

Institution: University of Salford		
Unit of Assessment: 33		
Title of case study: Shaping the jazz aesthetic: innovations in the recording and production of contemporary jazz		
Period when the underpinning research was undertaken: February 2013 – May 2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Dr Brendan Williams	Lecturer in Music Technology	February 2003 – Present
Period when the claimed impact occurred: March 2014 – May 2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact <p>The recorded jazz trio has traditionally been presented as a self-balancing ensemble, performing in a supportive acoustic environment which recalls an intimate live concert. By continuing to adhere to this historic paradigm, most recordings fail to reflect evolving practices. Williams' extensive research as a producer/engineer implements innovative techniques in spatialisation and signal processing derived from electronic, electro-acoustic and popular music production to capture and present the jazz ensemble in a genre-defying way. By changing perspectives and practices of musicians and producers across the world, this research has contributed to a renaissance of contemporary jazz. This is most clearly evidenced by the band GoGo Penguin's critical and commercial success: their second album, <i>V2.0</i>, was nominated for the 2014 Mercury Music Prize and their fourth album, <i>A Humdrum Star</i>, was Blue Note Record's second highest selling album of 2018.</p>		
2. Underpinning research <p>Prior to his collaboration with GoGo Penguin, Williams recorded a string of well-received acoustic jazz releases for the Gondwana Records imprint. This included Matthew Halsall's 2011 MOBO nominated <i>On The Go</i> and iTunes' 2014 jazz album of the year <i>When the World Was One</i>. Both created a traditional jazz aesthetic by recording in large reverberant acoustic spaces, with little reliance upon modern isolation techniques. In 2013, Williams and Joe Reiser (co-producer/engineer on the cited outputs) set out to explore how methods of acoustic isolation more commonly used in pop/rock recording could be implemented in the context of part-improvised acoustic performance, reflecting GoGo Penguin's eclectic influences, ranging far beyond the world of jazz.</p> <p>Questions addressed by the research:</p> <ul style="list-style-type: none"> • How can moments of sensitive improvisation be retained when performers are acoustically isolated in order to achieve maximum detail (and potentials for processing) in capture? • In what way can acoustically isolated capture techniques be treated in the mix, both in order to spatially reintegrate parts using non-traditional methods and to extend the accepted production vocabulary of jazz? • How can these techniques be implemented in real time in order that they directly inform performance, arrangement and composition? <p>Williams worked collaboratively with the band and Reiser in the Low Four, 80Hz and Giant Wafer studios to create an aural and physical environment which was both conducive to improvisation (line of sight between the performers and detailed headphone mixes were integral) and allowed for sonic experimentation at the recording and mixing stage of the production</p>		

process. These techniques allowed the band's album, *V2.0* [3.1], to explore how instrument-specific electromechanical reverberation techniques could be incorporated into an acoustic landscape. Additionally, this enabled real-time drum re-enforcement (via analogue synthesis) to be utilised, referencing much of the electronic music which influenced the compositions.

The research conducted through the recording of their third album, *Man Made Object* [3.2], built upon the techniques explored previously while experimenting more deeply with natural reverberation techniques. The record was mixed at 80Hz Studio, where the large live room was put to use as a complex reverberation chamber. Williams/Reiser set out to establish whether sonic reference could be made to the 'classic' era of Blue Note Records output within the context of this evolving aesthetic landscape. Williams' experiences as a composer and technician facilitating performances of electro-acoustic material led to the construction of a multi-speaker array – representing the key instrumentation of piano, bass and drums – which enabled finely detailed control of spatialisation in an environment which would have functioned very differently (on an acoustic level) had the band physically performed in the space. Further research explored the use of sympathetic resonances from upright pianos as reverberation treatments (*Quiet Mind*), the wilful saturation and distortion of entire ensemble performances and extreme differentiation of perceived spatial location (*Smarra*).

In Summer 2017 the band, Williams and Reiser reconvened to record *A Humdrum Star* in Low Four [3.3]. This facility offered further potential for instrumental isolation, resulting in detail at the stage of initial capture which, previously, had been unachievable. The channel counts for the recording were significantly expanded (from 24 to 32 simultaneous inputs) to enable extended capture of real time processing. The previous albums had made extensive use of innovative spatialisation and timbral treatments, but much of this had happened in the post-performance, mixdown stages of the projects. The producers specifically wanted to explore how complex headphone mixes which allowed the band to 'play into' simulated spaces (acoustic, electromechanical and algorithmic) alongside extreme saturation/distortion processes would affect their performances at source. Following the recording stage, an adapted reverberation chamber was put into use in the mix process; the 80Hz live room was used to construct a multi-speaker, surround-reverberation chamber which was captured using binaural microphone techniques. This reverberation was integrated within the standard stereo release of the record.

GoGo Penguin's fifth (self-titled) album [3.4] was released on 4 June 2020. At this time there was a clear intention for collaboration between Blue Note and music technology giant Sennheiser to work towards a binaural release of the album. This process was stalled by the COVID-19 pandemic, but a successful 'proof of concept' was delivered by Williams and Reiser and demonstrated in an online research seminar as part of the [MuPaCT series](#).

Key findings of this research:

- A set of innovative spatialisation practices were established implementing electromechanical, algorithmic and re-amplification techniques
- Recording jazz/improvisation in isolated spaces enables the producer to resituate its aesthetic, both spatially and timbrally, without compromising the needs of (and at times directly influencing) the improvising performers
- Binaural reverberation techniques utilising multi-speaker arrays can be successfully integrated within standard stereo album releases without compromising loudspeaker representation
- Multiple binaural techniques (point source recording, re-amplification and HRTF) can successfully be combined in a creative context. There is a market for surround 'headphone only' versions of album releases, supported by collaboration between major record labels and tech companies.

3. References to the research

This research is a multi-component output, comprising the following album releases:

- 3.1. GoGo Penguin - V2.0 (Gondwana Records 2014) (REF2)**
- 3.2. GoGo Penguin - Man Made Object (Blue Note Records 2016) (REF2)**
- 3.3. GoGo Penguin - A Humdrum Star (Blue Note Records 2018) (REF2)**
- 3.4. GoGo Penguin – Untitled (Blue Note Records 2020) (REF2)**

Additionally, the outputs are accompanied by a series of conference contributions, transcripts of which are housed in the Figshare collection at <https://bit.ly/2WbOPIT>.

Selected indicators of research quality:

Williams has presented his practice-based research at a number of academic conferences: the Art of Record Production 2016 (Aalborg DM), Continental Drift 2017 (Edinburgh, UK), ARP 2018 (Huddersfield, UK), ARP 2019 (Boston, US) and MuPaCT Symposium 3 2020. Associated transcripts are available above via Figshare.

V2.0 [3.1] was nominated for the **2014 Mercury Music Prize**, seeing the band perform live on national television at London's Roundhouse (<https://bit.ly/35GiX2e>) and championed by BBC Radio 1/BBC6 Music's Gilles Peterson (<https://bit.ly/2WEMPrw>).

4. Details of the impact

Williams' transformative research has been, and continues to be, integral to the success of GoGo Penguin [3.1 – 3.4]. The band themselves and their immediate technical/administrative team have benefited hugely as a direct result of the reach and impact of the recorded music. Further to this, the team's purposefully eclectic and technologically innovative techniques have stimulated commentary, dialogue and debate amongst critics and audiences alike regarding the position and relevance of contemporary jazz. Finally, other practitioners and prominent industry figures in the field of engineering and production have noted how the techniques derived from this research have enriched and developed the sound of contemporary jazz to the extent that final outputs defy easy genre classification.

4.1. Impact on the band

Following the success of V2.0 [3.1], GoGo Penguin signed a recording contract with Blue Note Records, the world's longest established jazz label, who are backed by the Universal/Decca group. Their next album, *Man Made Object* [3.2], received positive worldwide reviews, with The Wall St Journal stating: *'To ask whether GoGo Penguin plays jazz misses the point [...] of the sense of adventure in contemporary popular music [...] They are experimentalists in pursuit of superior improvisational music. The groove matters most [...] the trio knows what it's doing and does it exceptionally well'* [5.1] and The Guardian adding *'...the captivating Smarra is a highlight for its threading of an echoey, synth-mimicking throb through a humming undertow toward a deluge of cymbals [...] plenty of house and techno fans might be surprised by how good at partying three closet-jazzers can be'* [5.2]. Subsequently, *A Humdrum Star* [3.3] peaked at number 5 in the US jazz charts in March 2018, making the album the second biggest selling Blue Note release of the year.

Over the course of seven years Williams' research has impacted directly on the band's compositional and arrangement process. The band's pianist reflected that *'both in the studio and when performing live, I've significantly adapted the way I play [...] One of the most notable examples is when we use electronic effects and preparations on the piano; the techniques Williams and Reiser have suggested have changed my approach to performance, which in turn has influenced my compositional practice'* [5.3]. Regarding the track, *Don't Go*, the pianist adds: *'Williams/Reiser had decided to bring three binaural dummy heads to the studio and I remember us exploring all sorts of interesting techniques with them, finally settling on the effect we used at the end of Don't Go when Williams physically walked the head away from the piano as I was playing and then closed the studio door to finish the piece. We discussed these ideas collaboratively, making the piano sound like it was a mechanical loop [...] We settled on the way we were going to play and record that track at the studio, shaping the arrangement and our performances 'in the moment''* [5.3].

The band's manager echoes this: *'I think one of the things which Brendan and Joe have done really well with GoGo Penguin aside from recording the tracks, mixing it beautifully and the production [...] is actually just getting the band in the studio; getting the performances out of them and helping them sort out the arrangements.'* *'Then there's things like the tuning of the drums and the preparations which Brendan contributes to, making the drums sound like a drum machine, which is an unusual tuning in this world, all of these things happen before you even start recording'* [5.4].

4.2. Commercial impact

Research embodied in the outputs has been disseminated to a large and diverse non-academic audience through the worldwide release of four albums. Notable moments such as the Mercury Music Prize nomination and the backing of Blue Note Records increased listenership enormously. As well as the band receiving regular 'spot plays', the track *Bardot* was playlisted on BBC 6 Music, which had a weekly listenership of [2,487,000](#) in 2019. In September 2018, the band performed on US public radio's NPR 'Tiny Desk Sessions' (NPR Music has approximately [5,350,000](#) subscribers).

The following table detailing numbers of record sales and streams (Spotify/Apple Music etc.) was prepared by GoGo Penguin's manager [5.4], for the purpose of this study on 6 February 2020. The figures clearly illustrate the reach of the recorded artefacts with regards to non-academic audiences.

[Text removed for publication]

4.3. Impact on live audiences

Audiences for the band's live performances have grown at an impressive rate: the trio have played festivals as diverse as Tokyo Jazz, Belgium's Pukkelpop and UK's Latitude. Recent tours have seen GoGo Penguin headline the Royal Albert Hall (5250 capacity) and develop in South Africa, South Korea, Indonesia and Russia [5.5]. The diversity of audiences for the band is notable: they have 'crossed over' the genre boundaries that typically restrict a jazz trio. GoGo Penguin's Manager states: *'In terms of Europe, in this area of contemporary jazz or 'jazz-not-jazz', whatever you want to call it, GGP are arguably the biggest, most successful band. They're the band that are on Blue Note, selling the most records, the most tickets across Europe'* [5.4].

The band's live sound engineer strives to closely represent the aesthetic language of the recorded artefacts, further broadening the reach of the research. He states: *'These drastic shifts in the space and tone mimicking the records are a marked departure from what is normally expected of a live jazz show where the aim is usually accurate and faithful reinforcement [...]* Audience members frequently come to talk to me after a gig and specifically comment on the production aesthetic of the show, asking how I am creating the sounds and effects in the mix and often commenting "it sounds like the record"' [5.6].

4.4. Impact on industry and practitioners

The recordings embody the findings of Williams' practice-based research. As a result of the recording's reach, the impact can be observed through a notable change in the aesthetic of contemporary recorded jazz. It has become commonplace to hear more detailed – close microphone reliant – capture and presentation with more prominent implementation of spatialisation techniques which do not imply traditional performance spaces or seek to present a 'documentary style' of recording and mix presentation. Owner and producer at the 80Hz studio notes: *'After observing Brendan's approach to co-producing GoGo Penguin with Joe Reiser, it's clear that while he has a comprehensive grip on the tried and test [sic] methods of the past (when recording jazz), it made sense that the forward-thinking artist gave way to more innovative production ideas and methods [...]* An example of which being the use of the Neumann KU 100 binaural head, to capture surround sound room ambience & thus provide a more visceral experience of depth and imaging in the ambient space. This method will also provide quality content for listening technologies around the corner, not yet mainstream' [5.7].

Head of Artist & Repertoire at Decca Records/Blue Note (France) describes the contribution Williams' research has made to the band's outputs and their relationship with the broader context of contemporary jazz: *'The way Brendan produces [GoGo Penguin] with Joe is an approach that I find full of innovation and modernism. Something that is not common in the Jazz World.'* *'Installation of the room, choices of the mic, their placements, choices of the plug in [...] overdubs, [...] I can feel that they are in the centre of these decisions that help to get the best raw materials from the band'* [5.8].

As a direct reaction to the band's outputs, a new sub-genre has now been coined: *'acoustic electronica'*. The term has been adopted by UK/US/European press to describe this emerging sound, for example in a Minn Post article, 'British band GoGo Penguin brings 'acoustic electronica' to the Dakota', in which the term is contextualised: *'We saw them last Friday at the Monterey Jazz Festival, where they played for a full house – about 700 people – in one of the festival's venues. People were moving and grooving to the music, a driving, danceable, accretive and infectious mix of jazz, classical, and electronic elements, with minimalist melodies and crescendos that bring crowds to their feet'* [5.9].

5. Sources to corroborate the impact

- 5.1. Review: *'Man Made Object' by GoGo Penguin review*, The Wall St Journal (3 February 2016). Available at: <https://figshare.com/s/4f7da112facacd5b1c1> (4.1)
- 5.2. Review: *'GoGo Penguin: Man Made Object review – club-ready electronics and jazz'*, The Guardian (11 February 2016). Available at: <https://figshare.com/s/2e85b0ab9a5b3c17a8b3> (4.1)
- 5.3. Testimonial: Pianist, GoGo Penguin (May 2020). [Text removed for publication], on the impact on the band's compositional and arrangement process (4.1)
- 5.4. Testimonial: Manager, GoGo Penguin (October 2020). [Text removed for publication], on the impact on the band's recordings (4.1), details of record sales and streams (4.2) and impact of the band in Europe (4.3)
- 5.5. Live Performance Data (February 2016 – December 2019). Available at: <https://figshare.com/s/b60428dc94acefe76d24>, citing live audience figures 2016 – 2019 (4.3)
- 5.6. Testimonial: Live Sound Engineer, GoGo Penguin (May 2020). [Text removed for publication], on creating the production aesthetic (4.3)
- 5.7. Testimonial: 80 HERTZ Studios (May 2020). [Text removed for publication], on the use of more innovative production ideas and methods (4.4)
- 5.8. Testimonial: Decca Records (January 2021). [Text removed for publication], on the contribution to the band's outputs and in the broader context of contemporary jazz (4.4)
- 5.9. Review: *'British band GoGo Penguin brings 'acoustic electronica' to the Dakota'*, Minneapolis Post (21 September 2017). Available at: <https://figshare.com/s/311e67e58eb8dbaabe59>, on the coining of a new sub-genre (4.4)