

## Impact case study (REF3)

<b>Institution:</b> Leeds Beckett University		
<b>Unit of Assessment:</b> 33: Music, Drama, Dance, Performing Arts, Film and Screen Studies		
<b>Title of case study:</b> Aural Intimacy: generating new approaches to composition and original recording techniques for the capture of micro-space in acousmatic music		
<b>Period when the underpinning research was undertaken:</b> 2015 - 2018		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b> Dr Nikos Stavropoulos	<b>Role(s) (e.g. job title):</b> Reader in Music Composition	<b>Period(s) employed by submitting HEI:</b> 2006 – present
<b>Period when the claimed impact occurred:</b> 2015 – 2020		
<b>Is this case study continued from a case study submitted in 2014?</b> N		
<p><b>1. Summary of the impact</b> (indicative maximum 100 words) Stavropoulos's research generated new theoretical concepts, compositional approaches, a new commercial product ("Micro-Lieux"), and recording techniques for capturing micro-space in acousmatic music, inspiring emerging composers and performers in North and South America, Europe and Asia, and the creative output of internationally recognised acousmatic composers including Manoli Moriaty, Frederic Robinson and Louise Rossiter. These composers cite Stavropoulos's work as a key reference for projects including sound installations at The National Museum of Qatar and the Swiss Museum of Transport. The Quinty VR microphone developed by Stavropoulos with Metakey Acoustics Ltd eliminates set-up time for VR audio production and shortens post-production editing, making VR audio more affordable and accessible.</p>		
<p><b>2. Underpinning research</b> (indicative maximum 500 words)</p> <p>Stavropoulos uses practice-as-research methodologies to investigate the articulation of aural micro-space in electroacoustic composition. The work developed new theoretical concepts, novel recording techniques - using bespoke microphone hardware - and new uses of ambisonic technology in the composition of original acousmatic and mixed media works. The resulting research outputs, which feature in a CD and download entitled "Micro-Lieux" by Canadian label empreintes DIGITALes Ltd, and formed the basis for a successful AHRC application to the UK-China Creative Industries Partnership Development Grants scheme, are outlined in chronological order below:</p> <p><b>Ballistichory (stereo acousmatic composition for tape)</b> An aural representation and artistic interpretation of the phenomenon of ballistichory made using recordings that demonstrate characteristics of fragmentation and spatial dispersal (i.e. breakage of tempered glass) and accumulation of plastic energy (i.e. applying pressure on objects resulting in creaking sound materials). Original recordings were processed using stochastic approaches to sound design, involving random fluctuation of control data in granular synthesis. Gradually introducing increasing random ranges to initial settings resulted in sound behaviours that emulate the spatial, timbral and time structures of ballistichory.</p> <p><b>Granicus (for solo multi-percussion and tape)</b> Based on dance rhythms used in south-east Europe and Asia Minor, these rhythms are used unconventionally, presented against each other and treated using techniques like inversion, time expansion and contraction, substitution, and additive processes. The resulting score is the basis for a tape part. A recording was processed using techniques designed previously by Stavropoulos to create third-order gestural surrogacy sound materials which display aural intimacy and are used as an extension of the live performance. The result displays the characteristics of "prepared" percussion in micro-space with the possibility of fluid/continuous</p>		

spectromorphological change. Performance gestures are embellished using synthetic materials to contrast with remote gestural surrogacy.

#### **Topophilia (multichannel acousmatic composition for tape)**

Investigating affinity to place as it is experienced in aural micro-space - a listening situation only accessible through recording and/or signal processing. Described by Masterpieces of Multichannel Acousmatic Music Concert as “groundbreaking”, *Topophilia* constructs intimate aural space where texture and spatially-defined figures have broader capacity for action due to their multichannel nature. The recordings of source materials form an enquiry into capturing and working with spatiality in micro-space using bespoke hardware.

#### **Karst Grotto (ambisonic 3rd order acousmatic composition for tape)**

The title, chosen for its onomatopoeic qualities, references to geographies, and geological spatial structures and processes, reflects the sound world of the work. Recordings of raw sound materials were conducted using bespoke hardware developed in *Topophilia*. *Karst Grotto* builds on these techniques, using ambisonic technology to encode multichannel stems of raw and processed recordings as soundfield planes which can be rotated on three axes whilst maintaining a coherent plane structure.

#### **Stavropoulos, N. (2018) ‘Aural Intimacy: the case of micro-space in acousmatic music’**

This paper discussed aural micro-space, whose aural architecture is not accessible to the listener unless mediated by recording technology. Stavropoulos analyses the characteristics of acoustic space from a spectromorphological, cultural, and technical perspective, proposing new ways for working in this domain with references to two multichannel acousmatic works, *Topophilia* and *Karst Grotto*.

### **3. References to the research** (indicative maximum of six references)

**3.1** Stavropoulos, N. (2015) *Ballistichory*, [Acousmatic composition / fixed media] Available in: *Micro-lieux*, (2019), CD, Montréal, Québec: Empreintes DIGITALes. First performed: 28 March 2015, *Electronic Geographies 2*, O’culto da Ajuda, Lisbon (Portugal), with further performances at festivals and concerts in UK, USA, Mexico, Portugal, Austria, France, Greece, and broadcast on BBC Radio 3’s *Late Junction*. Awarded 1st Prize at the Open Circuit Electroacoustic Competition in Liverpool (2016); awarded an honourable mention at the International Competition of Electroacoustic Composition and Visual-music in Argentina with broadcasts of the winning works in Canada, Chile and by French national radio.

**3.2** Stavropoulos, N. (2016) *Granicus*, [Composition / solo multi-percussion and fixed media] Available in: *Micro-lieux*, (2019), CD, Montréal, Québec: Empreintes DIGITALes. First performed: 11 March 2016, International Festival of Artistic Innovation (IFAI2016), Leeds (UK), with further performances at UK festivals (Sounds Like This festival, Leeds; MANTIS festival, Manchester) and Mexico (Mexican Center for Music and Sonic Arts - CMMAS). Broadcast in seven countries including on BBC Radio 3’s *Late Junction*, and played 6100 times on YouTube.

**3.3** Stavropoulos, N. (2016) *Topophilia*, [Acousmatic composition / fixed media, 5.1] Available in: *Micro-lieux*, (2019), CD, Montréal, Québec: Empreintes DIGITALes. *Métamorphoses 2016* (2016), CD, Ohain, Belgium: Musiques & Recherches. First performed: 8 October 2016, *Visiones Sonoras 12 — 2016*, International Conference of Electroacoustic CIME/ICEM 2016: *Concierto CIME 2*, Escuela Nacional de Estudios Superiores, Morelia (Mexico). *Topophilia* has secured prizes in six international composition competitions: 1st prize, Fixed medium, 9th Destellos Competition (2016, Argentina); ICST Residence Prize, Fixed medium, Monaco International Electroacoustic Composition Competition (2016, Monaco); Special Mention, 9th Biennial Acousmatic Composition Competition - *Métamorphoses* (2016, Belgium); Prize Electronic, USF New-Music Consortium Competition (2017, USA); 1st prize, Iannis Xenakis International

Electroacoustic Composition Competition (2017, Greece); 2nd prize, Klang, Montpellier (2017, France); and Mention, Ars Electronica Forum Wallis (2018, Switzerland).

**3.4** Stavropoulos, N. (2017) *Karst Grotto*, [Acousmatic composition / fixed media, 3rd order ambisonic] Available in: *Micro-lieux*, (2019), CD, Montréal, Québec: Empreintes DIGITALes; *Métamorphoses 2018* (2018), CD, Ohain, Belgium: Musiques & Recherches. First performed: Sound Junction Autumn 2017: Nikos Stavropoulos, Firth Hall, University of Sheffield, UK with further performances at 14 concerts in the UK, China, France, Switzerland, Italy, Portugal, USA and Cyprus, plus broadcasts in Canada and France. *Karst Grotto* is an award winner in three international composition competitions: Prix Ars Electronica Forum Wallis 2018 (Switzerland); 2nd prize, Computer Space 2018 (Bulgaria); Special Mention, 10th Biennial Acousmatic Composition Competition - *Métamorphoses 2018* (Belgium).

**3.5** Stavropoulos, N. (2018) 'Aural intimacy: The case of micro-space in acousmatic music', *Proceedings of the Sound and Music Computing Conference*, 2018, SMC 2018.

#### 4. Details of the impact (indicative maximum 750 words)

Described in the press release for *New Music Central - Masterpieces of Multichannel Acousmatic Music* (New Zealand) as: "ground-breaking," many of Stavropoulos's compositions are internationally recognised as masterpieces (5.1). Stavropoulos' work has broken out of the esoteric field of electroacoustic music, reaching international audiences through mainstream broadcasters including BBC Radio 3 - his pieces are "accessible to listeners who have no experience with acousmatic music." (5.2; 5.4; 5.6)

##### Inspiring new creative production by internationally recognized musicians

According to the Australia based German audio designer and musician Frederic Robinson, "the most influential aspect of Nikos' work is his approach to spatial audio" in pieces such as *Topophilia*; explaining, "the spatial work is remarkable and, I believe, highly valuable to other practitioners in this field." (5.2) Robinson has taken inspiration from Stavropoulos's work for spatial sound installations he has been involved in, including a 28-channel spatial audio mix for the world's largest video installation at The National Museum of Qatar (2019), for which Robinson used Stavropoulos's pieces as reference tracks, and a sound and music installation at the Media World exhibition at the Swiss Museum of Transport (2016) for which "*Ballistichory* served as a starting point for this design process". (5.2; 5.3)

Dr Louise Rossiter, an acousmatic composer and performer whose pieces have won multiple international awards, takes inspiration from Stavropoulos's granular focus and "incredible sense of detail" for sound and space in composition and performance. Rossiter aims for these attributes in her own work; citing Stavropoulos's research as a "big influence," on works such as a series Rossiter has been making since 2018 titled *Music-Bodies-Machines*, and the quadriptych *Elemental*. (5.4; 5.5)

Dr Manoli Moriaty references Stavropoulos's work as "a huge inspiration," citing *Granicus* as having "inspired a lot of the processes that I use in my compositional method, both in using technology and also capturing sound with microphone techniques." Moriaty identifies Stavropoulos's work as a major influence on *Krotala* (2017) created with Alexander Pepelasis, and *Incidental Rendition* (2020) made in collaboration with Nicola Ellis, commissioned by Castlefield Gallery. In addition to the impact Stavropoulos's work has had on his own compositions, Moriaty stated that Stavropoulos's research has created "a pathway for others to follow." (5.6; 5.7)

##### Inspiring emerging composers and performers in North and South America, Europe and Asia

Elsa Justel, Director of the Destellos Foundation in Argentina, acknowledged the impact of Stavropoulos' work on her organization and emerging composers and performers: "*Topophilia ... became the centrepiece in our activities with our network of partners to champion new music*"

*and inspire new audiences in Argentina, and Latin America. The quality and far reaching impact of the work... contributed significantly to our ability to fulfil the foundation's mission and objectives, strengthened our ties with our partner organisations in the cultural sector and inspired young composers who are working with us". (5.8)*

Following the critical acclaim and awards success of *Topophilia* and *Karst Grotto*, Stavropoulos was invited to discuss his work with young composers at the University of South Florida and by The Onassis Cultural Centre (Athens), enhancing knowledge of acousmatic techniques.

Moriaty also noted that the unusually high number of percussionists requesting permission to perform works such as *Granicus* in concerts, competitions and graduation recitals was testament to what can be learnt from Stavropoulos's work. (5.6) 30 percussionists from Spain, Mexico, Switzerland, USA, Germany, Belgium, China, Colombia requested copies of the score.

### **Reducing VR production and post-production time and costs**

A collaboration between Stavropoulos and Metakey Acoustics Ltd. realised new approaches to capsule design for audio recording technology leading to the creation of the Quinty Inti and Quinty VR microphones. The new microphones and their supporting technology has made important improvements to production and post-production for Virtual Reality. Placement of the microphone is a major hindrance in VR recording, as any equipment in the frame will need to be edited out in post-production. With the Quinty, the audio recording equipment can be placed on top or below the VR video cameras significantly reducing time spent in post-production as the presence of the audio equipment does not need to be edited out of the video footage. Also, because the Quinty is a preconfigured array it is essentially a case of plug and play, saving at least two hours of set-up and derig time. Both these advances equate to considerable overall production cost savings. Similarly, the software preconfigures the files into a 5.1 format so it is a case of 'drag and drop' in post-production, again significantly saving time and production costs, and making the technology accessible to a broader spectrum of possible users. (5.9; 5.10)

## **5. Sources to corroborate the impact (indicative maximum of 10 references)**

**5.1** Press Release: University of Canterbury, Christ Church, New Zealand (2019) 'Music, but not as you know it' [Press Release] 03 May. Available at:

<https://www.canterbury.ac.nz/news/2019/music-but-not-as-you-know-it.html>

**5.2** Testimonial: Frederic Robinson, Audio Designer and Musician, 17 January 2021.

**5.3** Online Project Archive: *Frederic Robinson: Projects*. Available at:

<https://www.robinson.audio/works>

**5.4** Interview transcript: Rossiter, L. (2020) Interview with Dr Louise Rossiter, Electroacoustic Composer and Sound Artist. Interviewed by Z. Worth for Leeds Beckett University, 29 October.

**5.5** Website: *Louise Rossiter*. Available at: <http://louiserossiter.com>

**5.6** Interview transcript: Moriaty, M. (2020) Interview with Manoli Moriaty, Sound Artist. Interviewed by Z. Worth for Leeds Beckett University, 14 October.

**5.7** Online practice archive: *Manoli Moriaty: Practice*. Available at: <https://manolimoriaty.com>

**5.8** Testimonial: Dr Elsa Justel, Director of the Destellos Foundation in Argentina, 15 April 2020.

**5.9** Interview Transcript: McGregor, H. (2020) Interview with Huw McGregor, Director of MetaKey Acoustics. Interviewed by Z. Worth for Leeds Beckett University, 29 October.

**5.10** Marketing presentation: Metakey Acoustics (2020) *The Encapsulation of Microphone Technologies from the Affordable Ambisonic Microphone to the Quinty Inti and Quinty VR*. [Powerpoint Slideshow].