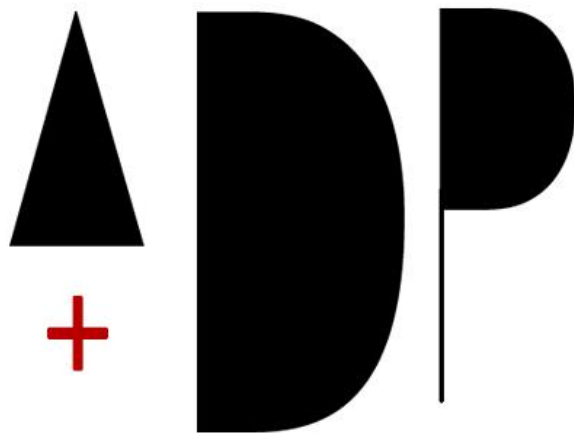


sIREN

Arts & Digital Practices



The University of Edinburgh
30 -31 May 2017

Welcome

On behalf of the organising committee, we welcome you all to the international conference 'Arts and Digital Practices'. The conference will take place over the 30th and 31st of May 2017 in the Lauriston Campus of the University of Edinburgh.

The two-day international conference with the aid of Devolved Researchers' Fund and Researcher-led Initiative Fund will explore topics on key practical and philosophical challenges that contribute to the broader discussion of what it means to use digital tools as a form of artistic inquiry. These will include the themes of computation and the creative process, data analysis in art practice, digital arts and urbanism and the intersection of art and science.

The plethora and availability of digital tools and practices have transformed the ways art is created, perceived and disseminated. This had a distinct impact on how research is conducted across the arts and humanities as a whole, from practice-led to process-focused and people-centred research. To this end, an interactive format of hands-on workshops, papers and a performance session will lay the foundations for a creative dialogue among artists, theorists, academics and practitioners. 'Arts and Digital Practices' conference aims to provide an arena for academics across disciplines for extending the debate of interdisciplinary practices and their appropriate methods as well as their potential.

The conference is hosted by SIREN, the student-led Interdisciplinary Research Network of the University of Edinburgh, established in 2016 by PhD students of Edinburgh College of Art. The organising committee is a group of enthusiastic researchers who are working on various aspects of theory and practice related to the conference theme. The members of the committee are researchers from the fields of Art, Music and Architecture based in the University of Edinburgh.

We look forward to welcoming you in Edinburgh in May.

Eleni-Ira Panourgia and Katerina Talianni

On behalf of the organising committee

The organising committee

Eleni-Ira Panourgia, PhD in Art, School of Art, University of Edinburgh

Katerina Talianni, PhD in Music, Reid School of Music, University of Edinburgh

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Prof Richard Coyne, Professor of Architectural Computing, School of Architecture and Landscape Architecture, University of Edinburgh

Prof Chris Speed, Chair in Design Informatics, School of Design, University of Edinburgh

Prof Peter Nelson, Professor (Personal Chair of Music and Technology), Reid School of Music, University of Edinburgh

Dr Jules Rawlinson, Programme Director MSc Design and Digital Media, Lecturer in Digital Design, School of Architecture and Landscape Architecture, University of Edinburgh

Dr Martin Parker, Director of Outreach, Senior Lecturer in Sound Design, Reid School of Music, University of Edinburgh

Dr Owen Green, Teaching Fellow, Reid School of Music, University of Edinburgh

Mr Yati Durant, Lecturer in Music, Sound & Moving Image Programme Director of MSc in Composition for Screen, Director of the EEAMS at Soundtrack Cologne, University of Edinburgh

Conference Program

Tuesday, 30th May 2017		
9:30 - 12:30	Workshops	
12:30 - 13:30	Registration and Lunch	
13:30-14:20	Locus Sonus Audio in Art. From collective to individual and back	Keynote by Dr. Peter Sinclair
Digital Cultures - Spaces	14:20-15:50 Textual Maps - The Body as Site	Alexandra Jonsson & Loes Bogers
	Grasping Elapsing 3.1	Peter Williams
	Chair: Dr. Owen Green	Revealing the Invisible City: Comprehending the human-city bond through data visualization and sonification
	Neu Collective Consciousness Q & A	Adrian Barahona Rios, Lara Estévez Fernández, He Cui, Shuyuan Huang and Katerina Talianni Vik Kaushal
15:50-16:00	Coffee Break	
16:00-16:50	Art and Mobilities in Unstable Landscapes	Keynote by Dr. Jen Southern
Digital Tools	16:50 - 19:00 Glass Gateways	Dr. Jessamy Kelly and Geoffrey Mann
	Chair: Prof. Chris Speed	SilkRoad -Digital/Analog. Creating public art intervention in the context of education and technology
	Language or medium: the malleable structure of art making in a digital environment	Jonathan Kearney, Alejandro Escobar and Céline Villaneau
	The Perfect Circle': Using robotics as a creative tool in contemporary design and art practices	Abeer Basha Tirupattur
	The Metaphysical Potential of Networks Q & A	Joshua Clayton
Wednesday, 31th May 2017		
9:00 - 9:20	Breakfast	
Digitization in art practice	9:20 - 10:50 'The Ritournelles of Digitization in Art'	Aysegul Yildirim
	Chair: Dr. Sophia Lycouris	Exploring social issues and cultural knowledge through machinima
	Digital Vivisection: The Technologic Consumption of Human Anima	Jeffrey L. Gangwisch
	Scientific methods and creative processes for wearable technologies: from invention to innovation Q & A	Livia Tenuta and Susanna Testa
10:50-11:00	Coffee Break	

11:00-11:50	Composing methods: on the limits of problem spaces in a time of rendition	Keynote by Director of CIM Celia Lury
11:50 -13:40 Digital arts and urbanism Chair: Prof. Richard Coyne	The Art of Transformation: Using Virtual Space for Cultural Organizing	Lee Boot and Leah Michaels
	Hyperlocal Imaginaries	Dr. Claire McAndrew and Prof. Paul Sermon
	Digital art in public spaces: New urban landscapes	Serena Del Puglia
	Exploring the Intersection of Spatial Practices and Technology with Critical and Creative Methods: Some Experiences and Suggestions	Christopher Wood
	Exploring & Sharing People's Emotional Bond with Places in the City	Shenando Stals
	Q & A	
13:40 -14:30	Lunch Break	
14:30-15:15	Literal translations? How computer-assisted scoring of soundfiles is affecting the aesthetics of contemporary music	Keynote by Dr. Nicolas Donin
15:15 -16:40 Computation and Creative Processes Chair: Prof. Peter Nelson	Digital interactions: Sound and three-dimensional forms	Eleni-Ira Panourgia, Finbar Wheelaghan and Xue Yang
	The Laptop Tour: Redefining Classical Music Performance Spaces	Dr. Sharon Coleclough and Dr. Zane Forshee
	A joynt magnetism of three heavens: compositional & computational approaches to sonifying alchemical data	Dr. Dafydd Roberts
	Sorted 2.0	Thomas Hignett
	Q & A	
16:40 -17:00	Coffee Break	
17:00 -18:00 Chair: Dr. Martin Parker	Round Table session with Keynote Speakers	
19:30 -21:00	Closing Concert	
Pixi Dust – Yati Durant & Jules Rawlinson, PixiVisor & Analogue Modular Synthesis		
/stv/ – Marcin Pietruszewski, algorithmic script for spectro-temporal signal scattering		
Jess Aslan – Synth, drum machine and laptop based electro-instrumental experimentation		
Two Thirds of a Good Thing – Dave Murray-Rust & Jules Rawlinson, Laptops & Controllers		

Workshops

Re-imagining the city as a value platform for smart contracts using GPS and the cryptocurrency Ether

Prof. Chris Speed

Chair in Design Informatics, School of Design, University of Edinburgh

This workshop aims to encourage people to reimagine the city as a platform for smart contracts using GPS and the cryptocurrency Ether. The platform allows people to add different types of value zones which either benefits users or it penalizes them – financially.

Sound Loom / Composers Desktop Project

Dr. Trevor Wishart

Composer and Honorary Visiting Professor in the University of York

Trevor Wishart will conduct a workshop entitled “Sound Loom / Composers Desktop Project”, exploring software tools for (non-realtime) sound sculpting.

Hypothetical Instruments

Kristina Andersen

Researcher and storyteller at STEIM (Studio for Electro-Instrumental Music), Amsterdam

In this workshop we will build non-functional instruments and other machines for creative expression. In these objects, several planes collide: the possible, the unknown, the feared and the desired. They are informed by the wish for new sounds and new music, but built from candy, cardboard and other increasingly ridiculous materials, chosen for their lack of permanence and accuracy. The building process is aimed at allowing a broad range of knowledge to materialise in ways that are less normative and constrained by technological concerns and instead emerge as farfetched ideas that offer glimpses of new ways of playing and performing.

Keynotes

Locus Sonus Audio in Art. From collective to individual and back

Dr. Peter Sinclair

Sound Artist | Research Director: Locus Sonus – Audio in Art | Professor: Ecole Supérieure d'Art d'Aix-En-Provence (France)

Locus Sonus is a research unit specialized in sound art. Its main research area is the study of « new auditoriums » or ways of sharing audio spaces through emerging technologies with the aim of investigating and developing the artistic potential they offer. Director of research Peter Sinclair will describe some of the labs longstanding projects including the Locus Stream Open Microphone Project and New Atlantis (a shared virtual world dedicated to audio experimentation). He will focus on their collective organology, the articulation and interdependency between the evolution of the projects and the different artistic uses that have been made of them over the years.

Art and Mobilities in Unstable Landscapes

Dr. Jen Southern

Director of the Mobilities lab at the Centre for Mobilities Research, Lancaster Institute for the Contemporary Arts, Lancaster University

A search dog tracks back and forth across a mountain side attending to the details of an olfactory landscape. A crowd of men in a scrum push slowly through an empty car park during a traditional game of mass football. An archive of letters and objects contain records of material, sensory and communicative journeys of the first world war. Despite the very different contexts of these research sites they each entangle spatial, temporal, social, technical and material qualities in complex relationships. Over the past 15 years mobilities research has developed as a powerful tool for analyzing such complex entanglements. Using these examples from my own practice alongside those of other artists, I will discuss making as a mobile research method and the role of artists in developing a relational and material perspective in mobilities research. At the core of this practice is the use of mobile technologies to track, trace and analyse these collectively enacted mobilities as methods of contemporary placemaking in which qualities of movement such as unruliness, interference, fragmentation and instability are as prominent as rhythm and flow.

Composing methods: on the limits of problem spaces in a time of rendition

Celia Lury

Director | Centre for Interdisciplinary Methodologies, University of Warwick

The sculptor Richard Serra claims that ‘Drawing is a verb’. His art work *Verb List* (1967–68) serves as a kind of manifesto for this pronouncement. In pencil, on two sheets of paper, the artist lists the infinitives of 84 verbs—*to roll, to crease, to fold, to store*, for example—and 24 possible states or conditions—*of gravity, of entropy, of photosynthesis, of nature*. In interview, he says, ‘The problem I was trying to resolve ... was: How do you apply an activity or a process to a material and arrive at a form that refers back to its own making?’. The art critic Rosalind Krauss suggests that the list describes Serra’s practice of composition in terms of action that ‘simply acts, and acts, and acts’. Serra himself draws attention to the relations in which the action that ‘simply acts’ takes place: he describes the list as a series of ‘actions *to relate to oneself, material, place, and process*’. This paper takes inspiration from this art work to consider the potential of interdisciplinary methods to compose problems in a time of rendition.

Rendering is a term with many everyday as well as technical definitions, including: a performance, a translation, an artistic depiction, a representation of a building executed in perspective, as well as meaning to return, to make a payment in money, kind or service, and to pay in due, as a tax or tribute. The origin for all these uses of the term is the Latin *reddere*: ‘to give back’. As such, rendering provides a way to think about the referral back to person, place, material and process involved in the doing of interdisciplinary methods in contemporary society, and to consider the possibilities of such methods in terms of the twin aims of interdisciplinary research of accountability and autonomy.

Literal translations? How computer-assisted scoring of soundfiles is affecting the aesthetics of contemporary music

Dr. Nicolas Donin, IRCAM

Research on remediation has focused on the aesthetic and epistemic transformations that affect a work of art when transferred from a medium, or support, to another. But remediation can be observed at finer levels: in the workshop of most contemporary composers, various musical elements are commonly translated through digital, analogue, as well as 'solfegeic' (notational) technologies. These worlds coexist and interact, therefore extending the playground of musical composition. I shall focus on one of the most fascinating instances of this, called instrumental resynthesis, ie analysing a given (recorded) sound and having it played by several instruments based on a score transcription. Once the hallmark of one particular movement ('spectral music' in the 70s), instrumental resynthesis has become pervasive in the 21st century due to the tight integration of audio- and symbol-based tools as part of computer-assisted composition frameworks. As a consequence, musical scores tend to be a mere trace, or output, of a complex processing involving several technologies, wherein music notation was the medium par excellence of most of the composition process. I will try to delineate the aesthetics consequences of this, based on examples from current composers (Peter Ablinger, Johanna Bailie, Aaron Einbond) as well as earlier instances of resynthesis. I shall argue that this growing trend in composition opens up the possibility of musical 'imprints' that seemed unthinkable in this non-representational art until now.

Presenters

Digital Cultures – Spaces

Textual Maps - The Body as Site

Alexandra Jonsson & Loes Bogers

Alexandra Jonsson | practice-based postgraduate researcher, Centre for Research in Education Art and Media (CREAM), Westminster University, London

Loes Bogers | design coach from Digital Fabrication Lab, Amsterdam University of Applied Sciences (HvA)

Jonsson & Bogers collaborative project Computational Touch is an ongoing artist-led investigation of the production of data in maternal health. The project explores the what, how and why's of data production in the context of maternal health, and seek to explore how the metrics for monitoring, costing, and prediction of health shape the experience and practices of birth. The project includes a series of statistical interventions 'recovering body-parts' from datasets and policies, and life-drawing maternity databases into the context of the pregnant body. Working from clinical commissioning group (CCG) datasets and maternity policies, we look to expose what body parts are in-and-excluded in current healthcare models, prompting us to consider how the body is 'seen' through the metrics of the system. The aim of the research is to question, what are the boundaries that digital technologies draw through the body, and who and what do they benefit? How can we begin to reclaim practices of 'consent' around a body, which has already been claimed the normalised 'opt-out' culture of the 'smart world'?

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Grasping Elapsing 3.1

Peter Williams

Assistant Professor, New Media Art California State University, Sacramento

Grasping Elapsing 3.1 is a participatory performance of twenty minutes incorporating discussion, multichannel display/projection, sound, live scanning and images from contributed and appropriated sources. Under a backdrop of world events and digital culture, the piece produces a complex layering of situations and influences within a specific place and time.

In response to the immediate environment, news of the day and also to participant's input, the presenter uses a computer to create a series of moving image compositions. Concurrently, a scanning station is accessible to participants for contribution to the work. Participants may also download captured output of the presenter's compositions, alter these in various ways and then re-upload them to be incorporated once again into the projected/remixed image. Throughout, the presenter encourages discussion related to the process, concepts and contents of the work.

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Revealing the Invisible City: Comprehending the human-city bond through data visualization and sonification

Adrian Barahona Rios, Lara Estévez Fernández, He Cui, Shuyuan Huang and Katerina Talianni

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This paper discusses “Exposing the invisible: A brain-driven audiovisual walk”, an audiovisual installation part of the Digital Media Studio Project entitled Invisible Cities. Commencing with an analysis of the research, and experimental and compositional strategies we devised for the installation, we will explore the possibilities afforded from the creative combination of sounds, visuals, emotions and places, in relation to more general aesthetic considerations relevant to data sonification and visualization. Our approach understands visualization as a bridge interlinking the emotions with various types of visual elements and sonification as a translation of the inaudible into the sphere of the audible; most importantly, the combination of both as an instrument for comprehending the human-city bond via the embodied sensory experience of place. Our practice, inspired from the interaction between the “lived body” and the (urban) environment, uses the EEG data with an artistic approach in order to reflect upon and re-interpret this bond.

Neu Collective Consciousness

Vik Kaushal

Artist, Architect and Lecturer, Logan & Wilcox-Manchester School of Architecture

Our networked society now helps to facilitate our mediated experience of the world and each other. This technology has become a force of control, creating a society inflated by stress, isolation and confusion. The body, the mind, and its environment now sit disconnected to one another with little, if any regards to time and space. The challenge is to find new ways to complement, extend and enrich the body, mentally, physically and socially, re-connecting the body, the mind and its environment.

When an individual is placed in this sensory environment, the output will reflect the physiological and mental state of the person(s) connected, allowing users to explore and interact with their unconscious biological responses. Giving us a richer understanding of the multisensory nature of the 'lived experience', re-establishing the connections between the body, the mind and its environment.

This paper and performance will explore the potential of generating audio-visual environments from individual participant's biometric data generated by the brain (EEG) and heart (ECG). By establishing a cyclical process of data transferal and perception, forming generative loops of effect on the participants through the creation of the biofeedback loop.

This new terrain of psychophysical interfaces which use data generated by the performance of the body offer opportunities and dilemmas for citizens, spectators, artist and designers in the production of a truly connected and collaborative experience.

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Digital Tools

Glass Gateways

Dr. Jessamy Kelly & Geoffrey Mann

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Craft can be described as an interaction and connection between a person and a tool; be it a pen, a blower's pipe or a computer. New digital tools bridge the gap between the digital and material world. This paper will discuss how research led teaching has opened up new avenues for students from non-tangible material based subjects to access traditional craft processes within the Glass Programme at Edinburgh College of Art (ECA). Firstly, introducing the digital technologies that are used by staff and students; showcasing examples of digitally handmade works that have been developed. The second part of the paper, will reflect upon how a synergy between teaching and technology has brought a diverse range of design students into the discipline, through the new course elective Digital Crafting in Glass (2016). This course introduces a broad cross-section of non-makers to glass through the gateway tools of digital technology. Geoffrey Mann leads the Glass Programme at ECA, his creative practice has been rooted in digital technology since early 2000, other staff include Dr. Jessamy Kelly, Alan Horsley and Ingrid Phillips. A range of glass artefacts will be represented in this paper which demonstrate a mix of handcrafted techniques and digital processes focused through the long-established material based disciplines of glass. All of the glass objects detailed in this paper have been made using digital technology in the processing. Digital however is not an all defining term for us, as artisans we feel that we are part of a Post digital movement.

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Silk Road- Digital/Analog, Creating public art intervention in the context of education and technology

Marcus Farr

Assistant Professor | College of Architecture, Art & Design American University of Sharjah

Silk Road is a public installation that was created in a university fabrication lab and then shipped and assembled on-site. It is made of contoured wood and metal fasteners using original CAD files and a digitally driven CNC machine, then hand finished and constructed. Its form as an art piece references key moments in Spanish, Islamic, Asian architecture by combining three shape-specific profiles from structures found along the Silk Road. The three shapes are combined together to create a new presentation of architecture using the ancient forms as the design catalyst. Three design students, two Jordanian and one Egyptian, along with their American architecture professor acting as project mentor designed and built the full-scale project in a period of 3 months. In its physical form, the project is an art pavilion placed in the public domain inviting the public to speculate and consider both the cultural references of the architecture as well as the tectonic fabrication. Keywords: technology, design, education, STEM, architecture.

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Language or medium: the malleable structure of art making in a digital environment

Jonathan Kearney, Alejandro Escobar and Céline Villaneau

Jonathan Kearney | MA Fine Art Digital, Postgraduate Programme Director, University of the Arts, London: Camberwell College of Arts

Alejandro Escobar | MA Fine Art Digital 2nd year student, University of the Arts London, Camberwell College of Arts

Céline Villaneau | Camberwell College of Arts, MA Fine Art Digital student

This paper, presented collaboratively by three artists (1 MA Course Leader and 2 students of that course), explores three different perspectives, clashing and connecting to reveal the challenges and great opportunities of art making shaped by the digital.

1. Digital tools, such as coding or the Internet, come with their own conceptual values and contexts which influences the artwork and its behaviours. The digital could be considered as an art form: it encompasses and nourishes all aspects of the art practice; the digital medium organically intertwines with the physical outcomes and contexts and becomes inseparable from them.
2. The restrictions imposed on art by flatness and geometric perspective systems are transformed in 3D space. The flat image grows a third axis, it becomes malleable matter beyond physical restraints and, unlike oil brush strokes, its structure remains fluid while retaining its integrity. The dissolution of the edges allows it to flow through the emptiness until it blends with other images. This transmutable material leads to the birth of a meta-image.
3. The digital is simply a language and still far from becoming a medium. Like most languages understanding it can be elusive and yet highly allusive, while at the same time carrying illusive qualities. There may be much perplexity in translation but ambiguity is a friend, that helps to avoid getting lost. The digital allows a translation of dialogue across previously disparate art practices. Can the discomfort of confusing language allow a greater exploration of its subtleties?

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'The Perfect Circle': Using robotics as a creative tool in contemporary design and art practices

Abeer Basha Tirupattur

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Throughout history artists and designers have pursued the search for the perfect shape and form through their works. The 'perfect' ness was approached, examined, investigated and contemplated using various mediums, tools and techniques. Drawing inspiration from Munari's work on shapes, this project looks at Circle as an object of art drawn using the robotic arm. Robotic arms are used in various industrial processes such as automotive manufacturing when a task needs to be reproduced with high levels of accuracy. Interestingly, in recent times several artists have turned their attention to robotics both for inspiration as well to explore the potential of skill and accuracy. This project 'The Perfect Circle' aims to explore how robotic arm can be used in the visual manifestation of different layers of meanings and concepts in a circle. The final output of the robotic arm drawing is presented as two circle drawings with distinctive characteristics created by the two types of marker pen tool. Discussions are drawn by comparing the visual design output with works of artists Kazimir Malevich and Mark Rothko to demonstrate how the robotics open up new trajectories for producing shapes and forms in art and design practices. While the project does not propagate robotics as a replacement for human skill and creativity, it rather supports a progressive view of robotics in the field of art and design. The focus here is highlight the rich potential of robotics through programming in creating new styles, techniques and approaches which had been remote so far for the human 'mind' and 'hand'.

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The Metaphysical Potential of Networks

Joshua Clayton

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Paul Baran's 1964 publication, "On Distributed Communications" is a common reference point in the history of network technology. Its diagrams of centralized, decentralized, and distributed networks illustrate the potential of a communication system to survive damage from a nuclear attack. Consciously or not, "On Distributed Communications" follows in the wake of "The Phenomenon of Man," the posthumously published work of Jesuit palaeontologist, Pierre Teilhard de Chardin. Teilhard's text describes an evolving human consciousness augmented by technological interconnectedness. These two visions of interconnection—one technological, the other ontological—have made markedly different progress in the intervening half-century. Network infrastructure has facilitated extraordinary advancement in interpersonal communications. Intrapersonally, however, a deeper sense of oneness with each other and with the environment is highly ambiguous. This paper will seek to provide context for Baran's perennial network illustration in relation to Teilhard's utopian vision. In doing so, it will position art and digital practice—which often visualize hidden aspects of the physical world and its social relationships—as a way to reconnect with the metaphysical potential of networks.

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Digitisation in art practice

The Ritournelles of Digitisation in Art

Aysegul Yildirim

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The aim of this paper is to investigate and comment on the main characteristics of the conditions which enables us to speak of the 'conspiracy' (Baudrillard) or the 'accident' (Lotringer) of contemporary art. I shall try to explore some 'ritournelles' (refrains), in the Deleuzian sense, of the digitisation (which I employ here as a characteristic to our society) to understand these conditions by drawing on the works of Lazzarato, Berardi, Lotringer, Baudrillard and Virilio. Firstly, going hand in hand with today's financialisation, digitisation facilitates spreading of the logic of capital, in an ever-increasing speed, to everywhere, turning everything into mere symbols which operate within a closed system in which the rules of the game are determined by, again, capital. We do not refer to the traditional relationship between the signifier and the signified anymore since the mainstream flows of capital cancels the mediation process. This issue is closely linked to the form crisis in contemporary art. Secondly, the demise of affectus: Art, according to Deleuze and Guattari, used to be the realm of affects which are created through sensations. However, the logic of capital transforms sensations into calculated series of perceptions. The technology deterritorialises traditional sensation and recodes it within the realm of numbers, statistics, codes and symbols. Thirdly, in conclusion, I will point out and discuss some possibilities of lines of flight in contemporary art with reference to the previous debates I have outlined.

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Exploring social issues and cultural knowledge through machinima

Tess Baxter

Lancaster University

Video games are an important part of popular culture, but videos produced out of them – machinima – are an underdeveloped form. While the subject matter and cultural references of most machinima are the game in which they are made, some machinima-makers use them to explore artistic, cultural and political real world issues as well. My recent machinima *Falling Between Worlds* is an example of this wider use. It considers issues of gender and race within *Second Life*, the virtual world in which it was made, that link to the wider phenomena of gamergate, the alt-right, Brexit and the election of Trump. The Trump administration's hostility to marginalised groups ties back into the machinima's content – the history of racial segregation in the US, from the flooding of New Orleans to lynchings and blues music. The work also connects with another form of popular culture, cinema, and the themes of gender, race and sexuality in the films of Todd Haynes.

While the ideas appear wide ranging, this method establishes a way of clustering connected knowledge around social issues: it provides a focus that happens to be academically interdisciplinary. It allows the artist-researcher to respond and comment quickly to events, and as the machinima is published on the internet, it is available for comment by a networked public, rather than just an academic audience. Through this approach, machinima becomes a creative mode, a means of communication, and a tool for thinking and writing, and a political statement.

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Digital Vivisection: The Technologic Consumption of Human Anima

Jeffrey L. Gangwisch

UMBC (University of Maryland, Baltimore County)

The perverse act of abstracting organics into a digital, binary infinity transgresses any natural understanding of reality. There is a distinctly visceral terror in this kind of digital vivisection, an exploration familiar to surrealism, now made hyperreal by contemporary technologies. Artist Jeffrey L. Gangwisch from Baltimore, MD, USA will be sharing new work that reduces the anima of both artist and figurative subject into the abstract expression of digital artefacting, contrasting the organic with the artificial, the biological structure with its imaging data. These works explore an ultra-modern consumption of the human by the digital, where the figures and the viewers both are engulfed by a black-box reality at once material and immaterial, a universe created in a binary language through which we must all now communicate, however impossible that demand may be.

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Scientific methods and creative processes for wearable technologies: from invention to innovation

Livia Tenuta & Susanna Testa

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The aim is demonstrating how in the contemporary scene the boundaries between scientific method and creative process are increasingly blurred, finding innovation as the point of intersection of this discursive separation. The analysis identifies in the emergent field of fashion wearables the object of investigation. The introduction of digital tools in fact had a significant impact on the fashion system, and wearable technologies represent the result of a new systemic interaction among diverse approaches belonging to different sectors. In this context, our purpose is to identify the moment when invention, seen as technological progress, becomes innovation, integrating and affecting people's lives. To this end, the paper is firstly aimed in analysing through case studies the different methods to design innovative fashion products. In particular, both technology driven innovation and design driven innovation based methodologies are examined. The two strategies are compared and described in terms of phases, actors involved and validation of the obtained results, underlining the crucial stages of the process: the definition of the target and the scenario and the phase of product testing. This involves both traditional methods of data analysis for the technological functioning, based on numerically quantifiable parameters, and the experimental verification based on the object-final user relationship. This test aims in "measuring" the effectiveness of the products in terms of comfort, usability, aesthetics and interaction. It is this methodological transdisciplinary practice that carries appreciable results concerning innovation. This approach leads to an emphasis of the designer's cross role and it represents an opportunity for the academic research and for the market.

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Digital arts and urbanism

The Art of Transformation: Using Virtual Space for Cultural Organizing

Lee Boot & Leah Michaels

University of Maryland Baltimore County (UMBC), Imaging Research Center (IRC)

The Art of Transformation is a collaborative research project of university scholars in the arts, humanities, technology, and community partners in Baltimore, Maryland, USA. The project uses an experimental practice and digital tools for inclusive, democratic collaboration and cultural organizing. Through neighbourhood workshops communities collaborate to represent, amplify and map their local cultures in a virtual 3D cyber-commons, enabled by software being developed by the university. Project collaborators believe this will increase community identity, cohesion, and ultimately, resilience. As the virtual city becomes populated with architectures of cultural assets, community residents and scholars can identify and explicitly visualize connections between and among neighbourhoods. Community and university scholars, everyday residents, policymakers, and others can then go on to integrate their diverse knowledges, deliberate, and build long-awaited consensus about current challenges the city faces, and provide a persistent space for the co-creation of shared vision and strategies for realizing that vision.

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Hyperlocal Imaginaries

Dr. Claire McAndrew & Prof. Paul Sermon

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From Peter Cook's Plug-In City — of the radical 1960s Archigram group, to Ridley Scott's Blade Runner, fictional narratives can contest urban realities and envision alternative futures. The Visual History of the Future (2014) commissioned under the UK Government's Foresight Future of Cities Project, is a reminder of the relevance and power of the imagined entering mainstream architectural consciousness. The edited volume 4D HYPERLOCAL (Bullivant 2017) even considers city-making in today's platform society — with hackable cities used to create alternative urban imaginaries, de Waal et al suggest: 'The success of cities partially lies in the fact that they are open platforms' offering a 'redistribution of power in practices of city making' (p.52). 3x4 contributes to such social imaginary by providing a platform to see informal settlements differently, disrupting common perceptions through artistic performance: 3x4m.org. 3x4 metres are the dimensions of some resettlement colonies in New Delhi. Cities such as London, are also seeing reductions in living space, with 'affordability' translated into 'smaller'. Connecting public audiences at Khoj Studio (Delhi) and the Southbank Centre (London) via an immersive, telematic installation, opened opportunities to participate in the city and practice new ways of seeing. Citizens were invited to upload and co-create images of 3x4 metre living spaces. Crossing reality with fiction, these became the background scenes in which audiences were co-located. Artistic performance can bring built and imagined spaces closer together. It is from this search for alternative imaginaries at the fold of physical place and digital space that future cities will arise.

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Digital art in public spaces: New urban landscapes

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The article describes new communicative intent of artistic interventions on the facades of buildings and on public places. Digital era introduces many technical and technological instruments. The introduction of sensors, the ability to connect the facades to laptops, camera phones, digital cameras are all instruments able to connect individuals around the world and also to promote involvement and action from the user-citizen, who become co-author in the creative process and in the final architectural composition of building facades. The facade becomes touchless, “a place of events”, the building facade is an interactive platform that requires collective participation. Contemporary public spaces, constructed from physical and virtual elements, become laboratories of public art, places for artistic experimentation (Umberto Eco, *Opera aperta*).

“Contemporary city at the beginning appears as the scenic backdrop of the world's people *makes history*” (Guy Debord, 1959). The projects analysed in this article describe new trends in the world of architecture, design and contemporary art. They define new urban landscapes. Digital performance transforms the image of the city and define a new role of citizens.

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Exploring the Intersection of Spatial Practices and Technology with Critical and Creative Methods: Some Experiences and Suggestions

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This paper explores the intersections between artistic experimentation and scientific inquiry through two case studies which address the ways technology mediates and performs space. The studies use participatory workshops framed in an art context. One explores the spaces constructed by FM radio, the other explores the hidden influence of infrastructure on everyday uses of GPS. The work is interdisciplinary, sitting between Human Computer Interaction and Science and Technology Studies, and inspired by critical design approaches.

My work suggests artistic approaches as research tools to allow people to see familiar processes in a new light. In this it shares motivations with critical and reflective design approaches (Dunne 2008; Sengers et al 2005). However, rather than focus on a finished object, I concentrate on the process of developing such an object (Ratto 2011) thereby emphasising the complexity and connectedness in the ways space emerges with technology. The research method and staging is implicated in this complexity, guided by a desire to “enrich rather than reduce” the object of study (Asdal and Moser 2012). The first study considered uses site-specific creative writing in a radio installation built from multiple short range transmitters to consider how FM radio can effect and perform space. The second used a GPS diagnostic app and walking workshop to draw attention to GPS infrastructure, thereby asking participants to reconsider their existing sociotechnical practices. The paper will consider some of the lessons learned from these workshops and offer some transferrable considerations, especially for research practices which a participatory aspect.

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Exploring & Sharing People's Emotional Bond with Places in the City

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With the vision of ubiquitous computing becoming increasingly realized through smart city solutions, the rise of the quantified-self movement and the proliferation of smartphones and smart watches, a new technological layer is being added to the urban environment. This technological layer offers the possibility to track, measure, visualize and augment our experience of the urban environment. But to that end, there is a growing need to better understand the triangular relationship between person, place, and technology.

Artist Christian Nold famously used wearable technology to measure people's arousal levels as they walked freely through the urban environment, identifying locations in the city that evoked an emotional response from people. After the walks, these arousal levels were superimposed on a map of the city and participants were asked to interpret their own data, resulting beautifully visualized and fully annotated emotion maps of the city.

This position paper outlines a thesis that seeks to understand how people's experiences of places in the urban environment that are meaningful to them on a personal level, for example the place where they have met their partner, could potentially inform the design of future technological devices and services. This urban Human-Computer Interaction study aims to elicit the personal stories and emotions connected to those personally significant places. It investigates the different forms this data could take, and the potential for capturing, sharing and exploring this personal data with other people using technology and emotion maps.

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Computation and Creative Processes

Digital interactions: Sound and three - dimensional forms

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This paper discusses a prototype that will explore the simultaneous manipulation of three-dimensional digital forms and sound. The proposed multi-media artwork examines the aesthetic affordances of tight parameter couplings between digital three-dimensional objects and sound objects based on notions of process, sonification and user-machine interaction. It examines how effective cohesion between visual, spatial and sonic might be established through changes perceived in parallel; what Michel Chion refers to as 'synchresis'. Inspired by Mike Blow's *On the Simultaneous Perception of Sound and Three-Dimensional Objects* and processual art, this prototype will use computer technology for forming and mediating a creative practice involving 3D animation, sound synthesis, digital signal processing and programming. Our practice-based approach will entail the rendering of a three-dimensional digital object in Processing whose form will change over time according to specific actions. Spatial data will be sent via Open Sound Protocol (OSC) to Max MSP in real time, where sound will be synthesized and then manipulated. Sonic parameters such as amplitude, spectral density/width and timbre will be controlled by select spatial parameters from the three-dimensional object. Sound processing will be realized based on the changing of the three-dimensional object in time through basic actions such as splitting, distorting, cutting, shattering and rotating. We aim to use digital technology to look beyond basic synchronisation of sound and vision to a more complex cohesion of percepts, based on changes to myriad sonic and visual parameters experienced concurrently.

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The Laptop Tour: Redefining Classical Music Performance Spaces

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The greatest challenge facing performers today is that of reaching an audience - particularly given expectations of availability and access as digital natives come of age. The Laptop Tour consists of thirty-minute solo performances from non-traditional concert spaces creating a flexible approach to touring that challenges the conventions of the classical music concert. Eschewing the older model of a complex technical set-up for a live broadcast, the Laptop Tour takes a more guerrilla approach - armed only with a laptop, cameras/microphones, an internet connection, and various social media platforms. This approach makes it possible to build a diverse following, creating an approach that can bring this art form to not only the urban world, but physical and virtual venues in the rural context - traditionally an arena under-served in terms of live performance.!! Each performance is a carefully curated set-list reflecting the connections between pieces, composers, and the venue, creating a sense of context for the audience. The project has a large potential for real world and digital community address whilst bridging genres. A single performance can be experienced in up to four ways: physically in the space, live streaming and archive access. As curators of the concerts we are able to introduce new works/arrangements for the instrument, foster new partnerships with arts organisations as well as small businesses that host performances, and develop new collaborative possibilities with both musical and visual artists for audiences to experience anywhere in the world by creatively utilising the internet.

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A joynt magnetism of three heavens: compositional & computational approaches to sonifying alchemical data

Dr. Dafydd Roberts

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Roberts's work in progress charts compositional and computational approaches to "complex mapping paradigms of [alchemical] data to musical parameters" (Hagan). Broaching sonification and aesthetics Barass and Vickers cite Manuel Lima's assertion that "Form follows Revelation".

For the 17th century alchemist or natural philosopher, the alchemical text is a testament of personal revelation about the celestial, spagyric and complex natural interconnectivity of the world. Alchemy deploys a bewildering gamut of rhetorical devices, blurring verbal interplay, asynchronous narratives, obscure imagery, classical motifs whilst apparently extolling universal truths. Borrowing a phrase from Leigh Landy's *Understanding the Art of Sound Organization*, the alchemical text seems to offer the reader "something to get hold of" whilst simultaneously confounding it/them. Its highly-abstracted narrative is a "Labyrinth and Wild of Magic [where] a world of students have lost themselves, a thing so confusedly handled by such as knew it that it is altogether impossible to find it in their records" (Thomas Vaughan, *Anima Magica Abscondita*)

Simon Emmerson in *Living Electronic Music* writes that "all sonification events that cannot in their original form be heard, or which are heard in a substantially different form are metaphorical transcriptions" (Emmerson, p.59). The alchemical monochord affords a harmonic doctrine of cosmic sympathies whilst the lexical nature of many texts renders them mute. How far can sonification, metaphoric transcription and parameter mapping of alchemical data yield meaning and musically satisfying creation and where does human

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Sorted 2.0

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Although produced using digital methods my work is not digital art as such, it is art about digital.

I am interested in how the work of art changes in our age of digital reproduction where originality and materiality have become out-dated concepts. How does the aura, as Benjamin describes, persist in a world where images are reproduced without limit; where even being presented on screen they are remade constantly before our very eyes?

Heidegger makes a distinction between things that are present-at-hand and ready-to-hand. Digital reality, being constructed from the logic of the present-at-hand, presents a challenge as we move into it from our ready-to-hand world of experience.

As we upload more and more of our culture, our knowledge and even ourselves into the digital systems what changes and what stays the same? Can something as complex and subjective as art be translated into a system based on logic and numbers without becoming enframed and consumed by that very system.

I have taken as my starting point the numerical nature of digital media using the hexadecimal colour information extracted from images as my raw material. By translating an artwork from its material form into this numerical form what possibilities does this present us with? By treating this information as pure numerical data and detaching it from its cultural source I explore the nature of aura, logic and digital technology.

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Performers

Pixi Dust

Yati Durant & Jules Rawlinson

PixiVisor & Analogue Modular Synthesis

Pixi Dust is a structured improvisation that explores opportunities for integrated audiovisual performance through hybrid analogue/digital video synthesis. Images are encoded to an audio stream using the cross platform PixiVisor software and subsequently processed in the analogue domain before summing to a final analogue-digital audio-video conversion.

/siv/

Marcin Pietruszewski

algorithmic script for spectro-temporal signal scattering

The /siv/ is an experimental duet for a synthetic voice and sound; an algorithmic script for spectro-temporal signal scattering. The main sonic material of the piece consists of a novel adaptation of sieve algorithm - as first introduced by Iannis Xenakis - seamlessly integrated with microsound synthesis (pulsar synthesis and wavesets) and distortion product otoacoustic emission (DPOAE). Its conceptual point of departure is an original text of libretto written by Chris Shambaugh.

Through sifting between text, machine generated sound and speech, algorithmic procedures and psychoacoustic phenomena the work of 'siv' intensifies the indissoluble and recursive relation between sound object, the space activated by the object, and the subject who perceives and therefore reconstructs the object through their experience located in space and time.

Jess Aslan

Synth

drum machine and laptop based electro-instrumental experimentation by Dr. Aslan

Two Thirds of a Good Thing

Dave Murray-Rust & Jules Rawlinson

Laptops & Controllers

Dave and Jules are two members of Raw Green Rust, an improvising laptop trio. Raw Green Rust formed in early 2008 and previously went by the ever-so-slightly nerdy name Tr-i/o-fon. Raw Green Rust network audio and control data between performers to allow for complex chains of generation and processing that are an articulation and exploration of interface, shared gesture and distributed creativity. Sadly, our third member, Owen Green, can't be here (hence the title), but we're sure we can compensate...

This book was designed for sIREN: Arts and Digital Practices Conference in May 2017
by Eleni-Ira Panourgia and Roxana Karam