ENHANCING ARTISTIC EXPERIENCE IN HYBRID ENVIRONMENTS

BOOK OF ABSTRACTS

CAPHE

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Enhancing Artistic Experience in Hybrid Environments

Book of Abstracts

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Conservatorio Giacomo Puccini La Spezia, Italy
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Communities and Artistic Participation in Hybrid Environment (CAPHE)
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Enhancing Artistic Experience in Hybrid Environments

CAPHE International Conference La Spezia 15 - 17 May 2024

Program

Day 1 / May 15, 2024

9:00 **Greeting of the Authorities** //// Federica Eminente (President CP), Giuseppe Bruno (Director CP)

9:30 **Opening International Conference** //// Alessandra Montali (Coordinator International Conference CP), Federico Bardazzi (Coordinator CAPHE CP)

Session 1 / Artistic Expression in Virtual and Augmented Reality

9:40 **Fontes Pedro, Mendes Mónica ////** Mapping-en-Scène: Exploring Mise-en-Scène Principles to Enhance Spatial Augmented Reality

10:00 **Gatti Alberto Maria** //// Re-Sounding Bodies. A Multimodal Approach to Sound Composition

10:20 **Łukaszewicz Aleksandra** //// Human Technology Organization in VR Participatory Costume Design. An Artist as a Cognitive Center of a Creative Assemblage

10:40 **Coffee break**

11,00 **Mendes Luís, Mendes Mónica** //// Bridging Essay Films and Virtual Reality: "Queer Utopia: Act I Cruising"

11:20 **Montali Alessandra** //// Innovative Approaches in Opera: Integrating XR and AI for Enhanced Immersive Performances

11:40 **Revez José Manuel** //// Sculpture and Hybrid Spaces

12:00 **Serra Ilaria** //// Virtual Walks in the Poetry of Mary Oliver Through Google Earth: The First Virtual Literary Park in the United States

Session 2 / Community Involvement and Participation in Hybrid Artistic Environments

12:20 **Parncutt Richard** //// The Multi-hub Music Festival as a Strategy for Sustainability, Inclusion, and Human Survival

12:40 **Mendes Mónica, Elias Helena, Lucas Marta, Ângelo Pedro** //// Iterating Nomadic Fragment Operative Concepts within Material Hybridisms in Artistic Research Training toward Public Dissemination

13:00 **Baldini Andrea L.** //// 六/6: Finding Meaning: Expanded Exhibition and Digital Art-World

13:20 **Lunch**

Session 3 / Innovations in Online Artistic Experiences

14:20 **Abati Oluwaseun Isaac, Barnabas Nehemiah** //// The Role of Augmented Reality in Enhancing Art Exhibitions and Environmental Sustainability

14:40 **Giareni Eleftheria** //// Cognitive Science in Virtual Artistic Landscapes

15:00 **Augusto Michele, Milleco Ribeiro Mariana** //// Digital Research and Costume Design: The Digital and Interactive Process of Media Visuality

Posters / Creation of an inclusive, hybrid, transformable space of social-artistic experience via electronic media, including the Spatial platform

15:30 **Gitimu Susan** //// Audience Participation and Live Events: Designing a Post Event Virtual Experience for the 5th Women in Film Awards

15:45 **Petri Jakub** //// Deep Mapping for Environmental Immersive Apps: Opportunities and Threats. Case study: The Alyko Street Art Gallery on Naxos

16:00 **Jaime del Val** //// From Metabody to Bodynet

Performances / Creation of an inclusive, hybrid, transformable space of social-artistic experience via electronic media, including the Spatial platform

16:15 **Bareggi Andrea, Sargenti Simonetta, Amour Lamine, Colombier Elodie** //// Hybrid Spaces for Multidisciplinary Performance: the Case Study of Tierkreis by K. Stockhausen

17:00 **Nicoli Andrea, Casti Fabrizio, Gatti Alberto** //// Breaking Boundaries: Exploring the Roles of Performer and Audience in AR Interactive Audiovisual Performances (An Interactive Audio Visual Performance)

Day 2 / May 16, 2024

Session 4 / Advanced Technologies and Creative Intersections

9:00 **Angelakis Evangelos** //// Somatosensory Perception and Aesthetics of Lyrical Singing: Modern Education Problems and Scientific-Technological Solutions

9:20 **Forero Jorge, Bernardes Gilberto, Mendes Mónica** //// Affective Virtual Environments for Live Performance

9:40 **Hrycak-Krzyżanowska Dorota** //// Immersive Narratives: Unveiling the Potential of VR-Enhanced Digital Storytelling in Foreign Language Acquisition

10:00 **Kisato Jacqueline, Agordha Faustina, Rolle Jo-Anne** //// Creative Intersections Between Generative AI and the Fashion Design Process: Is it to the Designer's Advantage or Peril?

10:20 **Cywiński Aleksander, Witosz Aneta, Kalina Kukiełko** //// Costumes that Make the Story: Exploring the Theatrical Concept of Tadeusz Kantor

10:40 **Perzycka-Borowska Elzbieta, Parchimowicz Michał, Romańczuk Zbigniew** //// Hybrid Metamorphoses of the Moment - from Nature to Immersive Forms of Arts

11:00 **Coffee break**

Session 5 / Philosophical and aesthetic implications of artistic production realized in hybrid environments

11:20 **Gladden-Obidzińska Bogna J.** //// The Role of Sound in the Perception of Form in Hybrid Environments

11:40 **Bokeas Yiannis** //// Exploring Hybridity and Ambiguity in the Work of Three French Composers: Franck Bedrossian,Raphaël Cendo, and Yann Robin

12:00 **Sidey Myoo** //// Sensory Art

12:20 **Brusco Francesco** //// Ghost Tracks. Posthumous Performances and Technology, from Magnetic Tape to AI

12:40 **Szczepanik Joanna** //// Between the Old and the New. The Art of New Technologies and Social Change

13:00 **Lunch**

14:00 **Dancewicz-Pawlik Małgorzata** //// MIMETING in Relation to WORLDING. What Kind of Audiosphere Could Metaverse Need?

14:20 **Lucas Marta Galvão, Elias Helena** //// Subtracting vs. Adding: Exploring Space and Materiality with VR and AR

Posters / Creation of an inclusive, hybrid, transformable space of social-artistic experience via electronic media, including the Spatial platform

14:45 **Papadimitriou Georgios** //// Classical Singing in Foreign Languages: An Acoustic and Comparative Study about Similarities and Differences of 5 Operatic Languages

15:00 **Salani Barbara** //// AI for Social Change: Doria Manfredi's Case in the silent film Puccini e la Fanciulla' by Paolo Benvenuti (2008)

15:15 **Mbinga Mwambi Jonathan** //// Inevitable Conformity to the Posters Project

Performances / Creation of an inclusive, hybrid, transformable space of social-artistic experience via electronic media, including the Spatial platform

15:30 **Caruso Giusy, Belluco Paolo, Polistina Samuele** //// MetaPhase: a Contrapuntal Dialogue Between a Pianist and her Avatar in the Metaverse

16:00 **Pawlik Krzysztof, Dancewicz-Pawlik Małgorzata** //// Mimeting as well as Worlding

Day 3 / May 17, 2024

Workshop

9:30 **CP, Miastopracownia, NKUA, PUNO** //// Experimental Prototype of Opera in Metaverse

Joint Case Study Performance / Creation of an inclusive, hybrid, transformable space of social-artistic experience via electronic media, including the Spatial platform

10:30 **Coffee Break**

11:00 **Federico Bardazzi and CP, Miastopracownia, NKUA, PUNO** //// Giacomo Puccini: Gianni Schicchi VR

The Role of Augmented Reality in Enhancing Art Exhibitions and Environmental Sustainability

Abati Oluwaseun Isaac - Barnabas Nehemiah

The advent of Augmented Reality (AR) has ushered in a revolutionary era in the realm of artistic expression, transforming the traditional modes of experiencing photography, painting, sculpture and various other creative media, as well as the pleasurable, proximal field experience geared towards the conservation of environmental resources and the need for sustainable environmental practices. As artists and environmental educators strive to push the boundaries of their craft and field experience, AR offers a dynamic and immersive dimension to art exhibitions, for example, by redefining how audiences engage with and interpret artworks and appreciate the environment and related features at a distance. Art exhibitions held in various galleries have become an indispensable part of the contemporary art world. These events serve as platforms for artists to showcase their creations and foster connections between artists and their audiences, which environmental educators desire to reduce the logistical challenges and risk factors associated with reaching a large audience in real time. However, the existing paradigm presents a challenging reality for many artists and environmental educators, particularly those facing financial constraints. This paper explores augmented reality's role in enhancing art exhibitions and environmental sustainability. The paper seeks to understand the level of awareness of AR technology, the extent to which it is being used to promote art exhibitions and environmental sustainability, the perceptions of the target audience in adopting AR for art exhibitions and environmental education, the challenges that may hinder adoption and possible ways forward. The paper uses a cross-sectional research approach to comprehensively assess the opinions of artists and environmental educators on the aforementioned objectives of interest. A sample of 130 (60 artists and 50 environmental educators from Kenyatta University) were included in the study using a convenience sampling method. Questionnaires were used for data collection and were validated by a panel of experts with a content validity ratio (CVR=1) that met the threshold and an r coefficient α of .80, which was above the criterion of .70 recommended by Cronbach Alpha, and distributed to the selected target audience in the field (non-proximal). The data was analysed using frequencies and percentages to describe participants' opinions. In addition, statistical significance was established using Pearson's chi-square at $p \leq .05$ to determine the association between artists' and environmental educators' opinions regarding the role of AR. The findings will show the transformative power in mitigating the identified challenges by providing an accessible and inclusive platform for artists to exhibit their work and for environmental educators to provide awareness and knowledge geared towards sustainable environmental practice through the use of AR. The study will confirm the fact that the perception of the target audience transcends geographical and financial barriers to ensure that creativity flourishes in a space that is truly diverse, inclusive, and accessible to all. Therefore, the study will recommend that artists and environmental educators be supported by relevant authorities to adopt AR technology for art exhibitions and environmental education to foster sustainability.

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***Keywords**: Augmented Reality, Art Exhibition, Environmental Sustainability, Perception, Artists, Environmental Educators*

Somatosensory Perception and Aesthetics of Lyrical Singing: Modern Education Problems and Scientific-Technological Solutions

Evangelos Angelakis

Singing, a manifestation of the human voice, has evolved into an elaborate art form. Perhaps its most demanding genre is opera, where singers are often compared to athletic champions. The genre has existed for over 400 years but faces many challenges today.

It has been reported that the quality of operatic singing has seriously deteriorated over the last 50 years, especially among spinto and dramatic singers, who are the most demanding. Such a problem could be linked to the enormous socio-economic, technological and pedagogical changes that have taken place during the 20th century. Different social dynamics and sound environments, stress and modern lifestyles have had a major impact on everyday life and seem to affect the general level of vocal aptitude, often causing dysphonic conditions from early adolescence before vocal training begins.

The above changes have almost coincided with the change in the operatic pedagogical model, which has moved from a daily lesson and prohibition of individual practice to a one-hour-a-week lesson and unsupervised practice basis. This challenge for singing students is largely due to the inherent limitations of auditory feedback and self-awareness in singing. Auditory self-feedback has been shown to be subjective and unreliable. Cognitive science studies have shown that successful singers have unconsciously learned to control their voices in a somatosensory way. They gain control over the fine motor functions and precise coordination of the neuro-muscular mechanisms that underlie the voice rather than relying on their self-sound perception. However, this quality is not explicitly taught and many aspiring singers struggle for years to overcome such obstacles.

Young opera singers often need to 'rediscover' the natural capabilities of the voice and change their vocal habits before they can excel in specialised training. Only then can they achieve vocal "freedom" and health combined with the true aesthetic goal of appealing directly to the audience's emotional core. It is the "cathartic" experience shared between the performer and audience through the performer's liberating vocal expression and the audience's empathetic response.

Vocal pedagogy has turned to new scientific knowledge, new software and hardware tools to help students and teachers meet the challenges of the age. New pedagogical models, such as "Evidence-Based Vocal Pedagogy", have emerged and show promise in providing solutions through more individualised, scientifically informed, experiential and systematically evaluated educational practices.

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六/6: Finding Meaning: Expanded Exhibition and Digital Art-World

Andrea L. Baldini

How can artistic exhibitions take advantage of digital opportunities? 六/6: Finding Meaning is an attempt to answer this question in practice. Developed and realised in collaboration with Pietro Rivasi, students from two of my classes at Nanjing University, and an international group of artists, it is arguably the first example of what I will call the extended exhibition, that is, an exhibition that inhabits an extended public space, between the physical and the digital.

六/6 shows us that, even in a post-pandemic world, exhibitions, once spatially liberated, can be effective tools for meaning-making and social change. Indeed, by exploiting the interplay between the digital and the physical, extended exhibitions like 六/6 can build alternatives of cultural production that not only address the need for social distancing but are also participatory and democratic in terms of access and can be politically transformative in displacing the centre/periphery hierarchy. These exhibitions can provide an extended forum for reflection, which in the case of 六/6, should facilitate the processing of our pandemic trauma while potentially challenging exclusionary trends in cultural production and consumption.

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Hybrid Spaces for Multidisciplinary Performance: the Case Study of Tierkreis by K.Stockhausen

Andrea Bareggi - Simonetta Sargenti - Lamine Amour - Elodie Colombier

Hybrid performative spaces offer a heightened level of immersion for audiences. The integration of VR, AI and electro-acoustic mixed music allows artists to explore new dimensions of creativity and expression. These technologies offer new ways of creating and presenting art, pushing the boundaries of traditional artistic media. Virtual reality, in particular, offers a more immersive and interactive experience, allowing participants to engage with the performance in a way that traditional forms cannot. The hybrid performance presented at this conference is the first attempt to combine VR with a 3D environment, live music and sound design in a single online performance space. In the context of the musical performance of an excerpt from Tierkreis, the set of twelve short melodies on the theme of the zodiac by K. Stockhausen, the audience will visit 3D scenarios related to the musical content created on the Spatial.io platform. It will be possible to explore the scenario using a smartphone, computer or headset or simply to watch the projected images live or online, while the musical performance takes place live. From an acoustic point of view, the project explores the possibilities and limitations of web conferencing platforms for live performance and the use of live sound shaping effects on digital audio workstations.

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***Keywords**: DAW, live acoustics, NMP, 3D virtual environment, digital spaces*

Full BIOS

Exploring Hybridity and Ambiguity in the Work of Three French Composers: Franck Bedrossian, Raphaël Cendo, and Yann Robin

Yiannis Bokeas

In the early 2000s, French composers Franck Bedrossian, Raphaël Cendo and Yann Robin, born between 1971 and 1975, introduced an aesthetic known as "saturationism" or "saturation" to the European music scene. They emphasise that they do not form a formal group, nor is their music explicitly categorised under the label "saturation". Rather, these terms represent one of the many facets of their collective work. As Raphaël Cendo points out in "An Excess of Gesture and Material: Saturation as a compositional model", the composers are inspired by Grisey and Xenakis.

They push the limits in the use of timbre, pushing it towards extreme saturation to mimic the effects of electronic saturation with acoustic instruments or voices, moving away from the conventional "beautiful sound" associated with previous musical styles.

This approach manifests itself in the creation of textural forms of remarkable plasticity, enriched by advanced execution techniques, elements of improvisation and techniques, elements of improvisation, noise textures and live electronics. Detailed notation and layered consonances prevent the listener from focusing on individual elements, encouraging a simultaneous perception that defies singular attention. This unleashing of organic energy across all musical parameters and the emphasis on physicality/embodiment in composition transforms performances into acoustic events in which the performer becomes a central figure.

The hybridity in their work acknowledges the intricate, blended nature of identities, moving away from simplistic purity to emphasise a dynamic hybridisation process. Influenced by technological advances, this aesthetic suggests a deepening fusion of identities. The composers' exploration of hybridity and ambiguity, achieved through electronic elements and the detailed spatial arrangement of loudspeakers, introduces ambiguity into the perception of sound. This ambiguity about the identity of the sound source blurs perceptual boundaries and invites the listener to engage deeply with the nuances of sound identity and origin in real time, challenging conventional listening experiences.

The synthesis of multiple parameters in their compositional process - such as detailed timbral manipulation, the pursuit of saturated sound through extended techniques, the central role of physicality in performance, the integration of technology that often leads composers to collaborate with technologists to achieve the desired result and push creative boundaries, and the meticulous crafting of instrumental compositions - marks this aesthetic as a rich field of inquiry. It shows the potential direction of musical creation in the 21st century, illustrating a complex interplay between technology, perception and artistic expression that challenges traditional boundaries and encourages deeper engagement with the evolving sonic landscape, enhancing artistic experiences in a hybrid environment.

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Ghost Tracks. Posthumous Performances and Technology, from Magnetic Tape to AI

Francesco Brusco

The Beatles' recent release of Now And Then, which uses AI software to isolate John Lennon's voice from a home demo, has raised questions about posthumous performances and their technological production.

The band had been involved in similar operations long before AI (Free As A Bird/Real Love, 1995-1996), joining a trend whose commercial fortunes began with Natalie and Nat King Cole's virtual duet (Unforgettable, 1991). The primacy belongs to none other than Enrico Caruso, whose voice was extracted from an old record in 1932 to be accompanied by a real orchestra in the recording studios of His Master's Voice (aptly symbolised by the dog listening to the voice of its dead owner on a gramophone).

Paul McCartney explained that their final track was mixed "as you would normally do", implying that producing a recording of a deceased artist is no more problematic than mixing tracks by living performers. In both cases, we deal with spatio-temporal discontinuity and asymmetrical distributions of power and skill. Moreover, each recording is subject to treatments (i.e. editing and mixing) that can be interpreted in terms of revertibility and recombinatoriality, two concepts that refer to sedimented pasts and possible futures of any contingent assemblage (Stanyek-Piekut 2010).

But the intermundane nature of these sound artefacts - a relic that triggers ideas of immortality (Partridge 2015) - does not entail purely technological issues. In order to be perceived as legitimate manipulations, they must be composed into 'communicative objects that do not contradict pre-existing ideas about the dead performer' (Bratus 2019), complementing the relics with 'a meaningful sonic environment and a set of relationships with other performers based on style and genre conventions' (ibid.). Ultimately, we consider these productions legitimate when we can place them in broader communicative contexts and recognise the performer's personality (as opposed to what happens with AI voice cloning).

This authentication process brings the deceased artist's agency back into play, persuading us to rethink the idea of personality by acknowledging its ability to transcend physical boundaries and articulate itself into textual, technological, emotional and economic entities. In our post-human, rhizophonic society, music has severed the link between bodies and sounds, displacing them into new configurations in constant feedback between liveness and deadness: new technologies are likely to reinforce the reversible and combinatorial nature of sound recording, whose status is no longer to simulate reality but to transcend it.

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MetaPhase: a Ccontrapuntal Dialogue Between a Pianist and her Avatar in the Metaverse

Giusy Caruso - Paolo Belluco - Samuele Polistina

The MetaPhase project is the artistic result of an intersectoral meeting between avant-garde pianist Dr Giusy Caruso, a post-doctoral researcher at the Royal Conservatory of Antwerp (BE), and the innovative start-up company LWT3, based in Milan (IT). The aim of this joint research was to explore the creative potential of data processing and biotechnological applications in extended live performances, in order to enhance the expressiveness of the performer and the audience.

The pianist performs wearing a suit with light-reflecting markers that allow infrared cameras to track her gestures in real time in synergy with EMG data. The pianist then wears the Oculus Rift to enter the meta-performance scene developed by LWT3 using the Unity platform and plays the counterpoint part of Steve Reich's PianoPhase, interacting with another avatar pianist who plays the first part of the piece. This second virtual human is animated by the expressive movements of the real pianist, which were previously recorded along with the audio track on a Yamaha Disklavier. LWT3's wearable interfaces capture bio-signals such as surface electromyographic (sEMG) signals from the real pianist's muscles to modify the visuals, video effects and audio parameters.

Spectators can experience the virtual performance as performed by the pianist in real time or in post-production by selecting viewpoints/viewing data and co-creating different immersive meta-scenarios.

This lecture presents this first experiment with motion tracking and VR technology on stage, showing the virtual METAPHASE process - the biological cell division, here referring to the pianist's duplication playing with her virtual agent in a meta-ecosystem. The core is an innovative use of a wearable, easy-to-use prototype developed by LWT3, capable of collecting bio-signals (EMG). The collection of biometric metadata will be shared via the LTW3 data platform accessible to performers/scholars/citizens. This artistic-scientific expression and dissemination trace the basis of a futuristic techno-aesthetic, involving both performers and audience in a pioneering phygital (physical+digital) hybrid musical performance. This project received the EU S+T+ARTS PRIZE Honorary Mention 2023 for its remarkable artistic approach and accomplished innovative exploration.

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***Keywords**: Augmented/Virtual Reality, Biosignal Processing/Elaboration, Immersive Technology and Interactive Media, Data Platform, Kinematics Analysis/Biomechanics, Digital Humanism and Co-creation, Wearable device for artists*

Full BIOS

Costumes that Make the Story: Exploring the Theatrical Concept of Tadeusz Kantor

Aleksander Cywiński - Kalina Kukiełko - Aneta Witosz

The presentation aims to elucidate the seminal contributions of Tadeusz Kantor, a luminary in Polish theatre whose avant-garde approach pioneered the concept of hybridity in theatrical performances. This proposal will examine Kantor's innovative use of costumes and props, not merely as accessories to human actors but as central elements that narrate the essence of the performance itself.

Kantor's artistic philosophy was based on the idea that inanimate objects could possess a narrative power equal to, or even surpassing, that of living performers. This notion challenges conventional theatrical norms, where human presence dominates storytelling. Kantor's theatre was a realm where the boundaries between animate and inanimate blurred, creating a hybrid space that defied traditional categorisations. He regarded costumes and props as living entities, each with its own story and intrinsic value, capable of interacting with human actors to create a multi-layered narrative. This conceptual leap towards hybridity in the theatre was not merely an artistic choice but a profound commentary on the human condition and the material world. Kantor's focus on the durability of materials over the transient nature of organic life speaks volumes about his philosophical inquiries into existence, memory, and the passage of time. His works suggest a kind of material immortality, where objects outlive their human counterparts and become the custodians of history and memory.

The authors aim to symbolically journey back to Florence with the artist in their presentation. In 1980, upon invitation from municipal authorities, Kantor staged the performance "Wielopole, Wielopole" inside a deconsecrated church. The intention is to consider how his work would manifest in the context of virtual reality (VR), including the design of costumes and props for hybrid performances and the potential roles of human figures within them.

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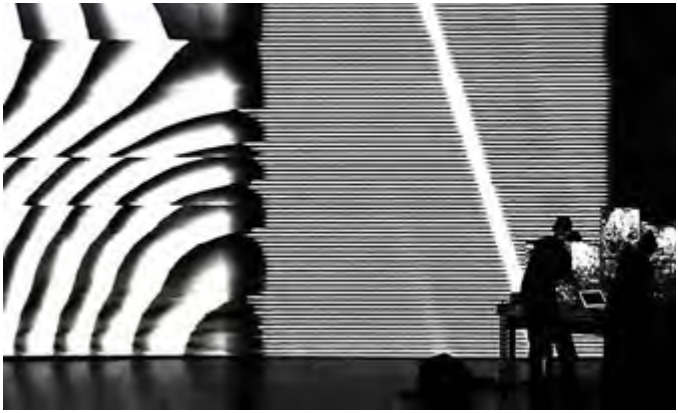
Mimeting as Well as Worlding

Małgorzata Dancewicz-Pawlik - Inire - Krzysztof Pawlik

Mimeting and Worlding is a live improvisation performance using field recordings and electronically generated harmonic structures.

The components are assembled in such a way as to create non-hierarchical and undefined textures, with an equal harmonic ingredient to explore whether we can separate the natural from the technological in the listening process.

The performance will address issues of the materiality and agency of sound and whether the creation of sound as worlding and the use of analogue and digital modular synthesisers as agents can be considered non-anthropological worlding in audiovisual performance. Tim Morton's theory of dark ecology is the main theoretical inspiration for the work, which will be used to explore the ecology of sound, both as a natural field recording and as electronically generated. The performance will be an extension of the paper MIMETING about WORLDING.



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***Keywords**: audiovisual performance, voltage-controlled audio and video*

Ministry of Culture and National Heritage Republic of Poland

CULTUREPL ADAM MICKIEWICZ INSTITUTE

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MIMETING about WORLDING. What Kind of Audiosphere Could the Metaverse Need?

Małgorzata Dancewicz-Pawlik

The VR/AR world is profoundly anthropocentric. It fits into the myth of human creation, the concept of a demiurge, an artist who creates new worlds. Worlds that can be seen and heard. While the visible is obvious, the audible is always more hidden and less immediately recognisable than the visual. When thinking about creating virtual worlds, this creative myth raises the question of whether VR/AR is an ontologically anthropocentric space. From this perspective, sound research takes on an interesting aspect.

Here sound can be seen both as a non-mimetic tool for constructing new realities and as a mimetic tool for mapping the environment. As long as binary oppositions are avoided, perhaps it can be seen as both. Tim Morton's theory of dark ecology will serve as the basis for this paper and discussion of the ecology of sound in the metaverse.

Following Morton's concepts, I will try to ask questions about the audio sphere of the metaverse, such as
1. Ecomimetic strategies for creating sound, why the metaverse needs field recording
2. Voice sound as biodata
3. Object-oriented sound ontology (analogue and digital modular synthesisers as musical agents)
4. The materiality and agency of sound, the creation of sound as worlding, or the use of analogue and digital modular synthesisers as actants can be considered as non-anthropological worlding
5. And finally, can the metaverse be considered a Mortonian hyperobject?

Based on these questions, I will ask why we need sound in the metaverse and whether the metaverse space can become a non-anthropocentric space thanks to experimental sound activities. The paper will try to use the idea of dark ecology to explain what kind of audiosphere the metaverse might need.

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From Metabody to Bodynet-Khorós: 10 Years of Hybrid Environments for Reembodying Technologies and Regenerating the Planet

Jaime del Val

The Metabody EU project, which commenced in 2013 and involved a consortium of 12 partners from six countries, aimed to create dynamic, multisensory, interactive physical and digital architectures that challenge the tendency to control based on immobile and aligned bodies. Reverso and Jaime del Val coordinated the project. The project is being continued in the smaller EU project Boadynet-Khorós, also coordinated by Reverso. This project expands the previous challenges further by focusing on the development of choral practices that claim the role of embodied improvisations as a means for a deep transformation of life in response to the radical challenges of the ecological crisis. This is done along interrelated strands. Bodynet, an online choral technique, and Khorós (in reference to the ancient Dionysian chorus) focus on physical, on-site choral practices.

del Val Jaime / Jaym* is a metahuman non-binary artist-philosopher-activist, ontohacker-metaformer and promoter of Metabody and Reverso. Since 2001 Jaime del Val/Jaym* develops transdisciplinary projects in the convergence of all the arts, old and new technologies, philosophy and activism, which have been presented in more than 30 countries on 4 continents, in prestigious institutions (universities, festivals, museums), as well as in streets, villages, refugee camps, squats, deserts or jungles. Jaime del Val/Jaym* promotes the art of metaformance and the technes of ontohacking. A referent in postqueer metahumanism, Jaime del Val/Jaym* has published about 120 essays. As a queer and environmental activist Jaime del Val/Jaym* has led international initiatives. As a musician Jaime del Val/Jaym* has recorded 13 albums, and exhibits work as a visual artist.
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Mapping-en-Scène: Exploring Mise-en-Scène Principles to Enhance Spatial Augmented Reality

Pedro Fontes - Mónica Mendes

This extended abstract outlines an artistic research proposal aimed at exploring the convergence of Mise-en-Scène and Projection Mapping within the field of Spatial Augmented Reality - SAR (Raskar et al., 1998; Bimber & Raskar, 2005; Schmitt et al., 2020). In this framework, we propose 'Mapping-en-Scène' as a conceptual space representing the synergy between traditional opera and artistry and contemporary explorations in hybrid physical and digital settings.

Originating in 1820 (Pavis, 2013), Mise-en-Scène refers to the arrangement of visual elements within a scene, including set design, lighting, costumes and more. As evidenced by the development of staging mechanisms such as rotating stages, the mutability of theatrical settings imposes demands on scenographers and challenges the continuity of the action.

A key figure in modern theatre, Adolphe Appia advocated the artistic integration of lighting, considering it not only functional but also an interactive element with the stage space and the performers (Goméz, 2010; Girão, 2012). His minimalist, geometric approach influenced the dynamics between light, space and performance.

Based on practice-based research methodologies (Candy & Edmonds, 2018), we analyse selected experimental projects such as "Conserva" and "Mamoon" to substantiate the proposed concept. "Conserva" was a street performance that integrated theatre, contemporary dance, live music and video mapping. The physical urban space functioned as a canvas to project elements that enhanced and complemented the narrative, demonstrating the potential of 'mapping-en-scène' in a Mixed Reality context. "Mamoon" is an experimental animation film in which projection mapping transforms real-world surfaces into dynamic screens. The film's spatial and lighting relationships draw parallels to Adolphe Appia's theatrical concepts.

Building on Appia's principles (Girão, 2012; Appia, 1932; Bablet, 1982), we propose to create a theatrical space for animated narratives using projection mapping. Non-linear narratives will be projected onto modular structures that incorporate the practice of VJing and allow for real-time interaction with the audience. This modular and real-time approach promotes narrative flexibility and allows for the dynamic projection of pre-rendered animation blocks in response to different action areas.

The fusion of projection mapping and theatrical staging is intended to contribute to the ongoing discourse on interdisciplinary approaches to Spatial Augmented Reality. Both the selected case studies and the proposed non-linear narrative highlight the potential of "Mapping-en-Scène" to redefine traditional staging and enable further reflection on the potential of SAR in creating immersive narratives for public performance.

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***Keywords**: Spatial Augmented Reality, Hybrid environments, Mise-en-Scène, Projection mapping Theatrical artistry*

Affective Virtual Environments for Live Performance

Jorge Forero - Gilberto Bernardes - Mónica Mendes

How can we create virtual spaces in real time, considering emotional factors extracted from spoken natural language?

Intelligent virtual environments are computer-simulated spaces that integrate artificial intelligence to interact virtually with users or participants. Specifically, an Affective Virtual Environment (AVE) is a system that includes emotion classification and generation tasks (Pinilla et al., 2021).

Emotions are complex and often expressed through multiple modalities (Mehrabian and Wiener, 1967). Therefore, while accessing these different sources to make better predictions would be desirable, such access is only occasionally feasible. The use of computer vision for emotional recognition has significant limitations in virtual reality, where the user's face is obstructed by the use of headsets.

Several artists and researchers have explored the aesthetic possibilities of language and emotion in hybrid environments. Golan Levin and Zachary Lieberman worked on interactive projects related to speech visualisation for Ars Electronica (Levin and Lieberman, 2002), while Maes and her team at MIT presented Auris. This system automatically generates music-generated VR environments (Sra et al., 2017), taking into account the song's mood using lyrics and acoustic features.

In our project, we propose to use speech recognition as the primary interaction method to address this challenge. By considering both the semantic and acoustic layers, we aim to capture the inherent ambiguities of language that arise from the disparity between these two modes. Our approach uses two independent machine learning models: A fine-tuned pre-trained BERT-based model for semantic prediction and a Long Short-Term Memory network trained on an actor-based English corpus for acoustic analysis (Forero et al., 2022).

Predicted emotions are mapped to audiovisual representations by an end-to-end process that encodes emotions in virtual environments. To ensure long-term musical consistency, we employ a rule-based model on top of the Conchord App, a system for real-time automatic generation of musical harmony through navigation in the tonal interval space (Bernardes et al., 2015). The generated 360° images are based on real locations using the Google Maps API and are transformed according to the predicted emotions using DeepAI.

As a result, immersive virtual spaces are generated that encapsulate emotions in spheres arranged in a 3D environment. Participants can create new affective representations or interact with other previously encoded instances. The system enables the creation of unique real time narratives using speech-emotion recognition in virtual reality and enhances live artistic performances.

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***Keywords**: Affective Computing, Virtual Reality, Speech Emotion Recognition, Tonal Interval Space, Artistic Live Performance Interfaces*

Full BIOS

Re-Sounding Bodies. A Multimodal Approach to Sound Composition

Alberto Maria Gatti

In recent decades, musical language has increasingly incorporated extra-musical elements such as video, light, and sensors, thanks to the growing interaction with modern technologies. This trend has created a creative and performing environment that can be described as multimedia or intermedia. Musical works often incorporate complex visual devices, gesture analysis, advanced sensors, and technologies such as augmented and virtual reality, creating immersive experiences for the audience.

However, while hearing and sight are widely used, tactile perception still needs to be addressed. Recently, research projects have explored the audio-tactile perception of sound, using tactile actuators to perceive sound waves through the human body instead of hearing. Interest in this mode of perception has also been stimulated by devices such as the Harness, developed by researcher Claire Richards at Ircam in Paris.

This has stimulated the study and cataloguing of the tactile perception of sound as a stimulus distinct from the heard sound. Although there are virtual and augmented reality devices that incorporate the sense of touch, they often focus only on vibration without considering audio-tactile perception. Moreover, these approaches may also rely on the performer's point of view to assist or augment the performer in a multimedia environment so that tactile perception is rarely posited as a protagonist by the audience. The multimodal approach to music composition, which considers hearing, sight, and touch, is emerging as an essential area of research.

Current studies aim to experiment with audio-tactile perception through perceptual and artistic experiments, something I have been doing since last year in an artistic research residency at Ircam. The outcome of this project is the development of tools, written in Max/MSP software, for audio-tactile composition in a multimodal context in order to categorise and disseminate sound in an innovative and multisensory way. This will be useful for anyone wishing to participate in and implement augmented and immersive performance thinking in their artistic practice.

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Cognitive Science in Virtual Artistic Landscapes

Eleftheria Giareni

Augmented and virtual reality transform the traditional art experience into a more holistic interaction. Cognitive science is investigating how sensory perception and emotional engagement respond to interactivity and immersive virtual art experiences.

Virtual reality (VR) and augmented reality (AR) do not rely primarily on the visual sense. They evoke multi-sensory perception of artistic landscapes by allowing the audience to interact actively or passively. Brain-computer interfaces (BCIs) have been used in experiments to dynamically alter the audience's impact on the artistic presentation. It has been shown that VR and AR can reignite audience engagement and enhance memory associations to recall the artistic experience through specific perceptual and emotional algorithms without abstracting the flow of the artistic encounter. Related results from studies of VR and AR in theatre, games, concerts, and art studies are briefly presented, along with their limitations and future work.

There are no material, physical, and spatial limitations in hybrid environments, which can lead to innovative expressions and future work. The stimuli are amplified, and the audience experiences a deeper understanding and more emotional moment. In conclusion, VR and AR can lead to a more cognitively, aesthetically, and emotionally engaging experience of learning and understanding art. This inclusiveness of hybrid artistic environments has led to their use in a variety of ways, from the educational sector (enhancing the learning curve for art students) to the medical sector [as a treatment for post-traumatic stress disorder (PTSD)].

With the growing opportunities come the challenges of hybrid artistic experiences. This digital ecosystem requires novel computational software and sophisticated skills on the part of artists. It also raises ethical considerations around issues of audience manipulation and the protection of personal data. In the case of real-time interaction between the audience and the art, the question of 'real understanding during participation' arises. In cognitive psychology, there are opposing views on whether immersive realities can cultivate empathy more than traditional art forms.

Neuroaesthetics, cognitive psychology, artificial intelligence, and the performing arts need to be explored and thoroughly investigated to highlight future research on software innovations and hybrid environments.

Nevertheless, the exciting field of virtual augmented realities can lead to a more impactful, holistic, and emotional experience, with increased engagement and enriched memory recall. Insights from neuroaesthetics, cognitive psychology, artificial intelligence, and the performing arts need to be explored and thoroughly investigated to highlight future research in software innovation and hybrid environments.

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Audience Participation and Live Events: Designing a Post-Event Virtual Experience for the 5th Women in Film Awards

Susan Gitimu

In recent years, the emergence of virtual event platforms has revolutionised the way people interact and engage in social gatherings. This abstract presents the design and implementation of a virtual post-red carpet experience for the 5th Women in Film Awards (WIFA), which will take place on 8 March 2024 in Nairobi, Kenya, using spatial. While recognising the importance of technology in enhancing the artistic experience in hybrid environments, the design aims to extend the reach and acceptance of the awards to those attending and those unable to participate in the event in person. At the heart of this virtual experience is the ability for post-event attendees to create personalised avatars, walk the virtual red carpet, have on-demand access to exclusive interviews and behind-the-scenes content, and present interactive photo booths where attendees can take snapshots of their avatars posing on the red carpet. By embracing technology and innovation, the virtual experience promises to provide a platform that celebrates the achievements and contributions of women in the Kenyan film industry while paving the way for future advancements in the aesthetic implications of artistic productions realised in hybrid environments.

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The Role of Sound in the Perception of Form in Hybrid Environments

Bogna J. Gladden-Obidzińska

The concept of form – in general, and in the context of the aesthetic experience in particular – has a long and rich history. From antiquity through Kantian philosophy, it was associated with the definition of a given perceptual object (e.g., contour, shape, or dimensions) or with its composition (e.g., structure and proportions). Twentieth-century thinkers, inspired by the art movements of the late 1800s, developed first new types of formalist theories (Von Hildebrand Sr., Witkiewicz Sr., Bell) and then phenomenological theories of perception that shifted the understanding of form towards intentional re-construction or co-creation of form with the object's expression (Ingarden, Merleau-Ponty).

In my presentation, I will explore how the re-construction of form in the aesthetic experience is affected by the presence of sound as a component of the object's presence in the hybrid environment (i.e. virtually extended reality), where the object's physical presentation is limited to visual and auditory properties. I aim to look at the roles of sound as background; as a secondary property; and as a primary property of an object that becomes the focus of the aesthetic experience. The main question informing this inquiry is whether sound can be considered a property constitutive to the aesthetic experience of the form of an object or that might even belong to its form and under what conditions this could be the case.

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***Keywords**: aesthetic experience, background, enhancement, hybrid experience, intentionality, phenomenology, property, sound, VR*

Immersive Narratives: Unveiling the Potential of VR-Enhanced Digital Storytelling in Foreign Language Acquisition

Dorota Hrycak-Krzyżanowska

This presentation explores the transformative potential of virtual reality (VR)-enhanced digital storytelling in foreign language learning. This research uses immersive technologies such as VR to offer new insights into engaging language learners through contextually rich and emotionally engaging content. By synthesising recent studies and technological advances, the study explores the role of VR in enhancing educational narratives to make learning more interactive, engaging and effective. Central to the discussion is 'immersive narrative', where learners actively participate in a story-driven environment, improving language comprehension, retention and application. This research examines case studies and findings that highlight the impact of VR storytelling on language development, listening skills and creative thinking. It also addresses the challenges and opportunities of integrating VR into language teaching, including technological accessibility, curriculum integration and pedagogical strategies. Through empirical evidence and theoretical frameworks, this study aims to provide a comprehensive overview of the potential of VR-enhanced digital storytelling to revolutionise foreign language education. It concludes that the use of immersive narratives promises to improve educational outcomes and transform language teaching and learning methodologies, creating more engaging, effective and immersive experiences for diverse learners in the digital age.

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Creative Intersections Between Generative AI and the Fashion Design Process: Is it to the Designer's Advantage or Peril?

Jacqueline Kisato - Faustina Agordha - Jo-Anne Rolle

The fashion design process is a key component in developing bespoke, authentic and unique garments. Fashion designers conceptualise, sketch and reimagine designs that go beyond the ordinary and expected trends to create bespoke and original garments. Over time, the designer has come to be seen as the genius behind the garment, perhaps even endowed with divine powers that transcend the five senses. The final designs are as varied as the possibilities of the interplay of line, colour and form to create an intricate symphony of fabric and pattern through symmetry, harmony, rhythm and movement. It is sophisticated: it is ingenious. The artistic experience has long been shrouded in mystery because each design path leads to a different result. Moreover, each designer expresses their own unique "voice" through this process. The emergence of generative AI and the integration of AI into the design experience poses a conundrum for designers: is this creative intersection a threat or an opportunity? Will it lead to the endangerment of the designer or the re-emergence of AI-enabled fashion creators? To explore these research questions, we used an experimental design approach. The study commissioned fashion design students to respond to a design brief on future fashion design for global seniors. We hypothesised that AI could not design better than the designer, as it is inherently generic in its approach. We used a case study of 24 final-year fashion design students at Kenyatta University and tasked them with developing a line of 4 garments: 2 garments were designed using computer-aided design (CAD) software Adobe Illustrator, and the other 2 designs were generated using AI Midjourney software by engineering the appropriate prompt. The design students presented their creations with a self-critique on whether AI improved their design process. Our findings showed that generative AI has many potential capabilities that can be used by the designer during the artistic creation process. The analysis showed that the key skill required was the ability to generate a unique, concise and creative prompt to enable the designer to achieve the desired output. In addition, 85% of respondents felt that although the AI tools were able to enhance creativity, the unique touch of the designer and the connection between designer and client were lost in the process. The findings suggest that generative AI is potentially very useful to the designer. Still, thea agency needs to ensure that the use of AI does not result in the loss of the 'human touch' in the fashion design process.

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***Keywords**: Fashion design, Generative AI, prompt engineering, Creative intersections*

Full BIOS

Subtracting vs. Adding: Exploring Space and Materiality with VR and AR

Marta Galvão Lucas

In this presentation, I will explore the use of VR and AR in relation to a found image that has played an important role in my artistic research.

As part of an ongoing practice-based PhD in sculpture, I came across a particular image: a photograph of the workers and artistic director of a Portuguese ceramics factory in 1888, sitting outside the building for the photograph.

At first, I thought of using AR to 'add' information to the image that I had gathered in my research - details of the workers' identities and biographies and their roles in the factory. But as I began to look at the background, I became aware not only of the building but, in particular, of a large panel leaning against the wall. The more I looked, the more questions came to mind: What was the panel made of? Could it have been plywood in 1888? Was it wood? Was it heavy or light? At that point, I understood that I would prefer to "empty" the image of its participants and have full access to the space, possibly using VR instead.

With the increasing use of AR in exhibitions as a way of 'adding' information to the artworks on display, it may be useful to consider how some artists engaged in so-called 'institutional critique' have used addition and subtraction as strategies in their work. Subverting or exposing the ways in which art is exhibited, these artists have made much of 'adding content' to what is 'already' on display: from Andrea Fraser's guided tours at the Philadelphia Museum of Art ('Museum Highlights: A Gallery Talk', 1989) to Fred Wilson's addition of a pair of slave shackles to a display case of nineteenth-century silverware at the Maryland Historical Society ('Mining the Museum', 1992). The opposite strategy, 'subtracting', has also been used, notably by Michael Asher, when he removed one of the interior walls of the Claire Copley Gallery in an installation in 1974 or when he 'subtracted' the statue of George Washington from outside the Art Institute of Chicago and moved it inside to one of its galleries (1979).

Adding or subtracting information with AR or VR can be a way of exploring space and materiality, but in using it, we should learn from artists who have long engaged with these strategies that they are far from neutral.

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Human Technology Organization in VR Participatory Costume Design. An Artist as a Cognitive Center of a Creative Assemblage

Aleksandra Łukaszewicz

Human Technology Organisation is the concept used to analyse today's complex work system because it gives a holistic view. This concept has been extensively researched in Scandinavia and is applied to 1) product design that benefits productivity, quality and individual safety; 2) the relationship between the individual and the work system; 3) safety; and 4) health issues. Each element of the HTO concept, i.e. human, technology and organisation, has tangible and intangible substrates. I apply this concept to the case study realised within the CAPHE project and focused on the participatory creation in a virtual environment using AI tools of the costume for the transcultural musical performance by Priscilla Gitonga (VR Costume Design Workshop led by Anna Syczewska on 7 February 2024). This allows me to analyse the participatory creative process that takes place with the engagement of people, VR glasses, computers, software, ideas, myths, legends and images. The agent that realises this action is a cognitive assemblage, as proposed by Katherine Hayles. It involves organisation, human factors (biological, cultural, emotional, etc.) and technology (software and hardware), but it also requires a cognitive centre. Then (at least for now), the artist-designer does not disappear with the development of VR and AI technologies. Still, his/her place and function are redefined, and he/she can be recognised as the cognitive centre of the creative assemblage.

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Inevitable Conformity to the Posters Project

Jonathan Mbinga Mwambi

I am Jonathan Mbinga Mwambi, a freelance artist based in Kenya, working through photographic abstraction. My works revolve around still life, re-living themselves through a new perceived meaning to be better understood as entities that constitute life. I am writing to apply for the Submission in support of my artistic project, following an observation of the relationship between an individual and society, which is very close. Humans have lost the sense of individual exploration and wonder, settling for 'popular' culturally appropriated acts which carry a sense of 'security' for many thus creating a reality by social consensus. The development of the human mind and self is only possible by living in society. The process is the abstraction of images through photography and overlays using memes, posters, local sayings, 'sheng' and commentary to challenge creative boundaries and stimulate thought, exploring more unconventional methods of interpretation and presentation. The work aims to unlock 'Food tied to a generation', Random thought: 'Humans feed to be, be to feed and be fed, is this the fundamental flaw that has been an acceptable cultural limitation? Working to reveal the sublime hidden within the 'ordinary' by analysing memes to gain insight into a particular society's attitudes, beliefs and values. In addition, the work combines traditional photography and design work to create poster-like pieces touching on various aspects of love, politics, recreation and money to provide insight into the ways in which the artist chooses to caption the collage artwork with programming code fused with song lyrics, memes, good reads and bible verses to mimic the noise we are all accustomed to. Yet, in resilience, we always find calm and order in the clouded chaos.

Mwambi Jonathan Mbinga, graduate in Business Information and Technology of the Jomo Kenyatta University of Agriculture and Technology; freelance artist; interests: humans and society; exhibitor at the National Museum in Szczecin – Museum of Contemporary Art (NMS), Poland; Jagundesignco@gmail.com

Iterating Nomadic Fragment Operative Concepts within Material Hybridisms in Artistic Research Training Toward Public Dissemination

Mónica Mendes - Helena Elias - Marta Lucas Galvão - Pedro Angelo

In the pursuit of advancing artistic experiences in hybrid physical and digital environments and addressing the challenges of artistic training, this communication explores the transformation and refinement of the operational concepts within the Nomadic Fragment - a novel framework that has emerged through our practice-based research process since the inaugural CAPHE project mobility. These concepts and the research activities derived from mobility address our investigations into the nourishment of artistic creation in the context of cross-cultural, geographically dispersed, hybrid media participatory processes.

In this communication, the second Nomadic Fragment workshop is described as a transitory site that links previous mobilities to embody collective engagement with the following mobility. For this reason, we elaborate on the subsequent iterations of the Nomadic Fragment mobilities and workshops, demonstrating their application in different contexts of artistic training and performance, reflecting and relating our experiences to concepts of artistic collaboration, participatory art and open knowledge sharing.

The operational concepts of the Nomadic Fragment unfolded through new iterations in Greece, where Naxos and Athens served as fertile environments for the collection of diverse raw materials, including physical elements such as clay and stone, as well as digital content such as 360-degree footage of nature and documentation of opera performances. These sites were also hubs for artistic creation, including Spatial Augmented Reality (SAR) (Bimber & Raskar, 2005), and facilitated meaningful knowledge-sharing experiences among participating students and researchers.

These distributive practices (Yuill, 2004) of open sharing and collaborative engagement set the stage for future research workshops. Lessons learned from these experiences will contribute to formulating refined guidelines for Nomadic Fragment activities to be undertaken during CAPHE mobilities. Indeed, it is our aim that the concept of the Nomadic Fragment can offer subsequent workshops new (re)configurations of what is shared and collaboratively worked through, thus adding derived concepts that can constitute a lexicon of hybrid materialities in relation to artistic research training.

In terms of the acquisition of hybrid material thinking, the situated methodology of the Nomadic Fragment consists of mid-term workshops between mobilities as transitional sites from one mobility to the next. Within this framework, PhD students can prepare their work-in-progress integration with a practical approach in the workshop and future activities within mobilities. The PhD students will undertake the immersion of their practices within the case study workshop, either by elucidating the experiences of the previous mobility, or by incorporating a segment of their ongoing work to promote experimental creative endeavours within the domain of hybrid materialities.

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Iterating Nomadic Fragment Operative Concepts within Material Hybridisms in Artistic Research Training Toward Public Dissemination

Mónica Mendes - Helena Elias - Marta Lucas - Pedro Angelo

In terms of artistic research training, the simultaneous experience of merging physical and digital materialities aims to stimulate curiosity and enhance the material literacy of PhD students. The collaborative engagement and embodiment of shared practices of production/documentation/reception will be different each time as the available material subjects are transformed and derived into new ramifications. In this way, the assemblage of hybrid materialities in each workshop, as a situated knowledge experience, will ultimately promote the connecting of dots of material-discursive hybrid things and the emergence of a lexicon available by the end of the project.

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Keywords: *Artistic research training, Intermedia artistic creation, Participation in hybrid environments, Hybrid performances documentation, Distributive practices, Hybrid artistic dissemination*

Bridging Essay Films and Virtual Reality: “Queer Utopia: Act I Cruising”

Luís Mendes - Mónica Mendes

Contemporary virtual reality (VR) demonstrates a spectatorial correlation with early cinema. In today's immersive media, there is a fetishisation of its technological apparatus (Golding, 2017), and content tends to elicit affective responses rather than foster knowledge production. This presentation addresses the spectatorial and linguistic issues inherent in contemporary VR, positing that attributes of essay film (Machado, 2003), known for its knowledge-producing cinema (Rascaroli, 2017), such as reflexivity, subjectivity and formal heresy, in convergence with VR characteristics such as immersion, agency and presence (Grau, 2003; McRoberts, 2018; Nash, 2018; Rose, 2016; Skarbez et al., 2021; Tucker et al., 2023), can create new possibilities for artistic expression.

Drawing on these concepts and intersecting with the writings of José Esteban Muñoz (2009), we have created 'Queer Utopia: Act I Cruising", a 6 degrees of freedom (6DoF) VR film. This presentation provides an in-depth overview of the production and research process, which uses notions of agency and presence to construct corporeal and spatial metaphors. The film embodies a departure from conventional VR narratives, challenging normative assumptions about space, embodiment and queer representation. Through interactive engagement, viewers navigate and inhabit a queer utopia, forging connections between virtual and lived experiences. By foregrounding the complexities of queer identity and desire within an immersive environment, "Queer Utopia: Act I Cruising" invites audiences to critically reflect on the intersections of technology, sexuality and representation.

This communication explores how the film disrupts dominant modes of storytelling and invites viewers to actively participate in meaning-making processes through spatial and interactive agencies (Tucker & Kiss, 2023). By blurring the boundaries between the virtual and the real, 'Queer Utopia: Act I Cruising" proposes to open up new avenues for exploring queer subjectivities and envisioning alternative modes of existence. Through a synthesis of theory and practice, it aims to contribute to ongoing discussions about the transformative potential of VR as a medium for cultural expression and critique.

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***Keywords**: Virtual Reality, Cinema, Queer Worldmaking, Artistic Expression, Immersive technologies, 6DoF*

Digital Research and Costume Design: The Digital and Interactive Process of Media Visuality

Mariana Milleco Ribeiro - Michele Augusto

The article proposal is based on the researchers' experience in academic production and as performing arts professionals, conjuring up the practice of costume design with their doctoral research, where the same digital media and technological resources are used to analyse and create the image. The sketches for a costume project developed in partnership will be used as case studies to guide the writing and thinking process (the original material cannot be used due to a confidentiality clause with the HBO production). In addition, material produced to illustrate the process will be used to demonstrate the method of understanding research through it.

We intend to present the strategies for developing the construction and analysis of costumes for television and cinematographic media productions based on the following steps: first, exposing the processes of creation and analysis of costume images shaped by "manual" forms of digital experience construction as an essential tool for conceptual understanding of media visuality through the use of technological resources, from the elaboration of database resources, using digital collections and digitisation, for the construction of illustrations and sketches that are sensorially tangible to the design.

The second stage is dedicated to the practice of scene design, concept development and costume design with practical cases. The elaboration of projects is based on inspirations and collections as a starting point for new creations using costume design and digital tools. Semiological analysis is used as a resource, a knowledge element and a conceptual elaboration of costume design and its research. In the third part, we will present the development of costumes as a concept for understanding the construction of media and cinematic atmospheres. We will use costume design and digital tools as a resource for semiological analysis to understand the costume designer's creative process, starting from the final result, i.e. the scenes and the framing.

Therefore, we intend to demonstrate the possibilities and the artistic quality that can be achieved through technological applications without compromising the traditional and already known ways of constructing costume projects for the performing arts, such as freehand drawing and collage, but still ensuring agility and a greater connection between new visual languages and image quality, both television and cinema and the creation process for such. In this way, we will continue to emphasise the relationship between academic production and practical production as two sides of the same coin, in symbiosis and necessary for the artistic and cognitive expansion of creative processes.

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Keywords: *Technologies & Creativity; Digital Creative Process; Costume design; Cultural Heritage, artistic creation and interpretation*

Innovative Approaches in Opera: Integrating XR and AI for Enhanced Immersive Performances

Alessandra Montali

The introduction of Virtual Reality (VR) and Augmented Reality (AR) into the context of performance is generating growing interest, even in the field of classical music. These technologies offer ideal means to actively involve the audience and create innovative interdisciplinary paths. The lecture will explore different creative perspectives on implementing VR, AR and AI in performance, highlighting their potential to shape and enrich the operatic experience.

The talk will present case studies developed by the Conservatorio Puccini in collaboration with various partners within the CAPHE project. Ongoing experiments based on interaction with AI, VR and AR will be described, both visually and sonically. With regard to the visual aspect, we will discuss shooting and editing methods in 360°, the generation of scenographies, videos and characters through collaboration with AI, and the use of avatars in a virtual environment. On the aural side, managing the digital orchestra with MIDI sounds and integrating immersive 360-degree sound into the performance space will be addressed.

The proposal and analysis of case studies aim to provide a first response to the entry of Extended Reality (XR) and AI technologies into the world of music theatre. It highlights the importance of an interdisciplinary methodological approach linked to the need for collaboration between artists and experts from different fields and disciplines, such as music, technology, architecture, visual arts and literature. Indeed, the inherent interdisciplinarity of opera performance can be enhanced and amplified by new technologies to meet the growing demand for audience engagement by developing an immersive performance dimension. Finally, we will discuss these technologies' cultural and social implications in the context of opera, highlighting their potential key role in accessibility and engagement for different communities and generations.

Montali Alessandra, Dr.; Professor of Music History, Research Referent and Gender Equality Plan Referent at the Conservatorio Puccini in La Spezia; Associate Professor, Florida Atlantic University; Visiting Professor at RK University in India (2024); pianist and choir director; interests: perception of time and mechanisms of musical listening, 20th-century music, interdisciplinarity and education through new technologies; author of: Ascoltare il Tempo. Relazioni temporali in musica: dalla linearità alla stasi (2008), co-author of Finestre sul novecento in musica Per un percorso didattico interdisciplinare (2020); alessandra.montali@conssp.it

Breaking Boundaries: Exploring the Roles of Performer and Audience in AR Interactive Audiovisual Performances

Andrea Nicoli - Fabrizio Casti - Alberto Gatti

The Department of "Music and Contemporary Performing Arts" of La Spezia, which has always focused on research into new forms of sonic expression, proposes a performance involving both students and teachers. The development environment will be an experience that uses AR, the most crucial aspect since the birth of electronic music, and interactivity mediated by processes parithetic to AI.

Real instruments enhanced by real-time sound manipulation, video generated and interacting with the sound, manipulation of editing and music-making parameters triggered by sensors and devices entrusted to the audience will constitute the de facto sensory experience, not passive but immersive, for both musicians and listeners. Each of them will be able to be both a spectator and participatory actor, freeing themselves from the constraints of roles that belong to a long-gone tradition.

Creative interactivity will also be possible for those following the event online. Each message sent will become a code that will be an integral part of the event, both audio and video.

The acoustic space will also be an expressive and creative element. It will be modified so that the virtual environment can vary, giving the impression that the walls of the listening room are different from the real one.

Ultimately, those who actively participate and those who simply want to be transported by the events will become part of a community that seamlessly travels to imaginary places.

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Sensory Art

Michał Ostrowicki aka Sidey Myoo

In my presentation, I will consider sensory art, by which I mean a type of art that can aesthetically dominate the recipient's experience while maintaining its autonomy. This is particularly evident in contemporary art that uses technology to enhance or extend human experience, especially sensory experience. I highlight the variability of sensory effects in art, starting from ancient Greek tragedy and catharsis times, and emphasise contemporary art that influences the psychomotor aspects of the recipient, persuading or acting haptically. Examples of artists and creators such as Paul Sermon, Yoriko Mizushiri, Nonny de la Peña, Ribas Moon and Neil Harbisson will be cited.

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Classical Singing in Foreign Languages: An Acoustic and Comparative Study about Similarities and Differences of 5 Operatic Languages

Georgios Papadimitriou

Singing in a foreign language can be a significant challenge for classical singers, especially if they have not yet fully mastered its semantics and/or phonology. Vowel sounds that do not exist in the mother tongue are usually the most common reason for sounding foreign and inauthentic, while the incorrect production of such phonemes can lead to crucial intelligibility problems. In the 21st century, with an ever-expanding artistic marketplace and open international borders, more and more classical singers will be required to sing in a foreign language outside their home country. Learning and working with multiple languages has therefore become commonplace for them. This lecture examines the acoustic similarities and differences of the vowel sounds of English, German, French, Italian and Russian, all of which are considered standard languages of Western classical music and opera. Formant analysis will also show how the articulation mechanisms used in singing differ from those used in speaking.

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***Keywords**: classical singing, foreign languages, formants, acoustic analysis, intelligibility, vowel sounds*

The Multi-Hub Music Festival as a Strategy for Sustainability, Inclusion, and Human Survival

Richard Parncutt

Music performance involves the embodied experience of performers interacting with each other and the audience. The invention of analogue (and later digital) sound recording fundamentally changed the way we interact with music. Developments in internet-based audiovisual communication and augmented/virtual reality have additional exciting artistic and political implications.

Audience interaction and conversations with performers before and after a remote musical performance can enhance the real-time experience. Those who cannot physically attend a performance can do so virtually; performers no longer need to fly to new audiences. Performance becomes more sustainable and inclusive.

Imagine a global music festival (e.g. an amateur choir festival) taking place simultaneously on every inhabited continent. Festival hubs communicate audiovisually in real time, using a mix of high-quality, short-time, one-way communication (e.g. YouTube livestream) and lower-quality, quasi-instantaneous, two-way communication (e.g. Zoom). Each performance has live and virtual audiences; audiences at each hub repeatedly choose between these options. The programme includes a pre-organised informal global chat for all performers and audience members. Richer countries help poorer countries by funding venues, equipment and technical support.

For a global event with nominally equal hubs (distributed globally with no central hub), the programme can be limited to 3 evenly spaced 4-hour slots per 24-hour day. If these are UTC 0-4, 8-12 and 16-20 in the northern summer, then UK participants (for example) will be online daily from 9 am-1 pm and 5-9 pm local time. They will miss the 1-5 am time slot but can experience it later as videos. From 9 am to 1 pm, they connect to hubs in Europe, Africa, Asia, and Australasia, and from 5 pm to 9 pm, they connect to Europe, Africa, and the Americas. Time zones that are 8 hours earlier or later (e.g. LA, Tokyo) communicate similarly (east a.m., west p.m.). Time zones within 2 hours of one of these 3 references adjust their daily rhythms (e.g. Chicago+2, Bogotá+2, Cape Town+1, Tel Aviv+2, Bangkok-2, Sydney+1). Other locations are less convenient (e.g. Honolulu-3, Buenos Aires ±4, Delhi-3.5); a second festival can solve this by choosing different UTC time slots.

All performances at such an event could be freely available worldwide in real time. They could include relevant political content motivating political cooperation for climate, peace, justice and human survival. Virtual and augmented reality technologies could be incorporated to enhance the artistic experience.

The author has organised an academic conference along similar lines (ICMPC 2018) and published academic papers on multi-hub conferences.

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Hybrid Metamorphoses of the Moment - from Nature to Immersive Forms of Arts

Elzbieta Perzycka-Borowska - Michał Parchimowicz - Zbigniew Romańczuk

This presentation examines the convergence of traditional art forms and modern technologies inspired by nature's inherent beauty and complexity, resulting in the creation of multidimensional poly-artistic works. At the core of this examination is the concept of "Hybrid Metamorphoses of the Moment," which posits that even the most fleeting observation can serve as a powerful impetus for a rich tapestry of artistic expression.

The analysis commences with an examination of haiku poetry, renowned for its brevity and profound immediacy. Haiku serves not merely as a poetic form but as a lens through which we perceive the transient beauty of nature, capturing the essence of moments with poignant clarity. This distillation of experience into haiku underscores the poetry's capacity to evoke deep introspection and emotional resonance, laying a foundation for translating these nuanced feelings into a broader palette of artistic expressions.

Furthermore, the integration of artificial intelligence (AI) into the creative process is subjected to critical analysis, highlighting the intricate challenges and opportunities it presents in terms of authorship and creative authenticity. By incorporating AI into the artistic workflow, we are prompted to rethink traditional notions of creativity, pushing the boundaries of what is possible in artmaking and expanding the horizon for innovative artistic expressions.

This presentation aims to elucidate the transformative potential inherent in the fleeting moments of haiku, as distilled through the lens of nature, and how these insights can be extrapolated to enrich and diversify contemporary artistic practices in hybrid environments. By bridging the gap between the ephemeral natural world and the expansive possibilities offered by immersive art forms, we invite a reimagined engagement with art that reflects our times and is deeply rooted in timeless natural beauty.

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Keywords: *interdisciplinary art, haiku poetry, immersive technologies, generative artificial Intelligence in Art*

Full BIOS

Deep Mapping for Environmental Immersive Apps: Opportunities and Threats / Case Study: The Alyko Street Art Gallery on Naxos

Jakub Petri

The poster covers the process of preparing a module for a self-guided tour application dedicated to the Alyko Street Art Gallery on the island of Naxos. The main focus is on enhancing the users' aesthetic experience by bypassing the disengagement produced by the exposure to digital storytelling media while experiencing the analogue environment.

The presentation will then discuss the deep mapping research methodology in the context of gamification and immersive aspects of the final project. The possibilities of engaging users through haptic exploration of the environment will be discussed. Opportunities and threats of deep mapping practices will be explained and further discussed.

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Sculpture and Hybrid Spaces

José Manuel Revez

Unlike other forms of artistic expression, sculpture is intimately linked to the space it occupies. In a way, we can't discuss or imagine sculpture without considering the intersubjective relationship that exists between the subject (observer), the space (environment) and, of course, the sculptural work (object), particularly since one of the defining sculptural values is Presence. As Albrecht (1981) points out, sculpture affects our perception of space, a dimension in which we evoke emotions and spirituality, not only in the presence of the work of art but also in its absence.

Space is a plastic element in the syntax of sculpture. It is through the ordering of the material in space that the sculpture is formed as a unit, revealing the dialogue between the elements that make it up and materialising the idea and intention of the sculptor. Masó (1997) emphasises that space is a physical element that feeds and combines with the surface and structure of the work, forming the basis of its plastic language. Sculptural space is a plastic element that is formed through a dialogue between material and immaterial parts, between the full and the empty, that is part of the structure of the work, and that assumes itself as the specific result of the configurative process, thus ceasing to be considered an abstract element.

This essay analyses the relationship between sculpture and its presence in hybrid environments, particularly virtual spaces. Considering sculpture as a plastic expression that manifests itself in a specific space through a material presence, how can this type of art be legitimised in an ethereal space where matter does not exist? Can the digital become a medium for sculptural expression, assuming itself as a relevant "mater" for sculptural practice?

The relationship between sculpture and virtual space is based on the peculiarities of the digital sphere. In this way, both the sculptural work and the space have a digital existence that stems from two paradigmatic perspectives: on the one hand, the digital should be seen as a conceptual instrument for the realisation of the work of art, and on the other hand, it should be understood as a medium of artistic expression.

Thus, following these two points of view, we will try to analyse the peculiarities of sculpture in the sphere of virtual reality, highlighting the relationship created with the immaterial space it inhabits, observing the plastic values that configure it, together with the proposals and typologies it presents. To this end, we will first try to understand and explain what virtual reality consists of to analyse the characteristics of virtual sculpture and virtual space.

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***Keywords**: Sculpture; Hybrid Environments; Virtual Reality; Virtual Space*

AI for Social Change: Doria Manfredi's Case in the Silent Film 'Puccini e la Fanciulla' by Paolo Benvenuti (2008)

Barbara Salani

Artificial Intelligence (AI) has the transformative potential to reshape societal responses to historical and contemporary issues of violence against women. This paper embarks on an innovative exploration of how AI can be used to bring about social change, focusing on the true story of Doria Manfredi as portrayed in Paolo Benvenuti's film 'Puccini e la Fanciulla'. Doria's story, deeply embedded in factual history, provides a compelling case study highlighting defamation and violence's emotional and psychological impact.

Through a multidisciplinary approach, this research uses the analysis of historical documents, personal correspondence and media representations to challenge traditional narratives and offer a nuanced understanding of Manfredi's life and the social conditions that led to her suicide.

This interdisciplinary exploration proposes not only a reflection on the historical case of Doria Manfredi but also a forward-looking consideration of how AI can be strategically applied to pave the way for a future in which technology plays a crucial role in preventing such tragedies and fostering a more just and understanding society.

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Virtual Walks in the Poetry of Mary Oliver Through Google Earth: The First Virtual Literary Park in the United States

Ilaria Serra

This presentation focuses on using the virtual space of Google Earth to enhance and present the poetry of one of the most important American poets of recent decades, Mary Oliver (1935-2019), whose work is being translated by Einaudi for the first time in Italy this year.

Oliver found inspiration in close contact with the environment and nature, transforming images of the natural world into metaphors and her own walks into philosophical reflections.

While much of Oliver's artistic career was inspired by walks around the lakes of the Cape Cod peninsula in Massachusetts, she spent the last years of her life in Hobe Sound, Florida. Here, she wrote the poems collected in Felicity (2015) and compiled her collection Devotions: The Selected Poems of Mary Oliver (2020).

The Italian Program of Florida Atlantic University has created the first literary park in the United States, connected to the Italian network of literary parks and dedicated to Mary Oliver, located in Hobe Sound, on the Atlantic coast of Florida. Visit the official site in the Rete.

This innovative digital project, available in English and Italian, uses Google Earth to explore Hobe Sound and map its geometaphors. The project is inspired by my own research on the literary geometaphor, a geocritical figure describing the territory of the imagination, and is the result of my graduate course, 'Poetic Geography of Italy'.

The project's most striking feature is the digital art inserted by Topher Maraffi, Professor of Media Arts, Design, and Technology in the College of Design at North Carolina State University. In slides entitled "Poetic Geography," Oliver's verses are digitally superimposed on elements of the territory. In this way, the real landscape offers glimpses of the poetic landscape, visible through the "double gaze" that, according to Giacomo Leopardi, belongs to poets.

The digital tool of Google Earth helps us visualise the poetic world and literally walk in Oliver's footsteps, conjuring up a new, intense connection with her verses. The project is unique and interactive: Googl Earth features help visitors move around the streets and beaches, creating a sense of being there. Rather than opposing nature, technology enables the natural experience and provides a vivid gateway to the poetic verses.

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Between the Old and the New: The Art of New Technologies and Social Change

Joanna Szczepanik

This presentation was inspired by Loukia Alavanou's installation "Oedipus in Search of Colonus" (2022), which was presented at Onassis Stegi, the Centre for Contemporary Culture in Athens, in 2023. It is a mythological story set in the contemporary realities of the Roma settlement on the outskirts of Athens, transferred to an art gallery using 360-degree VR technology.

Alavanou cites the ideas of Antonin Artaud's Theatre of Cruelty as inspiration, which postulates a theatre of physical sensations that "arouses the nerves and the heart". According to the French visionary, the scenography should be fragmented, and the use of a network of sound vibrations should envelop the spectator. Alavanou implements these assumptions with VR 360-degree technology and architectural support in the construction of hemispherical domes and design support in the preparation of special seats. So, are new technologies just a means to achieve "old" ends? What are the latest qualities that emerge from the use of new technologies?

The experience of the multi-dimensionality of the installation space breaks down the boundary between the real and virtual worlds. Mediated by high-quality technology, the observed realities of the lives of a marginalised group become just one element of a fictional narrative. The perspective of a viewer comfortably seated in a specially designed chair in a modern art centre, with expensive VR equipment on his head, also suggests questions about the inclusivity of technology and access to the effects of its creative use.

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Giacomo Puccini Centenary 1858-1924

IL TRITTICO XR

GIANNI SCHICCHI

Design Image Dominika Wilczyńska

17 MAGGIO 2024

SALA DANTE

LA SPEZIA

PRESENTATION **9.00 AM**

PERFORMANCE **11.00 AM**

Hybrid Orchestra

Conductor **Federico Bardazzi**

Experimental Research Project Coordinators
Alessandra Montali, Federico Bardazzi

Digital Art and Education Curator
Elżbieta Perzycka Borowska

Storytelling Video and AI
Michal Parchimowicz

VR Interior Environment Designers
Miastopracownia, Barbara Nawrocka, Dominika Wilczyńska

Sound Engineer
Nicola Cavina, Guido Paolo Longo

IT Coordinator
Tercio Terencio

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CFP: “Hybrid Landscapes: Experiencing Things, Mapping Practices, Re-construing Ecologies of Entangled Environments”, 74 (1/2025)

Editors: Helena Elias (University of Lisbon), Jakub Petri (Jagiellonian University in Krakow), Natalia Anna Michna (Jagiellonian University in Krakow)

Submission deadline: 31 December, 2024

In recent decades, the relationship between discourses and materiality has been at the center of theoretical and practice-based debates, permeating numerous artistic, humanities, and social sciences research endeavors. The notion of materiality is being reconfigured concerning a myriad of key subjects, encompassing fluxes (Deleuze and Guattari), unstable properties of things/objects and agencies (Latour, Ingold, Barad), such as the digital, organic, extracted, politicized, naturalized, artificialized, economized, liberalized, globalized, colonized, gendered, racialized, nationalized, and capitalized, to name a few. The term “agency” is understood within this framework to avoid an exclusive representation, whether fixed or fluid. Decentering Eurocentric human knowledge approaches may provide an opportunity to decolonize matter within the entanglements of discursive-material practices.

By envisioning such hybrid landscapes, embodied discourses, agencies, identities, and places can be perceived in diverse time-lapse choreographies as they slice, incorporate, reject, reposition, and transform themselves according to a heterogeneity of realities. Indeed, ecologies are not restricted to fixed frames and borders. The concept of landscape, according to Bennett, conveys a vitality of multitudinous vibrations of matter, whether humans perceive it as alive or not, considering their temporal presence in the world. Thus, a landscape conveys a heterogeneity of realities that can foster diverse dynamics of their own accord. Accordingly, human and non-human actants, regencies, and dynamics are transformed into diverse cycles of temporalities that may overlap, coexist, and intersect, all compounding a vibrant materiality. Concerning landscape studies, when one examines places, spaces, and relationships, it becomes a matter of reconfiguring the experience with things and the material agencies at play between what we might (re)nominate as humans, quasi-humans, and non-humans. These impermanent and situated configurations embrace agency, embody other forms of knowledge, and exist in transitoriness, emergence, and urgency, as nomadic subjects (Braidotti), vibrant matters (Bennett), while envisaging a more-than-human world.

Both the terms “Landscape” and “Hybrid” agglutinate such urgent thoughts needed to shift from human-centered positions as inscribed in Western and Eurocentric modes of knowledge. These can also be connected to other forms of knowledge, such as indigenous studies and indigenous traditional practices of thought, which have been incorporating agency concerning the relationship between nature and culture. Thus, “Hybrid Landscapes” addresses, transversely, artistic, human, and social sciences practices and research experiences that encompass questions regarding what/when/how a hybrid landscape might manifest, whether through narrative research, embodied practices, deep mapping, art-based reflexive practices, that contribute and unfold the existence and manifestations of agents’ experiences and mutual interconnections. To address these subjects, we welcome submissions from scholars, artists, professional practitioners with a reflexive approach, ranging from different fields of expertise, but not limited to:

More-than-human urban landscapes: hybrid, intermittent, nomadic, impermanent, emergent

Decolonized materiality: embodied discourses, agencies, identities, and place

Urgent practitioners: artivism, citizenship, the commons, and dissensus

Alternative geographies: layers, interactions, non-representational approaches Nomadic subjects: narratives, identities, and territories

(Re)nominating the human: actants, craft-AI-ship, and (re)production.

COMMUNITIES AND ARTISTIC PARTICIPATION IN HYBRID ENVIRONMENT

HORIZON-MSCA-2021-SE-01

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