETWORKS OF ART AND SCIENCE

Hugh Davies

ABSTRACT

In the past three decades, Australia has maintained a vibrant presence at the artsci nexus. With artists engaged in science including Natalie Jeremejenko, Patricia Piccinini, Joyce Hinterding, Oron Catts & Ionat Zurr and Stelark, and through the efforts of organisations including The Australian Network for Art and Technology, Experimenta, Synapse, Symbiotica and CSIRO, Australia is held as a respected innovator in the international media art and art/science community.

Yet this recognition abroad has not been reflected at home. In fact, over recent years, Australian governments have increasingly moved away from supporting local innovations, emerging aesthetics and experimental trajectories in art/science collaboration, and have instead focused on funding traditional European art forms such as opera, ballet and classical music. The same governments have simultaneously viewed the field of science with circumspection – especially in relation to climate change. The result has been a reduction in support for both artistic and scientific sectors. Reporting on the continuity and success of Australian artsci practitioners, this paper offers strategies and tactics for the sustainability of artsci practitioners and networks.

Hugh Davies is an interdisciplinary artist, academic and media researcher. He is a senior lecturer within the Media: Screen + Sound program at LaTrobe University, where he is also co-director of Centre for Creative Arts.

With a background in film, television and online production, and education in sculpture, multimedia design and design philosophy, Hugh explores the tension between digital and physical realms. As a Multiplatform Producer at the Australian Broadcasting Corporation, he created an award winning education portal and later worked as a consultant on the ABC’s first Alternate Reality Game: Bluebird AR. Hugh has extensive history in arts management and leadership. He was a founding committee member of Seventh Gallery in Melbourne, has exhibited and curated work in Australia and abroad, and has operated as Board Chair of both the Australian Network for Art and Technology (2009 - 2011) and the Freeplay Independent Gaming Festival (2011 - 2014). Hugh remains on the Freeplay board of directors and maintains a position on the Advisory Committee of Channels Video Art Festival.

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DIGITIZING IMAGES: CONVERSION OF LANDSCAPES

Ting-Yi Yu¹, Pei-Shan Huang², Ming Turner³

ABSTRACT

Digital art is an artistic practice that utilizes digital technology as an essential part of the creative process. According to Digital Art⁴, digital art is itself placed under the larger umbrella term ‘new media art’. The impact of digital technology has transformed activities such as painting, drawing, sculpture and music/sound art, while new forms, such as net art, digital installation art, and virtual reality, have been recognized as artistic practices. More generally the term digital artist is adapted to describe an artist who employs digital technologies in the production of art. Computer art is a type of art where computers play an essential role in the production or display of artwork. Such art can range from an image, sound, animation, video, videogame, web site, algorithm, performance or installation. Computer art is by its nature evolutionary since advances in technology and software directly affect what is possible and can be created. In the project, Digitizing Images: Conversion of Landscapes (2016), we have transformed landscapes with digital techniques and software to create some fantasized imageries. Therefore, digitally visualized art consists of either 2D visual information displayed on an electronic visual display or information mathematically translated into 3D, which can be viewed through perspective projection on an electronic visual display.

We live in the real world where images are not only seen just through our eyes but can also be reproduced as photographs. Similarly, we can also use computer graphics, data and programming to document these scenes. In Digitizing Images: Conversion of Landscapes, we draw convert images into vector graphics, and we utilize programs to convert images into geometry shapes, in order to create different beauty of landscapes. Either way, we converse the original images of landscapes into digitalized forms which indicate electronic interpretation of its aesthetic vision.

Now, computers have an influence on our everyday life as well as the production of art. Nevertheless, landscapes aren't always the first thing that comes into mind when one thinks of vector artwork. For example, in Digitizing Images: Conversion of Landscapes, we utilize software to draw and convert landscapes into vector graphics. Also, we try to utilize programs to convert landscapes into geometric shapes.

Technological progress has affected our daily life more and more. Although, it is still
rather challenging to utilize technology in art, we believe that it offers a different perspective to present our artworks. Ultimately, the digitalized imageries of landscapes would contribute to a different feeling and mood for the viewers, and we are not merely converting the landscapes, but also people’s minds.

Keywords: Digital art, computer graphics, vector graphics, geometry
SESSION 5

16 NOVEMBER 2016, Wednesday

9am - 10.30am
Recent critics have focused on different aspects of the cinema of Tsai Ming-Liang. They include sexuality in Taipei (Ivy Chang), a cinema of slowness (Song-Hwee Lim), and reading his works as post cinema (Song-Yong Sing). Indeed, Tsai Ming-liang’s oeuvre cannot be simply divided into three genres: feature film, stage production, and video. His recent works such as Stray Dogs (2014), No No Sleep at MoNTUE (2016), and The Monk from Tang Dynasty (2016) make the distinction impossible. The sustained long-takes in Stray Dogs serve as ‘realistic’ recordings of such everyday activities as eating, sleeping, and urinating, and at the same time, ironically, interrupt the narrative, suspending the temporality of the film. The multi-screens used in projecting No No Sleep and Autumn Days at the Museum of National Taipei University of Education challenge the very idea of seeing a feature film in a dark, silent, single screen. This paper suggests a new way of reading Tsai’s cinema as artsci, not in the sense that his works are made by cutting-edge technology, or that his works cancel the boundaries between art and technology, but that by using slightly ‘backward’ or ‘retro’ (for example, the use of old songs in almost all his films) aesthetics, Tsai manages to expose the viewers to what Agamben calls the experience of ‘contemporaneity.’

Keywords: Tasi Ming-liang, Strage Dogs, long-take, Giorgio Agamben, contemporaneity, video installation
HANDS ON, FACE OFF: CHINESE CULTURAL PERFORMANCE EXPERIENCE WITH INTERACTION TECHNOLOGY

Chieh-Ju Huang¹, Guan-Lin Liu², Geng-Hao Hsu³, Sheng-Ming Wang⁴

ABSTRACT

This study contributes to creating suitable and affordable viewers’ experiences for both artists and curators while interactive technology changes the way art exhibitions and installations are being experienced. Based on aesthetic-experience as appreciative, perceiving, and enjoying, and “Art as Experience”, where emphasis is placed on distraction and dispersion, observation and thoughts, desire and acquisitions, and the continuous occurrence of all of the above (Dewey, 1958), and metacognition being the process for self-awareness of personal introspection process, and the ability for self-adjustment, all media are the extension of human senses (McLuhan, 1967). Music is therefore, the extension for ears, animation and videos are the extensions for visual and auditory, and interaction technology art is the extension for multiple sensory experiences. Based on these premises, two projects have been incorporated in an arts exhibition, in confirming that the viewer’s metacognition being the cognitive ability in experiencing the performance while understanding each movement in the interaction behaviors. Additionally, viewers comprehend the reason for the strategy and behavior of interaction, and make each interaction more successful and interesting (Flavell, 1976). The interchange and integration of media is not the only about the re-interpretation of the different means post deconstruction, but more importantly, the alteration between the creator and the receiver roles where the personal and objective “human” experiences play a major part. Similarly, experiencing the two projects are not only in-takes of the creators’ interpretation of the receivers’ receptive experiences, but the process of how the context gets self-assimilated a rather interactive creativity generating experience. There are two multimedia projects for generating and contributing receptive experiences. The first project integrates Chinese Glove Puppetry with gesture technologies such as hand tracking and holographic projection, stimulating viewers to interact and gain insights to the theme through their user experiences. The second project assimilates Beijing Opera with face recognition technology in order to develop interactive kinesthetic games, where the innovative interactive

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mode operation effectively enhances viewers’ interests. Through viewer behavior observations and post-interaction interviews, cognition experiences, affection attitudes, and skill abilities were interpreted. The applied interaction technologies increased both the viewers’ self-reported interest rate and levels of understanding towards the two themes, leaving with the willingness to further interactions.

Keywords: Art as Experience, Metacognition, Motion Sensing, Holographic Projection
ARTIFYING MATHEMATICAL TERMS

Reto Schölly

ABSTRACT

‘Math and art have always been secret accomplices’, as Austrian philosopher Konrad Paul Liessmann states (Schettina 2009, pp. 4-6). Quite an obvious example for this notion would be Leonardo di ser Piero Da Vinci, who proposed studying the natural and mathematical sciences in order to learn how to draw natural things correctly (Eitelberger von Edelberg 1882, pp. 53-58, 197-202). Pythagoras, on the other hand, already united art and math before 500 B.C., by inventing European music theory through his discovery of harmonic relationships like octaves, fifths and quarts within numerical ratios (Reiser 1967, pp 42-44).

Today’s digital art very naturally incorporates mathematical systems into its own topology, while art theory even provided some fundamental insight into mathematical aspects of the sciences. A common example would be Max Bense’s Aesthetic Measure

\[ H = -\sum p_i \log p_i \]

which attempts to measure the aesthetic content \( H \) in an artwork by summing up the probability of occurring signs \( p_i \) and multiplying them with their own logarithm digitalis (Bense 1982, pp. 254-257). This notion eventually lead to Claude Shannon’s formula for calculating the information entropy in digital data, which applies Bense’s term to signals, determining their information density (or entropy). Calculating the information entropy of a signal is used, among other things, for wireless signal transmission and data compression.

Furthermore, it bears no secret that art can also be used to describe mathematical terms: Abraham Moles showed that so-called ‘aesthetic machines’ can perform ‘aesthetical transformations’ between digital signals, artworks or mathematical entities (Moles 1978, pp. 316-331). These processes can be reversed: A computer can be used to create an aesthetic machine, such that it transforms a mathematical term into a picture which makes its inherent aesthetic message visible. Digital technology can thus be used to create an artified representation of a mathematical term, like art theory laid out some of the fundamentals for digital technology. This paper shall outline the theory behind a process for creating a digital image out of a mathematical term, and illustrate how the image describes the aesthetic essence of the equation.

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This paper shall include an explanation on how to turn this term:
\[
\text{matrix}(x, y) = (\text{abs}((\tanh((y-0.3\cdot x+0.2)\cdot \cos(x+2\cdot \sin(0.02\cdot (y-\sin(x\cdot \tanh(y-3)+2))))-2\cdot \sin(x/(0.1+\text{abs}(\tanh(y-2\cdot \sin(tanh(y-4)\cdot (x+2))))))))\cdot (x-0.2))/1.2-3+\cos(tan(cos(y-4)+(x\cdot (\text{abs}(sin(x^4-(y-sinh(x)\cdot 4-sin(x/(0.1+\text{abs}(y+cosh(x^2-sin(y+2)))))))))+4\cdot \text{cos}(y/2)))+1-\text{sin}(x\cdot \text{cos}(y)+2))\cdot \text{cos}(0.1+\text{abs}((0.1+\text{sin}(x)/5)/3))));
\]

Into this picture:

MATGX_ICE, signed
limited print on canvas by
Reto Schölly

Keywords: Digital Art, Mathematics, Interdisciplinarity

Sources


SESSION 6

16 NOVEMBER 2016, Wednesday

4pm - 5.30pm
KNITTING A PARATEXTUAL BODY: VIDEO INSTALLATION AS A BODILY IDENTITY CONTEXT

Meng-Chin Huang

ABSTRACT

McLuhan once said in Understanding media: The Extensions of Man, “When media technology serves as extension and catalyst of sensory lives, any media in the meantime influence the overall domains of all the senses.” He thinks that the use of media is an extension of the psychological and physical abilities of humans. Different media can bring new communication techniques. This idea investigates the synchronicity of media record time and images. Through sensory circuits, we think about the visual frameworks under physical restructuring. The body topics investigate the image crystals and loops of image media and time logic. Through media arts, we discover the development of paratextual bodily relationships and contents. The viewers are placed in an environment of actual interaction processes. The image locations are transformed into atmospheres for viewer experience. With special projection of transforming private memory spaces, the messages are presented as a sensational relationship field.

The concept of the time machine is often used in the allocation of computer hard drive partitions. Faced with the theory of applying saving interfaces in new media art, body identity becomes a time machine because of the cycles of the biological clock as well as the growth of time produce changes in its structure. By extension, planting the concept of time within technological devices can be guessed to be like placing a time machine within industrial machinery, there is nowhere without a means of calculating the speed of time. If body as media, particularly on the border of passing the speed of light, produces a dialogue between human thought and the new medium of motion pictures. Clearly, while Video artists discuss how technological media, being diachronic in time and image, develops a visual framework of body-reconstruction through circulative perceptions, within the time crystals and circulation rendered by video, as a medium, and awareness logic, the inter-faces variations between multiple crystals and sound waves through the interplay of media transforming body images, directed by space arrangement and the interdisciplinary placement, to touch upon the conceptual imagery involving images and body movement.

This thesis has mainly integrated the boundaries and feasibility of body extensions for new media arts, especially focus on artist’s video installation in response to

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contemporary arts. Together, here also discuss the core topics of body time in the technological era. The interface phenomenon of image arrangement and sound waves, through the layout guidance of spaces, the media changes the interactions of body and time; through the immersion situation created by the video installation, how to put forward the field domain of text within text created by the linking of image interfaces, situational audiences, and significance of artworks.

Keywords: paratextual body, interdisciplinary, body identity, video installation, interfaces
This article suggests the relations of politics and aesthetics in the flexible, mobile, variable collaborations of computational/informational technologies open a new way of being-and-knowing. As a new discipline that involves integrating knowledge into computer systems, knowledge engineering presents joint cognitive systems, in order to explore interactions and interfaces for harmony between human intelligence (domain knowledge works, human decision making, human cognition) and knowledge technology (knowledge support, knowledge modeling, knowledge processing). It provides a chance to develop a networked knowledge enabling collaboration between art, design and engineering. Knowledge engineering challenges linking art, technology and humanity as the understandings of “We” human-and-technology in collaborative actions rooted in interdependent perspective. It recomposes both human identity and technological practices as collaborative fusion between the human and technology. The new identity provoked by such technologies might be called “We” human-and-technology. In this conceptualization of “We” human-and-technology, the coded complexities of informatics technology remixes the axes and dimensions of action between politics and the aesthetic. Prior investigations of the relation of politics and the aesthetic in knowledge engineering art are stuck the binary frame of domination in which “Us” versus “Them” inforses a mutual degradation of the human and technified in thought and action. This approach is criticized here from two perspectives. First, the real disruption of “We” human-and-technology is a reified inversion by a frame of fantasy, using the tolerance-tactic. Second, the traditional instrumental understanding of technology sees it only as an instrument for colonization, which is a limited appraisal of all that happens in technological praxes. This study, then, traces a few intriguing, but not yet fully disclosed, relations between technology, art, and politics by exploring how new informatic arts instantiate the communal, collaborative, and collective agencies of “‘We' human-and-technology” as collective deliberations beyond the stale “‘I' individual-and-instrument” personal domination conventionally attributed to technological rationality. It wants to slip past the binaries, inversions, and fetishism that mere toleration accepts in the colonizing and dehumanizing...
aspects of instrumental reason. Art can find difference in domination. These differences then might advance the “friendship” of “We' human-and-technology” mediations as a metaphor for decolonizing and rehumanizing other relationships typically flattened into the fiendishness of “'I' individual-and-instrument domination. To make this transition, one must spin the art of translation another way to glimpse these aesthetic dimensions in the politics of knowledge engineering art involving informatics technology and media performance art. Hence, this analysis turns to Marx, Heidegger, and Fanon to rethink how the workings of technical rationality parallel commodification and colonization as well as those of leisure and liberation to ask how this new aesthetic sense of technology might evade dehumanizing forces. It is to understand knowledge engineering art as a new triangle of art, technology and humanity in multi-cultural life enabling to collaborate with Eastern and Western thoughts.

Keywords: “We” human-and technology, politics and the aesthetic, instrumental reason, binary frame, tolerance-tactic, de/colonization, media-art-cultures, knowledge engineering art.

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Colliding Worlds: How Cutting-Edge Science is Redefining Contemporary Art
by Arthur Miller

A dazzling look at the artists working on the frontiers of science.

In recent decades, an exciting new art movement has emerged in which artists utilize and illuminate the latest advances in science. Some of their provocative creations—a live rabbit implanted with the fluorescent gene of a jellyfish, a gigantic glass-and-chrome sculpture of the Big Bang (pictured on the cover)—can be seen in traditional art museums and magazines, while others are being made by leading designers at Pixar, Google’s Creative Lab, and the MIT Media Lab. In Colliding Worlds, Arthur I. Miller takes readers on a wild journey to explore this new frontier.

Miller, the author of Einstein, Picasso and other celebrated books on science and creativity, traces the movement from its seeds a century ago—when Einstein’s theory of relativity helped shape the thinking of the Cubists—to its flowering today. Through interviews with innovative thinkers and artists across disciplines, Miller shows with verve and clarity how discoveries in biotechnology, cosmology, quantum physics, and beyond are animating the work of designers like Neri Oxman, musicians like David Toop, and the artists-in-residence at CERN’s Large Hadron Collider.

From NanoArt to Big Data, Miller reveals the extraordinary possibilities when art and science collide.
70 illustrations, 8 pages of color

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