MuSA 2023 INTERNATIONAL CONFERENCE
Music and Sonic Art: Seeing Sound, Hearing Sight

Supported by the Royal Music Association

SATURDAY, 28 OCTOBER 2023
Martin Harris Centre, Room G16
University of Manchester

Conference Committee:

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Professor Miroslav Spasov (Keele University)
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8.30am: Registration

**Session 1: 9.00 am - 10.30am**

*Chair: John Dack*

9.00am – Miroslav Spasov  
*Bringing forth sonic and visual worlds: Archetypes, memes and musemes*

9.30am – Andrew Connor  
*Gestalt, perception, and attention within the audiovisual immersive environment*

10.00am – Gregorsz Samson & Konrad J. Maciborski  
*Exploring the capabilities of generative pre-trainee transformers for coherent procedurally generated visual media: A multimodal approach*

**TEA/COFFEE BREAK 10.30am - 10.45am**

**Session 2: 10.45am – 12.15pm**

*Chair: Miroslav Spasov*

10.45am – Marc Estibeiro  
*The conflicting roles of extra-musical influences in the reception of mixed works that combine acoustic and electroacoustic elements*

11.15am – Carl James-Reynolds & Jupiter James-Reynolds  
*The LIDAR Harp: The development and evaluation of a new MIDI controller*

11.45 am – Jules Rawlinson  
*Sounding time and focus in the scientific films of Eric Lucey*

**LUNCH 12.15pm - 1.15pm**

**KEYNOTE PRESENTATION: 1.15pm - 2.15pm**  
*Chair: Mine Doğantan-Dack*

*Professor Simon Emmerson*  
*Imagination and Image (in Sonic Art)*

**TEA/COFFEE BREAK 2.15pm - 2.30pm**
Session 3: 2.30pm - 4.00pm

Chair: Marc Estibeiro

2.30pm – Ryo Ikeshiro & Lina Simon
Audiovisualising climate data: Art and climate action

3.00pm – Dominic Thibault
Mosaîque: Concatenative synthesis for practicing musicians

3.30pm – Katarzyna Figat
Cinematic images of music

TEA/COFFEE BREAK 4.00pm - 4.15pm

Session 4: 4.15pm - 5.45pm

Chair: Sean Williams

4.15pm – James Heazalwood & John Macdonald
Soundtracking violence: Ludic breakbeats and electronic dance music in action games

4.45pm – Gabriel Dargains
Ode to the acousmatic critters: Non-spatialised sounds in open world video games

5.15pm – Robin Parmar
Stroboscopic rhythm as chromaesthesia in Curgenven’s Agenesis

5.45pm - Concluding remarks and end of conference
Miroslav Spasov

Bringing Forth Sonic and Visual Worlds: Archetypes, Memes, Musemes

For some time now my creative interest has been closely related to and influenced by the developments in cognitive science – the relationship between the biology of cognition, semiology, and creativity – as well as in the semiology of music. In this paper I first highlight some of the findings of Santiago Theory that lead to an understanding of the processes of knowing by reference to processes of perception, emotion, action, language and conceptual thinking. According to this theory, cognition is understood not as a representation of the world “out there”, but rather as a continuous bringing forth of a world through the process of living itself. Secondly, I bring into this context the idea of “structural homology” – a parallelism of structures between musical processes on the one hand and processes of subjectivity on the other hand. I argue that the objects, events, and processes around us act as “agents of articulation” for these structures and states of the human world. Thirdly, I attempt to investigate, contextualise, and identify the “parallelism” between the sonic and visual “structures” in “the world out there”, our inner states of awareness and the creative musical processes in several works of music and visual arts. I have been seeking to rationalise the congruence between the sonic and visual “structures” we “create”, and to understand whether and to what extent they relate to our cognitive activities, to ascertain cultural (memes), behavioural/psychological (archetypes) and sonic and/or musical units of meaning (musemes). I hope that ideas discussed will unveil some aspects of the nature of our creativity and incite further research in this area.

Miroslav Spasov, British/Canadian/Macedonian composer, researcher and interactive music software developer, writes instrumental and interactive electroacoustic music. He is a Professor of Composition and Creative Music Technology and Director of Programmes at Keele University. His compositions have been performed at festivals and solo concerts across Europe and both North and South America by distinguished ensembles such as Kreutzer Quartet (London), New London Chamber Choir, Janáček Philharmonic Orchestra (Czech Republic), Regina Symphony Orchestra (Canada), Freiburg Percussions Ensemble (Germany), Reconsil Ensemble (Austria), SKAW Duo (UK), and soloists such as the violinists such as János Négyesy and Päivikki Nykter (USA), Sarah Watts (bass clarinet, UK), Michael Bell (piano, UK), etc. Spasov is also a software developer (ENACTIV, interactive multimodal composing system, 2009-2015 and Attractors Library, a multi-platform collection of MaxMSP Externals, 2010-2020) and author of articles on interactive realtime composition (Organised Sound, Computer Music Journal). He is a recipient of several composition prizes (Pierre Schaeffer, Italy; Concours International de Composition Musicale de Besancon, France; DMM, Macedonia) as well as of numerous grants (Create Fellows: The North West Creative Economy Engagement Fellowships, 2018; Canada Council for the Arts Grant , 2004, 2008, 2016; Alberta Foundation for the Arts, 2003; Ministry of Culture of Rep of N. Macedonia, 2015). Spasov’s recent interests interlink interactive music composition based on software for interactive performance and the application of chaotic attractors in realtime sound synthesis and processing as well as semiotics and cognition applied to creative processes.
Creating content for immersive environments presents a directorial challenge distinct from existing audiovisual media such as film and television. Mitry (2000) notes that within the cinematic environment, the frame defines the image presented to the audience – within immersive environments, the frame does not exist, the participant can look in any direction, so the conventions of directing attention within a defined frame long established within directorial cinematic language cannot be utilised. As Jerald (2016) points out, the key to directing the participant towards the ‘action’ in an immersive environment is capturing their attention with salient stimuli, bringing individual objects - visual, audio or a combination - to the forefront of the participant’s perception. An awareness of enhancing the perception of the key objects driving the experience forwards is crucial when working in this medium. A phenomenological approach to assessing the relative importance of these objects is the use of gestalt principles. Research in this area has been dominated by visual perception, but Julesz and Hirsch (1972) carried out a rare comparison of gestalt principles across the two perceptual streams. A key observation was the idea of ‘some-thing or ‘not-thing’ – the exclusive allocation of an object to the foreground, highlighted against a background attracting less attention. Bregman (1994) also observes the importance of foreground allocation in auditory streams, where this also localizes visual objects and attracts attention. The application of gestalt principles assists in capturing attention – when examining reactions to 3D models within VR, Valencia-Romero and Lugo (2017) determined that the principles of symmetry, parallelism and continuity have a measurable impact. MacNamara (2017) found a positive correlation between the use of gestalt principles in the creation of VR user interfaces and their usability – this could be investigated further into the design of the full experience and particularly to achieve attentional capture. A revision of Julesz and Hirsch’s research into the application of gestalt principles in immersive environments is overdue. This paper sets out an initial review and terms of reference for further research in this area, establishing the importance of gestalt principles for the immersive audiovisual creator in capturing the audience’s attention within a fully 360° environment.

MacNamara, W., 2017. *Evaluating the effectiveness of the gestalt principles of perceptual observation for virtual reality user interface design*. p76. Available at: https://arrow.tudublin.ie/scschcomdis/107/ [accessed 30/06/2023].
Andrew Connor is the Programme Director for Design and Digital Media at Edinburgh College of Art, University of Edinburgh. His teaching covers media and culture, game, interactive, and immersive design. His research interests are in digital design and creative practice, and his current research looks at how people engage with creative works in real and virtual environments. He has an active interest in design as a discipline and practice in South Asia, working with institutions and creative practitioners in this global region. His background includes radio, television, film and multimedia production, along with his current practice as a creative animator and sound designer.

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Grzegorz Samson & Konrad J. Maciborski

**Exploring the Capabilities of Generative Pre-Trained Transformers for Coherent Procedurally Generated Visual Media: A Multimodal Approach**

The rapid advancement of artificial intelligence (AI) has opened up new frontiers in creative expression. This study delves into the realm of coherent procedurally generated visual media, utilizing the cutting-edge Generative Pre-Trained Transformers (GPT) tools. By harnessing the power of generative models, this research investigates the potential of creating multimodal compounds that seamlessly combine textual or audial inputs with visually captivating content. This research introduces an innovative approach to enhance foundational material, encompassing text, audio, or text sources (scripts), and sound layers (audio plays), by incorporating a supplementary layer of multimedia experience - namely, procedurally generated visuals. Through the utilization of AI tools, a series of images are generated, culminating in a captivating narrative visual novel that immerses the audience in an enhanced form of sound perception, while maintaining focus on the original auditory content. The core concept of this paper revolves around the creation of a systematic pipeline, akin to a blueprint, for the process of generating procedural images. This is achieved by transforming the source context, whether auditory or textual, into text prompts and subsequently employing programming techniques to automate the generation of coherent and cohesive visual cues. The resulting amalgamation of visual and auditory components establishes a captivating multimodal piece of art. By employing this approach, the research endeavours to explore the potential for seamlessly integrating visually generated cues with auditory experiences, thereby expanding the artistic landscape. Through the synthesis of these two modalities, the audience is invited to embark on a sensory journey, engaging with a heightened level of immersion and aesthetic cohesion. In essence, this research contributes to the field by presenting a methodology that amalgamates text, audio, and procedurally generated visuals. By automating the process through programming, the creation of coherent multimodal art is made possible, enriching the overall sensory experience for both creators and audiences alike.

Grzegorz Samson – student of sound engineering at the Feliks Nowowiejski Academy of Music in Bydgoszcz and graduand of computer science (specialty multimedia) at the Polish-Japanese Academy of Information Technology. Enthusiast of merging art with modern technologies, in particular exploring procedurally generated art using AI. President of the Students Council,
interdisciplinary researcher preparing and collaborating on research of sound perception in MRI with researchers from Collegium Medicum Nicolaus Copernicus University.


Session 2: 10.45 am – 12.15pm

Marc Estibeiro

The Conflicting Roles of Extra-Musical Influences in the Reception of Mixed Works That Combine Acoustic and Electroacoustic Elements.

The purpose of this paper is to examine ways in which visual and other non-auditory, extra-musical elements bring meaning and value to performances of mixed works: i.e., works which combine both electroacoustic and acoustic elements. The paper explores the questions: to what extent are the contrasting traditions of electroacoustic and acoustic music in conflict when considering the influence of extra-musical elements on the reception of live performances of mixed works? and: how can visual and other extra-musical aspects of the body/instrument relationship be exploited favourably when presenting mixed works? When considering musical performance, it seems reasonable to suppose that it is the auditory experience which defines the domain, or, at the very least, has a privileged position over other extra-musical aspects. On reflection, however, it quickly becomes apparent that a musical performance is in fact very much an interconnected and multisensory event. Performers and listeners alike frequently underestimate the importance of the role played by visual and other extra-musical information in the reception of performances. Studies have shown that, despite the apparent primacy of auditory information, visual and other elements can and do influence our interpretations of musical performances (e.g. Tsay 2013). Any account of the ways in which we assign meaning and value to musical performance must therefore not simply focus on the auditory experience of an event but must also consider the interconnecting individual, social, environmental, and visual aspects of the experience. There is a conflict, however, between what we might consider to be traditional performances, carried out using conventional acoustic instruments or voices in a space that is physically shared by performers and listeners, and electroacoustic or other forms of digital music, where conventional connections between instruments, performers, listeners, and performance spaces may no longer be relevant or meaningful. In traditional performance, the body/instrument relationship forms a highly visible continuum with clear connections between physical and musical gestures and the resulting experience. In digital music, however, such connections may no longer be necessary. Whilst acknowledging that there will be a great many exceptions, it would be reasonable to say that, when considering connections between the performer, the instrument and the listener, traditional acoustic music tends towards the visible and electroacoustic and other digital forms tend towards the invisible. Performances of mixed
works, for acoustic instruments and electronics, highlight these tensions between the visible and the invisible. It is these tensions, together with possible strategies to exploit them, which are explored in this paper.


Marc Estibeiro is a composer, guitar player and academic. He has degrees in Music, Music Technology and Applied Linguistics from Middlesex University, Bangor University, and Essex University. He has a PhD in Composition from Durham University. Marc’s academic work focuses on composing music for acoustic instruments and electronics. His work has been presented at conferences, workshops, concerts, and seminars around the world. Notable examples include Stockholm (Innovation in Music 2022), Mexico (Visiones Sonoras, Morelia 2012), China (ICMC, Shanghai 2017; International Guitar Research Conference Hong Kong 2019), Germany (MuSa 2017 and 2018, Karlsruhe), and South Korea (ICMC 2018). In 2019 he composed the music and designed the electronics for a large-scale, audio-visual, Arts Council funded project which used local and international musicians to explore the social and cultural legacy of the potteries industry in the city of Stoke on Trent. Marc is currently an associate professor of Music at Staffordshire University in the UK.

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Carl James-Reynolds & Jupiter James-Reynolds

The LIDAR Harp: The Development and Evaluation of a New MIDI Controller

This paper describes the development and evaluation of a MIDI controller inspired by the Theremin and Harp. It consists of twelve LIDAR sensors in a row that trigger MIDI note messages dependent on the key chosen. The height of the hand above the sensor allows for expression in the form of velocity (volume) information or any Continuous Controller (CC) parameter that the user might choose. The design process was largely inspired by a prototyping approach and followed a number of iterations. The controller was evaluated using the System Usability Scale, comparing the device with a version of the device with the height control removed as well as a Korg Kaossilator. 24 subjects evaluated it with 50% of these being musicians. It performed well against the Kaossilator in terms of usability, however opinion was divided between the two modes of play on the controller. This could be due to using one dimension of control (No CC control with height of hand) which allows for polyphonic playing, whereas with two dimensions the controller acts monophonically. Immediate future work includes using a faster microcontroller to reduce latency. Additional areas to be explored include optimisation of musical expression from a user perspective, by facilitating the adjustment of the maximum range of the sensors, inversion of the height control and exploring features such as pitch bend, that would also allow the use of accidental notes in the scales.

Carl James-Reynolds has worked at Middlesex University for 26 years and is a University Teaching Fellow. Previously he has worked in valve amplifier and synthesiser repairs and customisation. He is a member of the British Computer Society and BCS AI group. His areas of interest are: Sensor and smart systems with research interests in using these as a mechanism
for teaching programming concepts both in HE and at GCSE level, where he works with schools on integrating STEM areas through the use of these technologies. Artificial Intelligence particularly in the area of interactive Genetic Algorithms and their application to a range of areas. Audio synthesis and the construction of modular synthesisers and synthesiser interfaces, with a collection of over 100 synthesisers many of which have been carefully restored.

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Jules Rawlinson

*Sounding Time and Focus in the Scientific Films of Eric Lucey*

This paper presents an overview of audio-visual approaches to composing an electroacoustic soundscape that soundtracks archival film material from pioneering scientific filmmaker Eric Lucey. The resulting work was premiered at an international film festival as part of a series of events featuring Lucey’s archive. It was subsequently redeveloped for fixed multiscreen and multichannel installation in February 2019, performed in an immersive multichannel and multiscreen form in June 2019, then redeveloped for fixed surround presentation in 2022. Lucey’s film-making was defined by his manipulation of speed, motion and scale as tools for observing behaviour using a variety of techniques, most famously time-lapse or very high-speed film, and microphotography. The work may be seen as non-narrative documentary that makes use of different sound-design methods to create unexpected points of audition which offer audiences a detailed, expressive and immersive audio-visual experience in poetic and poetic modes of documentary. Sounds accelerate with visuals into dynamic forms, then are frozen, prolonged and intensified to what’s been described as ‘unnatural and uneasy duration’. The subjects of Lucey’s films vary from cells dividing and crystals forming, insect and animal behaviour, human motion and physical process as well as exploratory studies into feedback, interference and pattern. All of these aspects provide a useful prompt for developing sonic and musical processes that support and draw attention to the visual character of the films, and these are framed and informed by and through consideration of concepts drawn from the work of Chion, Shaeffer, Smalley, Diego Garro, Myriam Boucher, Bill Nichols and others, and how they are applied to the relationship of sound to image. The main attraction in working with the Lucey archive was the combination of experimentation, invention and rigour in the films in the Lucey archive, coupled with the micro and macro character of the visual forms. The images are often alien, with glitched rhythms and geometries. The shape and texture of sonic material are informed by the abstract qualities of pattern, texture and detail in fractured crystals, billowing ripples and other elements.

This presentation picks up from my contribution to the Oxford Handbook of Sound and Imagination (Grimshaw-Aargaard et al. 2019) – ‘Playing the Inner Ear – Performing the Imagination’, where I suggested that the imagination was the most powerful synthesiser that we possess. I used a simplified ‘reverse engineering’: if we can imaginatively describe sounds we already hear then we should be able to imagine and describe sounds as yet unheard – and sonify them. Central to this is transcription – the creation of images that evoke and provoke the memory and the imagination. While this is clearly developing within neural science (‘Music can be reconstructed from human auditory cortex activity …’ – Bellier et al. PLOS Biology, 2023), progress may be slow. Here I present a case study of my own work Near and Far (at Once) which will be performed at the MANTIS festival this weekend. I describe it as an imaginary soundwalk. An acousmatic work which ‘takes us’ from the wind farm off Brighton’s coast, onto the beach, through the pier, the city, via loud and quiet places - real or imaginary - on up to the top of the Downs. A link is ‘murmuration’ whether of birds, humans, vehicles, insects, trees. The silent movie of a starling murmuration is (for me) already sounding.

Simon Emmerson is an electroacoustic composer working mostly with live electronics. He studied at Cambridge and at City University, London where he founded the electroacoustic music studio in 1975, remaining until 2004 when he joined De Montfort University, Leicester as Professor in Music, Technology and Innovation, and where he is now Emeritus Professor at the Institute for Sonic Creativity. He has been a composer and writer on electroacoustic music since the early 1970s. Commissions include: Intermodulation, Singcircle, Lontano, Jane Manning, Philip Mead, Jane Chapman, GRM (Paris), IMEB (Bourges), Inventionen (Berlin), Sond-Arte Ensemble (Lisbon), and more recently for BEAST (Birmingham) and for soloists Darragh Morgan (violin), Carla Rees (flute) and Heather Roche (clarinet). He was a first prize winner at the Bourges Electroacoustic Awards in 1985 for his work Time Past IV (soprano and tape, commissioned by Jane Manning). Writings include: The Language of Electroacoustic Music (1986), Music, Electronic Media and Culture (2000), Living Electronic Music (2007), The Routledge Research Companion to Electronic Music (2018), co-editor and contributor Expanding the Horizon of Electroacoustic Music Analysis (2016). He was founder Secretary of the Electro-Acoustic Music Association of Great Britain (EMAS) in 1979 as well as later Board member of Sonic Arts Network (to 2004) and Sound and Music (2008-2013). He was Edgard Varese Visiting Professor at TU, Berlin (2009-10) and Visiting Professor and Composer at the Western Australian Academy of Performing Arts (Perth) in November 2016. Keynotes include: ACMC 2011 (Auckland), ICMC 2011 (Huddersfield), Music Science Technology 2012 (São Paulo), WOCMAT 2012 (Taiwan), Alternative Histories of Electronic Music 2016 (London), Midlands New Music Symposium (NottFAR) 2020, EMS Network (2021).
Session 3: 2.30pm - 4.00pm

Ryo Ikeshiro & Lina Simon

Audiovisualising Climate Data: Art and Climate Action

The conference Data Art for Climate Action on sonification, visualisation and climate action took place in 2022 in Hong Kong, Graz and online. The author was the Art Track chair for the interdisciplinary conference which sought to bring together climate scientists and activists with visual, media and sound artists, and curated the exhibition DAT/ACT Data Art for Climate Action Gallery which included art works from the open call for the conference and those from invited local artists. The paper considers the strategies used in the art works and the presentation formats for the online exhibition as well as the curatorial approach for the theme of climate change and climate action. Many of the works used sonification, visualisation or audiovisualisation: the simultaneous use of sonification and visualisation. All three may be found in the field known as visual and auditory display where its objective may be more didactic (portraying the data behind climate change with clarity) and in the field of art and music where its purpose may be more creative (as visual and sound “material”). The possibilities found along the continuum between visual and auditory display on the one hand and art and music on the other hand will be discussed. From the outset, the conference was intended to include online presentations in the spirit of the theme of the conference. Due to Covid-related restrictions, in-person attendance in Hong Kong became impossible and as a result, both the conference and DAT/ACT Data Art for Climate Action Gallery only took place online. The possibilities and subtle distinctions between a website, online documentation and the online presentation of works became apparent for sound and moving image-based works and will be discussed. The exhibition and the conference as a whole considered the possibilities of art and data art in the context of climate action. As well as effective science communication, the authors state that “what is necessary is a consideration of how artists can engage with the topic of climate change and how the viewer/listener can in turn engage with such artworks.” The paper concludes with an evaluation and discussion on possible future developments.

Ryo Ikeshiro is an artist, musician and researcher. His work explores the possibilities of meaning and context presented through sound as well as its materiality in relation to digital audio and audio technologies. His output includes installations and live performances in various formats including immersive audio-visual environments, 360-video and Ambisonics, field recordings, interactive works and generative works. He was part of the Asia Culture Center’s inaugural exhibition in Gwangju, South Korea, and he is a contributor to Sound Art: Sound as a medium of art, a ZKM Karlsruhe/MIT publication. He is an Assistant Professor at the School of Creative Media, City University of Hong Kong. With a background in Music Studies, Lina Simon holds an MA in Time-based Media and one in Media Cultures and Art Theory. Her practice includes i.a. work in radio and TV. At City University Hong Kong, she is currently doing a PhD in Creative Media.
Mosaïque: Concatenative Synthesis for the Practicing Musicians

*Mosaïque* is a practice-based research project investigating the creative opportunities that Corpus-based Concatenative Synthesis (CBCS) can provide to the electroacoustic musical communities. The project is two-fold, with the development of a suite of software tools for CBCS and the creation of musical works taking advantage of aforesaid tools. By providing a comprehensive and user-friendly solution, we seek to empower musicians with CBCS applications for digital music composition, improvisation, and performance. CBCS involves the analysis of sound corpora using audio descriptors in order to create a cartography of the individual sound segments oftentimes in a two dimensions graphical representation. This time space can then be navigated using various interfaces in order to playback sound samples based on their timbral proximity. While CBCS has received scholarly attention, its application in digital music remains limited due to obstacles relating to user experience, availability, and interactivity. *Mosaïque* seeks to overcome these limitations by providing a comprehensive solution tailored to composers, improvisers, and performers. Our research-creation question could be summarized as the following: can we develop a CBCS system that embodies spontaneity, interactivity, playability, timbral richness, and computational robustness required for contemporary digital music composition? The *Mosaïque* project adopts a research-action approach, assembling a team of digital musicians who have competences in both digital music and software development. Through the alternance of artistic exploration and Max coding, we create compositions using CBCS and refine the Mosaïque software to optimize its performance, intuitiveness, and accessibility. This three-year endeavour has multiple objectives and is well underway. The development of *Mosaïque* is reaching a beta testing stage and we are looking for musical collaborations, both local and international. We have adopted a server-client architecture for our Max for Live devices and are fine-tuning our 3D visualisation of the corpora. We already have multiple navigators/players to explore the corpora, including novel granular, morphing and resynthesis players. We have been collaborating with adept musicians well-versed in extended instrumental techniques and have recorded unique sound corpora that incorporate a wide range of timbral qualities. The *Mosaïque* development process consists of iterative cycles of music creation and software refinement, incorporating valuable feedback from the research team. Our current focus is on the integration of physical interfaces allowing musical improvisation.

Dominic Thibault is an adjunct professor at the Université de Montreal. He is motivated to research the creative possibilities of digital audio in the live context. Over the years, he has developed a series of musical projects that reflect his interest for live electronics. Both as teacher and as a musician, he insists on promoting innovative music as a means of expression for all.
**Katarzyna Figat**

**Cinematic Images of Music**

The combination of music and image (visuality) is an issue that has preoccupied artists and researchers for many centuries. These relationships have acquired a variety of characters throughout the history and depending on the intentions of the creators. The emergence of the film – a new field of art – changed the specifics of these relationships because of the fact that it was a medium in which (in general) the image played a primary function, and music – initially – only an accompanying one; only with time did filmmakers begin to notice and appreciate its dramatic, narrative and, finally, form-forming potential. Starting from the synesthetic (at root) experience of Alexander Scriabin and Wassily Kandinsky, one began to look for the possibility of returning to a situation in which the film image would be a kind of reflection, one might say – a medium to visualize the music. Various experiments in this matter were undertaken in the field of almost all genres of the film: animation (f.ex. Disney’s *Silly Symphonies* or *Fantasia*), experimental film (*The Eye and The Ear* by Franciszka and Stanisław Themerson) or documentary (the more contemporary *15 Corners of the World* by Zuzanna Solakiewicz or *How to Destroy the Time Machines* by Jacek Blawut jr). The approach of the filmmakers to the mentioned issue differs both in the way of creating the visual layer (in the context of music), the intentions of the authors as well as the function of film images of music especially when they are not a closed, independent form, but appear as a part of a larger whole. The main goal of the proposed paper is an analysis and an attempt to classify the ways of cinematic imaging of music, with particular emphasis on films made by Polish filmmakers in different periods of film history.

**Katarzyna Figat** has a PhD in music arts (film sound engineering). She is an Assistant Professor at the Feliks Nowowiejski Academy of Music in Bydgoszcz, Poland as well as a lecturer at the National Film School in Łódź, where she teaches sound in film to students of animation and film editing. She works as a music supervisor and sound editor for feature films, documentaries and TV series.

**Session 4: 4.15pm - 5.45pm**

**James Heazelwood & John Macdonald**

**Soundtracking Violence: Ludic Breakbeats and Electronic Dance Music in Action Games**

Since the video game industry’s inception, the myriad of ways video games embed violence has engendered heated debates over the medium’s ostensibly harmful effects. Unlike other audiovisual media, such as movies and T.V., video games position consumers (the players) as active participants, taking the role of co-creator of an unfinished text. Players are, therefore, not merely passive observers but frequently the party responsible for carrying out the violence, which offers a rich avenue of inquiry to explore the relationship between sound and music and violence. What sounds and music might accompany and, indeed, encourage such violent participation? This paper explores the prominence of electronic dance music, and in particular breakbeats, during battle states in action games. Our term, the ludic breakbeat,
describes a style of video game scoring that draws from breakbeats from 1990s electronic dance genres. We position ludic breakbeats as functioning to support and encourage fast-paced and aggressive play styles, and we argue that the rhythmic momentum and vitality of ludic breakbeats frequent and characterize the soundworlds of innumerable games that necessitate violent ludic action for players to progress. This paper considers the broader connection between ludic breakbeats, the face-paced gameplay of racing games, and the face-paced and violent gameplay of action games. We offer an overview of our analysis of 500 cues that comprise ludic breakbeats and pay particular analytical attention to Arsi Patala's *ULTRAKILL* (2020) and Toby Fox's *Undertale* (2015). While these developers take wildly divergent approaches to violence, they are akin in their encouragement of ludic violence using ludic breakbeats. This interdisciplinary research draws and builds upon the work of scholars including James Millea, Vijay Iyer, James Buhler, Karen Collins, Bruce Johnson, Emily Ferrigno, and Stuart Borthwith. It is unlikely that conversations surrounding media violence, particularly regarding the potentially negative and positive effects of video games, will dissipate anytime soon. Given the centrality of sound and music in player engagement and interaction with the medium, it is our hope that nuanced musical research can participate in these conversations.

Growing up in the vibrant music scene of Melbourne, Australia, scholar and performer James Heazlewood-Dale relocated to Boston to study jazz double bass at the Berklee School of Music and the New England Conservatory on full scholarships. He has since performed with world-renowned artists, including Jacob Collier, Terence Blanchard, and Zakir Hussain, and currently serves as Graces Kelly's musical director. A recipient of Brandeis University's Provost Research Award, his dissertation research focuses on the intersection of jazz improvisation and ludomusicology. James' work can be read in the forthcoming Fall issue of *Jazz and Culture* (University of Illinois Press). Most recently, James was commissioned by Decca Records to write the liner notes to the CD release of *The Callisto Protocol* and appears as a scholarly guest on Adam Neely's newest video essay titled the "The Nintendo-fication of Jazz."

John MacDonald is a writer, composer, and performer based in the San Francisco area. A14er completing his studies at the Berklee College of Music and the New England Conservatory, he performed alongside Taylor Dayne, opening for Earth, Wind, & Fire, Guggenheim Fellow David Ficuczynski, and David Gilmore. He currently works as a composer and sound designer for video games. Several of his papers on percussion, dance, and embodied musicality are pending publication in the Percussive Notes Online Research Edition.

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Gabriel Dargains

*Ode to the Acousmatic Critters: Non-Spatialized Sounds in Open World Video Games.*

This presentation aims to discuss how non spatialized ambient sounds in open world video games create and might come from multimodal phenomena. Even though ambient sound has been getting more sophisticated, there is some particular interaction between spatialized and non-spatialized sounds within the auditory experience most of the open world games from 2010s decade have to offer: while most diegetic sounds are bound to in-game depicted
entities, listening carefully during a soundwalk in, say, *Dragon Age: Inquisition* (2014) or *Assassin’s Creed Origins* (2017) might call in question the location of birds and insects we hear. These critter’s sounds are often acousmatic and when the player gets to see them, they’re spatially fixed in relation to the player’s movement, meaning the sound one can hear does not belong to an entity depicted in space, thus creating layers of static and moving sounds in the virtual space. Despite the technical reason to why this happens, the tension between the two layers (barely perceived to anyone whose intent is not to listen carefully) merge these critters with the landscape, outside of the network of moving and localized non-player characters, turning them into a functional ambient sound description of the zone in question. I will argue through Lars Elleström (2010) that this tension is created by a spatiotemporal modal use of sound’s virtual time and the ambient sound loops try to establish non vectorization of time, as Michel Chion (1994) defines, that points to conventions of verbal written media. Chion’s introduction of the ‘*acoustic tableau*’ (1998) is relevant to discuss imaginary sound through verbal descriptions since its ekphrastic nature denies sound’s fixed sequentiality. So one can hear these birds as an adaptation of an *acoustic tableau* being read, not pertaining to the same localized space but inside the player’s or player character’s diegetic imagination as a composed space, from Dennis Smalley’s (1991) conceptualization of space.

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**Robin Parmar**

*Stroboscopic Rhythm as Chromaesthesia in Curgenven’s Agenesis*

Robert Curgenven has been developing his piece *Agenesis* since 2018 with concerts across Europe. Each performance saturates the performance space with stroboscopic visuals and sub-bass frequencies produced by dub plates, oscillators, and mixer feedback. The goal is to spontaneously generate coloured patterns in the audience’s perceptual field. This paper will situate *Agenesis* in the context of artistic experiments with stroboscopic epiphenomena. Synaesthesia is the involuntary perception of one sensory modality following stimulus in another. The special case of chromaesthesia, the merging of acoustic and visual sensations, has been proposed in theoretical formulations (the Pythagorean application of musical harmony to colour values), created by musical devices (the “colour organs” of Alexander Rimington), and influenced compositional practice (the “colour music” of Scriabin). The continued search for pseudo-synaesthetic affects reflects our continued fascination with multimodal sensory phenomena. Stroboscopic effects were explored in the counterculture era through concert visuals, Brion Gysin’s Dream Machine, and other experiments. Of special interest are the structural films “Arnulf Rainer” (Peter Kubelka, 1960) and *The Flicker* (Tony Conrad, 1966), which focused attention not on filmic content, but on the optical carrier. The rudimentary audio that accompanied the black and white frames (white noise and an
oscillator tone, respectively) reinforced rhythm as the primary compositional device. The film frame itself was subsequently breached by works such as *Light Music* (Lis Rhodes, 1975), *Nethergate* (Bruce McClure, 2006), and “ON | OFF” (Bas van Koolwijk, 2017). These pieces use multiple image sources, freeing light from the screen while releasing the audience from their fixed position in a perspectival geometry. Such expanded cinema invites the audience member to be a productive element in the ongoing multimodal field, part of a collective experience that enhances the possibilities of chromaesthesia. *Agenesis* continues the practice of producing maximal experiences from minimal technologies by leveraging multimodal phenomenological affects. By situating Curgenven’s work in a rich heritage, this paper will encourage further experiments.

**Robin Parmar** explores the phenomenology of place and the poetics of memory using non-narrative film, generative installations, and environmental composition. Interests include psychoacoustics, visual music, field recording, radiophonics, and epistemologies of nature. Robin has published eleven albums of music and the book *Listening to Places* (Void Gallery, Derry, 2022). He has a doctorate in Sonic Creativity from De Montfort University (Leicester, UK). Robin is currently a course director at the University of Limerick (Ireland) and is on the board of the Irish Science, Sound, and Technology Association (ISSTA). Visit robinparmar.com and stolenmirror.com.