

# **Pushing the Boundaries: Digital Impacts upon Jazz**

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## Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

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## **Pushing the Boundaries: Digital Impacts upon Jazz**

### **Abstract**

The rapid development of audio technology, particularly in the last fifty years, has changed the way music is composed, produced, consumed and received. The domination of the traditional meta-genres, classical, jazz and folk, is increasingly challenged by postmodern thinking and new methodologies. Centuries of development in techniques, education, culture and practice are in danger of being rendered obsolete. Changing practices for musicians raise philosophical arguments touching on the meaning of the musical work, authenticity and genre itself. This research project is a creative practice-led exercise in applying digital audio technology within the restraints of jazz as a genre. Recordings of works including harmonic, rhythmic and timbral characteristics typical to a broad definition of jazz, have been manipulated digitally with synthesis, looping and sampling. Results have indicated the importance of the timbral voice in signifying genre but the creative application of harmonic and rhythmic factors can allow new timbres to express generically. The success of the hybrid approach to the music also lies in the definitions used to describe the basic comparative criteria, which are themselves contestable. Philosophical considerations can open space for new timbres, new ways to contextualise, and new ways for musicians to interact and improvise against the language of genre.

## INTRODUCTION

The aim of this practice-led research project is to approach the question of rapidly developing technology in the world of music as a music practitioner. In seeking a creative engagement between new technology and the genre in which they work, artists run the risk of alienating audiences and losing touch with their traditional community. As the artist is always seeking to express the world as they perceive it, they must at some level grapple with new challenges. This project is drawing upon the Deleuzian concepts of territory and nomad to bring a different perspective to the jazz musician as a user of digital musical technology. This project is not a critique of Deleuzian philosophy but only engages with the concepts as they apply to the creative work of the practitioner. In the unfolding of some of the issues of jazz history, this project does not aim to provide a comprehensive narrative but only seeks to find context for the voicings and signifiers of the genre as they have emerged in that history.

### **Jazz**

The research question contains three elements: genre, jazz and technology. For the purposes of the question these broad terms need to be defined to suit the scope and thrust of the project. Jazz is one three meta-genres (with folk and orchestral art music) formed out of the acoustic history of the western music world. Jazz is the youngest of the three and importantly can be considered a hybrid of folk and Western art music. Jazz contains the height of Western harmonic constructions with extended chords and scalar invention, with the combination of highly technical musicianship and folk roots, articulations and rhythms. Many variations and sub-

genres exist within its milieu and therefore any attempt to examine the genre needs to be specific. Definitions of jazz themselves are contestable. However, for the purposes of this question, two definitions are practicable. Wynton Marsalis, the prominent jazz trumpeter, composer and cultural advocate, proposed the following definition in a magazine interview:

It is a combination of different elements, a shuffle rhythm, walking bass, the blues, an improvised, coherent solo, a certain percentage of African or Afro-Cuban music and romantic elements taken from the American popular song.<sup>1</sup>

Kevin Whitehead defines jazz as:

a music of rhythmic contrasts, featuring personalised performance techniques... involving improvisation. It mixes folk and art music... an aesthetic that reveals African American character, no matter who is playing it, or where. Jazz is less about what materials musicians play than what they do with it, work[ing] variations on it by artfully distorting its rhythms, its melody, and even its form.<sup>2</sup>

The Marsalis definition assumes that jazz has an axiomatic structure which, for this project, would merely include technology as an add-on. In contrast,

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<sup>1</sup> McElhinney, Peter. 'Wynton Marsalis Speaks Frankly about the Controversy Surrounding His View of Jazz.' *Style Weekly*, 1 January 1980. <https://www.styleweekly.com/richmond/wynton-marsalis-speaks-frankly-about-the-controversy-surrounding-his-view-of-jazz/Content?oid=1391667>. Accessed 04/06/2018.

<sup>2</sup> Whitehead, Kevin. *Why Jazz?: A Concise Guide*. Cary, US: Oxford University Press, 2011, 5.

Whitehead's definition is suggestive of jazz's nomadic character, emphasising the plasticity of performance over scripted notation. Both definitions highlight rhythm, performance, improvisation and cultural contexts as salient features. The development of jazz has been inextricably linked with the racial history of the African-American people, slavery, segregation and immigration. It is important to note that this research question does not seek to engage with political nuances of the racial and historical contexts. This question is focussed on the practical ways in which a music practitioner might reconcile current digital technology with the genre identity of jazz. Jazz is a global genre and there are significant other cultural contributions in various expressions of the genre around the world.

It is interesting to note that there are no timbral parameters mentioned in either definition. Yet, jazz has a rather strictly constrained set of instrumentation. Brass horns and drumming came out of marching bands. The trumpet and saxophone became privileged for their flexibility in soloing and their acoustic power necessary to be heard in their performance environments. The piano had already proven that it was adapted from Western art music to bar rooms and private homes. As a complete instrument able to provide its own rhythmic, harmonic and melodic elements in the right hands, the piano has also been a valuable compositional tool. For example, Duke Ellington is a renowned composer as well as a bandleader and pianist.

## **Genre**

Genre operates in the marketplace at its most base level as a handy descriptive tool, useful in differentiating musical products to different potential audiences. Shuker refers to

the process of meta-genres breaking into sub-genres for marketing purposes.<sup>3</sup>

Postmodernism underlines the complexity of history and society as many smaller narratives in opposition to modernism's meta discourse. Music has responded to postmodernism by blending and re-blending genre and styles to create ever shifting and evolving genres and sub-genres. Musicologists suggest that genre can be used to describe socially constructed or external factors in music - (see Moore, Tagg or Krims).<sup>4</sup> Kallberg explains that genre shapes a social contract between musical conventions and gestures, and the audience receiving or interpreting them in kind.<sup>5</sup> Genre is about conforming to expectations or, in other words, for the music practitioner, genre represents an audience. Krims indicates in popular music genre is essential in performance and listening and therefore functions as a potential relation between artist and audience.<sup>6</sup> This chimes in with Whitehead's definition in that it is dependent upon what is done musically to the material that would proclaim it as jazz. The inherent subjectivity in his point implies that there are right or wrong things that can be done to the material. In this way genre touches upon authenticity and cultural ideologies (see Walser in regard to heavy metal and young, white masculinity<sup>7</sup>). Notions of authenticity have often been tied to blues music from which jazz draws significant heritage. Coupled with gospel music and christian church influences, terminology of religious righteousness in reference to performances (descriptions of 'testifying' for example) only reinforce authenticity notions.

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<sup>3</sup> Shuker, Roy. *Popular Music: The Key Concepts*. New York: Routledge, 2nd ed. 2005.

<sup>4</sup> Moore, Allan F. 'Categorical Conventions in Music Discourse: Style and Genre'. *Music & Letters* 82, no. 3 (2001): 432–42.

Tagg, Philip. 'Gestural Interconversion and Connotative Precision.' *Film International*, 2005.

Krims, Adam. *Rap Music and the Poetics of Identity*. Cambridge University Press, 2000.

<sup>5</sup> Kallberg, Jeffrey. 'The Rhetoric of Genre: Chopin's Nocturne in G Minor'. *19th-Century Music* 11, no. 3, 243 (1988): 238–61. <https://doi.org/10.2307/746322>,

<sup>6</sup> Krims, *Rap Music and the Poetics of Identity*.

<sup>7</sup> Walser, Robert. *Running with the Devil Power, Gender, and Madness in Heavy Metal Music*. Music Culture. Middletown: Wesleyan University Press, 2013, p.109



In terms of this research, as a practice-led, creative project, genre is the point of reference that the technology either embraces, bends or breaks from. Tagg refers to genre synecdoches as 'indexical sign types' that allows the audience to associate references from styles, times and places.<sup>8</sup> Marsalis fixes jazz in the 'American songbook' and with African or Afro-Cuban elements and therefore there are rhythmic and sonic synecdoches within that tradition. Technology in digital music is able to carry its own synecdoches such as sample loops, filter sweeps and oscillator wave tones. These sonic signals are obviously in heavy use in genres such electronic dance and techno. For the musical practitioner, the question arises about how to use selected jazz synecdoches to combine with technological processes, including their associated technological synecdoches, in creating something possibly new and becoming something else. The point of origin of the work can operate as specifying its heritage. Would the ontology of a resultant piece be jazz laced with technological features or, a techno piece with jazz inflections? A third space would be the possibility of hybrid forms. Hybridization with jazz has been tried before, notably in the 1920s with Milhaud's *La Creation du Monde*, and in jazz fusion (with rock music) by Miles Davis on *Bitches Brew*,<sup>9</sup> 1970.

Genre is also closely allied to the concept of tradition. Tradition operates as a set of beliefs and practices across time that form cultural context and a framework for interpretation. Genre and tradition both construct form and continuities of practice that provide reference points for the practitioner and audience to engage with each other. The poet T.S. Eliot's essay in 1919, 'Tradition and the Individual

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<sup>8</sup> Tagg, Philip. 'Gestural Interconversion and Connotative Precision.' *Film International*, 2005.

<sup>9</sup> Davis, Miles. *Bitches Brew*. Columbia Records, 1970..

Talent',<sup>10</sup> argued for a sense of the past in the present, an historical presence that pervades the new work. Eliot's perspective is based on a past that is ordered, allowing for the construction of canon and a grand narrative that is consistent with a modernist view. Over generations jazz has formed its own traditions including improvisational practices, certain forms and tonalities. In his definition of jazz, Marsalis has much in common with Eliot's thesis. Marsalis enshrines particular features as non-negotiable elements without which jazz is lost. David Ake in his discussion of jazz cultures<sup>11</sup> compared a recorded album by Wynton Marsalis, *Marsalis Standard Time Volume 2: Intimacy Calling*,<sup>12</sup> 1992, with a work by Bill Frisell, *Have a little Faith*, 1993).<sup>13</sup> Both works revisit past music. Ake found that Marsalis placed himself within tradition in a way that reflected a neoclassical and modernist perspective. Frisell, according to Ake, exhibited a form of postmodern hybridity. Both works treat tradition differently, demonstrating that tradition itself is not fixed but is produced by ourselves as and how we participate in it. Tradition evolves through its continued use.<sup>14</sup> This practice-led research has set out to question traditions found in jazz and apply the digital technology for possible evolution, hybridity and departure.

## Technology

The third element of this project is technology. Specifically, this project is considering the digital software that is prevalent in the recording and processing of

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<sup>10</sup> Eliot, T. S. 'Tradition and the Individual Talent'. *Perspecta* 19 (1982): 36–42.

<sup>11</sup> Ake, David. *Jazz Cultures*. Berkeley, USA: University of California Press, 2002.  
<http://ebookcentral.proquest.com/lib/uwsau/detail.action?docID=223039>.

<sup>12</sup> Marsalis, Wynton. *Standard Time, Vol. 2: Intimacy Calling*. Columbia Records, 1991.

<sup>13</sup> Frisell, Bill. *Have a Little Faith*. Elektra Nonesuch, 1992.

<sup>14</sup> Gadamar, H. *Truth and Method*. Translated by J. Weinsheimer and D.G. Marshall. New York and London: Continuum, 2003, p.293

music. This software would include arranging and editing abilities as well as synthesis for timbral production, filtering, delays and other sonic effects, mixing and mastering of multi-channel recorded work, as well as direct compositional tasks of non-notated aspects. All this demonstrates the ability of this technology to be used in the creation of an artefact from concept to completion.

Music has always been technologically mediated even if that technology was the instrument itself. However, with the advent of the microphone and loudspeaker the transmission and reception of music changed considerably. In the 1930s, Walter Benjamin<sup>15</sup>, discussing film and photography as opposed to painting, considered that mechanical reproduction produced a loss of aura, a sense of wonder, from the artwork. Benjamin recognized, however, that a democratisation of art as technology allowed for wider distribution of and participation within art. His arguments are as applicable to music as the visual arts. Theodor Adorno argued that technology would allow the commodification of music and affect the ('regressive') listening of music<sup>16</sup>. Such arguments are still resonating today. Adam Krims<sup>17</sup> discussed how technology enabled the repackaging of classical music for different purposes: relaxation, lifestyle, ambience and so on. Physically impossible collaborations have occurred with the aid of digital technology. For example, in 1991 Natalie Cole released a duet with her deceased father, Nat King Cole<sup>18</sup> and, in 2006,<sup>19</sup> concert

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<sup>15</sup> Benjamin, Walter. 'The Work of Art in the Age of Mechanical Reproduction'. In *Illuminations*, edited by Hannah Arendt. London: Collins/Fontana books, 1973.

<sup>16</sup> Adorno, Theodor W. *Aesthetic Theory*. London, UNKNOWN: Bloomsbury Publishing, 2013. <http://ebookcentral.proquest.com/lib/uwsau/detail.action?docID=1224252>. Accessed 15/06/2018

<sup>17</sup> Krims, Adam. 'Marxism, Urban Geography and Classical Recording: An Alternative to Cultural Studies'. *Music Analysis* 20, no. 3 (2001): 347–63. p.352

<sup>18</sup> Cole, Natalie. *Unforgettable... With Love*. Elektra, 1991.

<sup>19</sup> French, David. 'Ray and Basie: We Meet at Last—Two Legends Collaborate via Digital Technology'. *JazzTimes* 36, no. 10 (2006): 29–30.

vocals of Ray Charles from the 1970s was married posthumously to new Count Basie Orchestra arrangements.<sup>20</sup> Such manipulations must raise questions about the authenticity of the material. The source performances were real but the representation of a new performance event is artificial, or simply virtual. Sterne considered the format and evolution of the MP3 file as the most ubiquitous form of music packaging today, its mobility and its impact on listening standards and expectations<sup>21</sup>. As Adorno foresaw, commodification has indeed taken hold. Wider distributions and applications of music in society cater for, and to some extent create, new desires which, in turn, provides impetus for further assemblages.

For the purposes of this project the relevant aspect of the technology is about the studio as an instrument, a compositional tool, which arose from the tape manipulations in the 1940s and 1950s. In an interview in the 1970s, Brian Eno said that a studio door should have a sign that says, 'This Studio is a Musical Instrument' (as cited by Steve Savage<sup>22</sup>). Digital technology has progressed to reducing the studio to a computer, possibly a laptop, and therefore resembling an instrument more and more. Recording allowed for the documentation of non-notational music such as improvisation. The ability to compose was democratised. Savage<sup>23</sup> writes about construction and repurposing music through technology. Savage notes the effect on different roles<sup>24</sup> as technology becomes available. Composer, producer, engineer and musician can reside in one person and this research project has been conducted on that basis. Current audio technologies

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<sup>20</sup> Charles, Ray, and Count Basie Orchestra. *Ray Sings, Basie Swings*. Concord/Hear Music, 2006.

<sup>21</sup> MP3 is a compressed format of audio and therefore has an inherent loss of quality.

<sup>22</sup> Savage, Steve. *Bytes and Backbeats: Repurposing Music in the Digital Age*. Tracking Pop. Ann Arbor: University of Michigan Press, 2011. p.9

<sup>23</sup> *ibid*, p.3

<sup>24</sup> *ibid*,

have confused and disrupted traditional hierarchies: the composition versus performance, the art versus the craft, the artist versus the artisan, composition versus improvisation. Jazz had already questioned such relationships. According to Tanner and Gerow,<sup>25</sup> in classical music 'how the work is performed is never as important as the work itself. In jazz, the work itself is never really as important as the way in which it is played.'

In his work on rock music, Steve Jones asserts that popular music would not exist in its form without technology<sup>26</sup> but the inverse can also be argued. Particular technologies exist because of their use in music. Many devices are created for the performance of electronic music, such as, for example, beat pads and samplers. This points to a never-ending argument about the benefits and dangers of technological development, not only in music, but in society writ large. Technological determinism would have that the technology drives the cultural experience and therefore we are all eventually doomed to some form of machine dominance. Alternatively, technology is constructed through social pressures and the wish to fulfil human desires. The truth surely lies in the middle, an ongoing dance of human desire and capabilities. As Alex Ross argued in an essay on technology in recorded music, 'the machine is a mirror of our needs and fears.'<sup>27</sup>

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<sup>25</sup> Tanner, Paul. *A Study of Jazz*. 7th ed. Dubuque, Iowa: WC Brown, 1992, 251.

<sup>26</sup> Jones, Steve. *Rock Formation: Music, Technology, and Mass Communication*. Foundations of Popular Culture ; v. 3. Newbury Park, Calif: Sage, 1992.

<sup>27</sup> Ross, Alex. 'The Record Effect', 30 May 2005. <https://www.newyorker.com/magazine/2005/06/06/the-record-effect> Accessed 27/10/2019

## PHILOSOPHICAL BACKGROUND

Much of this research project has hinged upon the Wynton Marsalis definition of jazz. In practical terms it provides a ready-made container in which the created music might be placed or from which it might be removed. The definition quantifies aspects of this particular genre and provides a framework to test affective and subjective characteristics of the project. It also serves as a point against which to react. The very clarity of the definition that scaffolds the project, limits the very scope and meaning of the genre.

I will now unfold a predominantly Deleuzian philosophical framework to consider the connections and transformations that arise when technology impacts acoustic music practices. Jazz is one of the three meta genres (classical/orchestral, folk, and jazz) of western music that arises from the acoustic tradition. Jazz is the youngest genre and is a hybrid of the other two. Jazz features the height of Western art music's harmonic and melodic sophistication, and the cultural roots and memories of folk, blues, African, Caribbean, spiritual and work chants.

Deleuze posits the term 'territory' as a geographical boundary or identity marker and argues that as soon as a territory is formed it is always already undergoing deterritorialization. In the same vein, jazz can be considered as a Deleuzian cultural territory, defined as a 'mobile and shifting centre that is localisable as a specific point in space and time.'<sup>28</sup> The concept of territory, and its

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<sup>28</sup> Message, Kylie. 'Territory'. In *The Deleuze Dictionary*, edited by Adrian Parr, Rev. ed., 280–82. Edinburgh: Edinburgh Univ. Press, 2010.

deterritorialisation, enables me to consider how jazz can be conceived as a changing set of circumstances and heterogeneous elements that interact in particular ways, reacting to various forces. The word 'jazz' is as explicit or as vague as the word 'Asia', and both connote a fluid collection of people, and events that are constantly evolving and changing. Deleuze and Guatarri saw territory as expressed by the movement of people rather than defined by its borders.<sup>29</sup> The history of jazz coincides with the movement of its originating people, germinating in West African rhythms and cultural practices, brought through slavery to the Americas, finding root in the Mississippi delta and spreading outwards through migration. Locations signified jazz moments: New Orleans conflated with Louis Armstrong and Jelly Roll Morton, New York Harlem was linked to Duke Ellington, Chicago with Count Basie. As Deleuze and Guatarri used the example of a bird's refrain to both mark territory and define its function, leading bands and individual players developed signature sounds and tones, marking out their own territory within the jazz landscape. Ensembles had signature tunes - Duke Ellington's 'Take the A Train', Count Basie's, "One O'Clock Jump, for example. Such tones and songs not only set the sub-territories that the artists were working in (such as Dixieland, swing, jump, bebop), but set out how the ensemble or artist would function. A trio varies from a quartet and is vastly different to a big band. A recording would stake a claim of ownership on the music used, a challenge to other artists to invade and reclaim.

Within all this variance there are always heterogenous, organising principles that are based on social networks, shared cultural practices and largely common technologies. In

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<sup>29</sup> Deleuze, Gilles, and Felix Gattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Minneapolis: University of Minnesota Press, 1987.

this way, genre can be regarded as a territory. Shifting populations coalesce periodically around the centre as machinic assemblages, acting as a 'collective assemblage of enunciation,'<sup>30</sup> that continues to affirm and reaffirm the territory in its current evolving state. These assemblages are stabilised by the territorialisation and reterritorialisation of the functioning genre around its heterogenous features. Deterritorialisation allows for the creative and transformative movement within the assemblage. It is the potential for immanent change. The continuous contrapuntal lines of a Dixieland band is deterritorialised by the rise of the talented soloist. Sonic space is then created for the soloist to occupy. Bands are then reorganised into timbral sections to accommodate this shift. Economic and technological flows produce differently formed (often smaller) bands and the music again reorganised to adapt. The transformative vectors of deterritorialisation both allowed and proposed the development of jazz while restating and reaffirming its territory.

The Marsalis definition of jazz used in this research project is both prescriptive and implicitly proscriptive. It is the territorialising of jazz as a set of axioms and, as such, it is a claim that jazz is majoritarian. In the Deleuzian sense, majoritarian means to be dominant, not necessarily numerically, but in a position of power and status. It means to be a constant rather than a variable. The term majoritarian and minoritarian arose from postcolonial theory and the use of language<sup>31</sup> and is therefore political. Jazz developed out of folk traditions from people who were subjected to slavery and colonisation. Its developmental history is minoritarian, politically and racially centred. Early jazz operated in the environment of bars, speak-easys (illicit establishments) and brothels rather than the concert hall. The music was always minoritarian to Western art music and the European canon.

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<sup>30</sup> Ibid. p.88

<sup>31</sup> Conley, Verena. 'Minoritarian'. In *The Deleuze Dictionary*, edited by Adrian Parr, Rev. ed., 175–77. Edinburgh: Edinburgh Univ. Press, 2010.



The music made its way through technology, allowing its distribution into the mainstream and on to the concert stage. Marsalis's definition is an attempt to claim majoritarian status and is understandably rooted in African-American pride and history, asserting and celebrating achievement over racial struggle, rightly claiming the community's legacy in the face of the global spread of the genre. However, such a claim privileges the stated axioms and therefore freezes the genre in a moment of time. Majoritarian status is a constant and Marsalis excluded the avant-garde, free and fusion styles of jazz. The so-called jazz wars of the 1990s was almost inevitable after the expression of such a definition.

And yet jazz maintains a deterritorialising line of flight at its very centre. As Marsalis himself notes, one of the hallmarks of jazz is improvisation. This very requirement asks of every performance to take the territorialised (stable) features of form, melody and harmonic structure of a piece of music and deterritorialise into spontaneous creation. Improvisation is deterritorialisation, bringing together the creative potential and energy flows of the assemblage of players, musical form, experience, audience and technology, allowing for new organisations and relationships between the interacting parts. Undoubtedly technology acts as the means to an external deterritorialising line of flight upon music along with many other desires and social flows.

## METHODOLOGY

This research is an arts-based, practice-led project that is asking how the musical practitioner, as attached to community as the engagement in genre attaches to community, engages with the new disruptive forms of ‘musicking’ via technology. This arts-based, practice-led research is based on the notion from Heidegger that knowledge is gained through material handling,<sup>32</sup> and Estelle Barrett’s assertion that knowledge is experiential.<sup>33</sup> True objectivity is elusive and therefore arts-based research must be grounded in critical thinking and reflective practice. There is both an involvement in the creative process and a detachment from it that exists in dialectical tension (see Csikszentmihalyi as cited by Aziz<sup>34</sup>). Schön expands on this concept with a methodology of reflection-in-action and reflection-on-action<sup>35</sup> which provides a framework of constant reassessment within the creative process and at a distance. Further, structure of the methodology is contained within Smith and Dean’s application of a reiterative cycle of action and reflection.<sup>36</sup>

As qualitative research, the practice-led project is a hybrid of forms. It is clearly both auto-ethnographical and its own case study. Working alone, this project

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<sup>32</sup> Heidegger, Martin. *Being and Time: A Translation of Sein Und Zeit*. SUNY Press, 1996.

<sup>33</sup> Barrett, Estelle. ‘Experiential Learning in Practice as Research: Context, Method, Knowledge’. *Journal of Visual Art Practice* 6, no. 2 (2007): 115–24. [https://doi.org/10.1386/jvap.6.2.115\\_1](https://doi.org/10.1386/jvap.6.2.115_1).

<sup>34</sup> Aziz, Tahera. ‘Shifting the Frame: From Critical Reflective Arts Practice to Practice-Based Research’. *Journal of Media Practice* 10, no. 1 (April 2009): 69–80. [https://doi.org/10.1386/jmpr.10.1.69\\_1](https://doi.org/10.1386/jmpr.10.1.69_1).

<sup>35</sup> Schön, Donald A. *The Reflective Practitioner: How Professionals Think In Action*. New York, USA: Basic Books, 2008. <http://ebookcentral.proquest.com/lib/uwsau/detail.action?docID=1113868>.

<sup>36</sup> Smith, Hazel, and R. T. Dean. *Practice-Led Research, Research-Led Practice in the Creative Arts*. Research Methods for the Arts and Humanities. Edinburgh: Edinburgh University Press, 2009. <http://ezproxy.uws.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=315978&site=ehost-live&scope=site>.

uses Savage's term 'the recordist'<sup>37</sup> as the single practitioner managing several discrete roles in the production of a recorded musical artefact: musician, composer, producer, Digital Audio Workstation (DAW) operator and editor/arranger. As the resultant artefact is created and perceived sensorily, it is phenomenological. New sounds through new technology is phenomenologically different simply because it sounds different, as pointed out by Demers<sup>38</sup>. To extrapolate in terms of genre, genres that sound different are necessarily phenomenologically different. Therefore, phenomenology provides a conceptual research framework to consider practice-led projects. As a creative work, this project intentionally allows for serendipity to be a part of the research. Makri and Blandford<sup>39</sup> point out that serendipity is not blind luck but a valuable concept that opens up new possibilities and pathways. Serendipity requires the skill and knowledge to create the opportunity, to recognise the potential, and the ability to utilise the unexpected in reaching new insight. It requires an open frame of mind essential for creativity.

Because of the ubiquity and availability of sophisticated digital software (and hardware) the project has focussed on largely mainstream products. There are literally thousands of products from DAWs to plugins (software that emulates existing effects or instruments, or new effects and instruments, within a DAW) to choose from. To be consistent with Whitehead's observations that jazz being more about what one does with the material than the material itself, the process of using the technology is more pertinent than which particular software was chosen. The

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<sup>37</sup> Savage, Bytes and Backbeats, 45

<sup>38</sup> Demers, Joanna Teresa. *Listening through the Noise: The Aesthetics of Experimental Electronic Music*. Oxford & New York: Oxford University Press, 2010.

<sup>39</sup> Makri, Stephann, and Ann Blandford. 'Coming across Information Serendipitously – Part 1: A Process Model'. *Journal of Documentation* 68, no. 5 (31 August 2012): 684–705.  
<https://doi.org/10.1108/00220411211256030>.

main DAW used was Pro Tools (Avid software) with Native Instruments Komplete as the major virtual instrument (including sample based acoustic simulations, synthesisers and ensembles). Pro Tools comes with standard effects plugins bundled but this set up was augmented by further Waves Audio plugins, GRM effects and some other single function plugins for experimentation and exploration. The hardware setup comprised of a desktop computer with an external audio interface, a Roland digital stage piano, Gretsch semi acoustic guitar and microphones. The studio as such was a single room that functioned as performance space and studio control room combined. This amalgamation of territory coincides with the consolidation of roles/functions that is expressed in the figure of the recordist.

Early exercises in this project centred on new timbral possibilities that might be applied within the jazz context. New technology has expanded the sonic possibilities through forms of synthesis and digital sampling. Synthesis involves timbral creation from oscillators producing various shaped wave forms, followed by further blending, filtering and harmonic structuring. Sampling involves taking small pieces of audio material and assigning pitch and frequency modulations. Granular synthesis uses very small slices of audio samples, grains, of between 1 to 50 milliseconds in duration, to reorganise the original sound into something sonically new. This project has employed synthesis, sampling and granular synthesis as tools to manipulate sound within a jazz context. The timbral aspect of the project was perhaps the simplest and most immediate manipulation that offered itself. Musical genres are obviously signified (but not only) by sound. In jazz, a few notes of a saxophone, a muted trumpet, certain styles of chords or scalar phrases on the

piano, or an upright bass and brushes used on a drum kit can immediately outline the territory for the listener.

Musical Instrument Digital Interface (MIDI) is technical standard that describes the communications protocol, digital interface, and electrical connectors for digital instruments and computers in the recording, editing and playing of music. MIDI editors in DAWs such as Pro Tools allow midi notes to directly inserted and arranged through a graphical interface. The music can be directly played in as a performance but doesn't have to be. The notes can be copied, pasted, transposed, or deleted with ease. These notes are assignable to any MIDI instrument regardless of what timbre is used. For example, a part played on a keyboard can be a bass line, saxophone lick, or even a drum part, let alone a tone that is entirely synthesised. Many MIDI instruments now use samples of acoustic instruments as their timbral base. Discerning the difference between a recorded acoustic performance and a constructed MIDI part can be quite impossible. MIDI allows a performance to be captured with all the performative discrepancies<sup>40</sup> with editing abilities of a word processor. A wrong note can be quickly corrected or discarded. Audio recordings and samples are more limited in the way they can be edited. A wrong note within a chord in audio cannot be separated from the entirety of its recording. To remove one note is to remove all other concurrently sounding frequencies at that point. This project uses both audio recordings and MIDI techniques for the possibilities they both offer.

The applicable definitions of jazz both emphasise the performative nature of the genre so it has been important to place performance in contrast with the technology. The

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<sup>40</sup> Keil, Charles. 'Participatory Discrepancies and the Power of Music'. *Cultural Anthropology* 2, no. 3 (1987): 275-83.

key aspect of the project is testing how the practitioner reacts to and combines with the technology and this perhaps most keenly done through performance and improvisation. The majoritarian aspects are the expected forms and norms of the genre, the axioms as set out by our definitions. On this scale the technology and its application is minoritarian, attempting to usurp the established genre language. The technology offers lines of flight to disrupt the majoritarian forms and timbral norms, allowing for new relations to be made for the listener and performer. As genre addresses audience expectations, elements of the genre were required within each piece of the suite to be juxtaposed against technological disruption. Such elements could comprise of a standard AABA chorus format, jazz harmonic conventions including sophisticated and extended chords, and instrumentation within the ensemble.

This project has used two performative instruments, the (digital) piano and electric guitar. The use of guitar in this research has been significant for what the guitar is and how it is used. The guitar, as it developed from the acoustic version to the electric, highly accessorised instrument is today, is the first mainstream, widely accessible and widely used, instrument of vast timbral capability. The piano has not followed, although the piano keyboard has become the standard interface for MIDI controlled instruments and therefore timbrally limitless. Using Guitar Rig through Native Instruments Komplete software within the DAW has made available a wide range of amps and effect simulations. The software allows custom building of componentry into configurations to suit the user's purpose. Standard inclusion range from delays, filters, equalisation (EQ) units to modulation and granular synthesis. Low frequency oscillators (LFOs) can be used to manipulate controls of other effects to gain a machine variance of the sonic effect being produced. The technological variance attempts to insert machinic performative discrepancies thus allowing for the chance of more random harmonic and resonant constructions between performers and technology. More importantly, having a Guitar Rig effect on a DAW channel allows any audio as an input. Therefore, all the possible effects and configurations can be as easily

applied to an audio piano/bass/drum performance as to a guitar. This has been important in challenging the expected sonic norms from the applied instrument even as song form, ensemble structure or harmonic and rhythmic conventions are otherwise being followed within the piece. Given the equipment and skills available, the most common ensemble starting point for this project has centred around a quartet of drums, bass, piano and guitar.

## **The Suite**

### *Lines*

The creative structure of the practice-led research project was to come up with a suite of recorded pieces of music. The title “Lines” is in reference to Deleuzian concepts of potential for movement in becoming. The recording process in of itself would be highly technologically invested. According to the question posed each piece would be tied to jazz, or take a jazz approach, consistent with the definitions outlined earlier in the exegesis. This would look at factors like timbre, rhythmic patterns and feels, instrumentation, improvisation, chordal sophistications and forms. Early thinking in the project centred around timbral variations and whether the quality of genre would remain if the expected instruments were re-voiced. However, other factors of disruption could be entertained through the potential of looping and sampling. The separate works could be experimental scraps or more coherent and complete musical artefacts. Many sessions (working files for recording, mixing, arranging) were opened up in Avid’s Pro Tools DAW software but were filtered down to a dozen main files to work on. Some of these files produced more than one recording. Final selection of tracks to include with the research project further reduced the released output. An auto-ethnographic outline of each file follows.

Although the filenames have been numbered the files themselves are not necessarily in chronological order. Many of the files were originally opened within a

short time span. In line with Schön's<sup>41</sup> reflective practice and Smith and Dean's<sup>42</sup> reiterative reflective cycle for practice-led research, all of the files were returned to at later intervals for further and repeated work. As a general note, ensembles were based around drums/bass/piano/guitar with various additions or subtractions depending upon the piece. Apart from the guitar, all instruments are computer generated, often using samples of acoustic instruments to sound like the 'real thing'. Piano, or other traditionally keyboard instruments were generally played into the recording, albeit via a digital keyboard. Bass parts were often played upon the keyboard and suitably voiced. Drum parts were most often taken from widely available libraries of MIDI loops mapped to sampled drum sounds. Native Instruments' Kontakt software contained Session Drummer and 60's Session Drummer modules which were practical and suited to the project. The file Res4-Dim (further description below) provides an example of traditionally timbred ensemble digitally produced. All the music is of instrumental nature and microphones were not used except in the case of some ambient material that was included in one of the tracks. No external guitar amps as commonly used in live and recording situations were utilised. Guitar processing was done entirely with software within the DAW.

It is important to note here that all this music has been written, performed, recorded, arranged, edited, mixed and mastered by myself as the figure of recordist. The technology allows for this and forms the practical framework of the research. The term 'written' in the preceding sentence includes non-notational, improvised, or generally constructed music.

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<sup>41</sup> Schön, *The Reflective Practitioner*.

<sup>42</sup> Smith and Dean, *Practice-Led Research, Research-Led Practice in the Creative Arts*.



Ensemble refers to the recorded collection of sounds playing rather than a group of individuals. The ensemble is virtual and conceptual only.

The subtitles below are the session file names followed by a single descriptive line from the recording journal detailing tempo, time and key signatures, and sometimes an assigned artistic name for the piece.

### ***Res1***

6/8 groove in G/Gm/Dm - *Untitled*.

The file Res1 was described in my recording journal notes as a “6/8 [time signature] groove in [the key of] G/Gm/Dm. Transitions to D dim chord.” The journal describes an ensemble playing over a chord and bass pattern. The piano is sent through an auxiliary channel to a vocoder for timbral disruption. The guitar is passed through a granular synthesiser invoking soundscape qualities. This file was soon abandoned. The re-voicing and synthesis of instruments are used on other files but on reflection, this piece lacked enough jazz compositional elements despite the 6/8 time-signature. Working on this piece highlighted some technical decisions dictated by aesthetic choices. Granular synthesis can be sonically overwhelming dependent upon the settings used. Key chain compression was used to carve out sonic space for individual yet complex voices to be heard whilst mixed within the ensemble. The musical content has since been subsumed into another compositional project.

### ***Res2***

Tempo 140 bpm, 4/4 signature, key D - *Hard Bop Baby*

This piece was formulated on fast paced walking bass line common in jazz structures. The line is largely chromatic but is ambiguous enough to harmonically support a major triad, a dominant seventh chord or a I-IV chordal loop. This line is

recorded as played on the guitar. In the ensemble the bass is absent. The ensemble consists of guitar, piano and drum loops suited to genre. Two instances of Native Instruments Reaktor module were added as separate channels within the mix. One channel was fed the guitar line as it replayed. The other Reaktor channel played sliced sample of a drum beat, a sixteenth note in length. The effect was a hammering percussive sound, any original sample sound rendered into something new and unrecognisable from its source. Both these channels were faded in over the length of the piece. The guitar line was also fed through an effect that enable broad pitch transposition and simultaneous frequency filter adjustments through the positioning on an x-y graphical interface.

To begin with this piece sounds well within genre guidelines: fast paced, swing rhythm, blues inflected harmonic componentry, and expected timbres of clear guitar, piano and drum kit. The fast pace alludes to a certain need for skill in performance, a feature of much jazz culture. This work references a subset of jazz known as hard bop, a development from bebop and its smaller ensembles in the wake of economic pressures out of the Second World War. The absence of the bass provides for a minoritarian line of flight for the guitar to assume that role through digital transposition. This transposition happens dynamically throughout the piece. The guitar is then further subverted by the processed Reaktor sound fading in to amalgamate with the original sound. Timbre here is compromised. The drum loops are allocated several two bar solo breaks, as is normal within jazz practices. On reflection, these breaks became perhaps repetitive through their frequency of occurrence. They were then sliced and edited into pieces as a digital intrusion upon their performance. The drums were also eventually overwhelmed by the percussive

rhythmic pattern generated through Reaktor. This technical noise is all that remains by the end of the piece. The piano remains as recognisable and relatively sonically untouched. The piano provides improvised performance against the modified ensemble form. Perhaps the piano can be seen as a point of nostalgia within the piece, a recognisable synecdoche to frame a jazz performance against a technically morphing setting. Consideration was given to modifying the piano sound but contrast to the processed timbres and continuity plays a part in the formation of this work.

### ***Res3-Sevens***

Tempo 100 bpm, 7/8 signature, key of Db, locrian mode perhaps.

The element of ambiguity appears in this short piece, not only in the qualified suggestion of a mode but the looping piano figure varies between a F major pattern and a descending whole tone F minor line. Ambiguity between major and minor keys is rife in blues music and has permeated into jazz. The ensemble is standard drums/bass/piano/guitar. The guitar tone is noisy and distorted as the lead instrument. The guitar part is improvised against the constructed parts of the rest of the ensemble. The piano plays an ostinato that then climbs to a break point. The format is a passage centred tonally on F which leads to a climactic two bars before being repeated. The piece starts with an electric keyboard sixteenth note value run. This figure returns as a highly processed distortion sound field in three different variations. The short sixteenth-note figure finishes in abstracted noises with the guitar performance continuing to engage.

On reflection, the piece exhibits a tension in many parts. The piano is regular in sound but plays a major run against a minor run, starting major but returns as

minor, as if a subversion of its own part. The tonal centre is therefore nomadic. They key would then be F major returning as Db major. The electric piano figure which introduces and ends the piece is in locrian mode of Db major. The guitar improvises in F minor (consistent with blues soloing) but flirts with C minor (towards locrian in Db). The time signature is in 7/8 which is not common but there is a tradition in jazz for irregular time signatures. The drum loops are constructed from editing 4/4 loops into a four and three pattern to suit the seven count. The bass is centred on F patterns. Drums and bass combine to hint at folk rhythms. All parts feel like they are aiming to be elsewhere, in becoming something other, which results in the break points of the arrangement. Genre is confirmed by the ensemble, the exotic rhythm and improvisation features. Genre is destabilised by the tone of the guitar and the processed noise return of the electric piano figure.

### ***Res4 Dim***

Tempo 103 bpm, 4/4 signature, key of Cm – *Start from Here*.

This piece represents a baseline for the research project. Although it was not the first session commenced it became necessary early on to establish a starting point. This piece sounds like an acoustic ensemble playing together. The ensemble consists of drums, bass, piano, organ, and guitar. In essence, this work is devoted to MIDI. All sounds are generated from samples within the computer according to MIDI instructions recorded in the DAW. The exception is the guitar which was recorded as audio and used as a rhythm section<sup>43</sup> instrument. The bass part was played on a digital keyboard, the same keyboard subsequently used for the piano

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<sup>43</sup> The rhythm section commonly is comprised of the bass and drums within an ensemble, with the addition of piano and/or guitar if those instruments are playing harmonic rhythm parts rather than melodic solo parts.

and organ parts. Suitable sound patches were found for all channels and a constructed performance was played part by part over stylistically apt drum loops. The main harmonic progression was variation of a minor blues with an appropriate middle eight bars modulation.

This piece features many jazz stylistic notes: form, including a head statement of theme which returns for a closing declaration; improvisation traded between instruments; timbre consistent with expectation; ensemble structure consistent with expectation; rhythmic swing; and harmonic adherence to a blues form. The harmonic and rhythmic keys remain stable throughout as a majoritarian line of machinic structure. The point of including the work in this project is to demonstrate that the piece would not exist without digital technology in this form and would not be able to be constructed by a single agent as it is here. It demonstrates how much music is technologically mediated even when seemingly acoustic music is the resultant artefact. While appearing as a standard quartet (assuming the pianist is the same person as the organist) it explodes the notion of a standard quartet because it has been fabricated through the technology. It is as much reliant on technology as the other pieces however the sound choices made disguise its origin for the sake of genre conformity.

### ***Res4-Noise***

Tempo 63, 4/4 signature, keys sit between Em and Bm, modulates in and out of E major (perhaps D) through a variation section - *Lines of Flight*.

As a reaction to the ordinariness of the *Res4-Dim* piece, *Res4-Noise* is constructed as a far more ambiguous piece. The journal description as included above notes the harmonic key to be non-centred and varying throughout its form.

The work contains synthesised sound, white noise, and ambient elements out of the *musique concrète* tradition. The ambient recording was an attempt to capture the sound of high wind as something akin to white noise. In other recordings white noise has been substituted for wind, for example, the long coda of The Beatles song 'I Want You' from *Abbey Road*.<sup>44</sup> Serendipitously, a currawong flew across the sky mid-recording and called. The guitar line was aimed at engaging with the currawong's cry in a musical call-and-response. The call-and-response device, antiphony in European music, is a staple of jazz blues and spirituals<sup>45</sup>, and occurs throughout the piece as the instruments exchange phrases. The harmonic outline of the piece was then constructed around the instrumental version of the bird's call. A fair mimicry of the call plays between the notes B and A, then repeated at E and D. The form itself became AAB in structure as repeated final dissolving coda in of the A section. The chords of the A section became as Bm9, G13, CMaj7(9), and C diminished. The four primary notes of the chord feature in the first three chords, C dim becoming a transitional chord eventually to the B section.

The piece begins with white noise as a sonic Deleuzian plane of immanence. White noise contains all frequencies and therefore allows for the potential of any frequency in becoming music or noise. Guitar harmonics sent through granular synthesis added to the soundscape qualities of the piece, and then introducing the ambient wind and bird recording to fold into the ensemble. The birdcall was further treated as a rhythmic element underneath the B section of the work, and also in the coda. The guitar sound was treated to obtain a somewhat cracked tone

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<sup>44</sup> The Beatles. *Abbey Road*. Apple Records, 1969.

<sup>45</sup> Whitehead, *Why Jazz?*, 21

reminiscent of the harshness of the currawong voice. The overall, aesthetic of the instrumental sound harks to Frank Zappa's song 'St Etienne'<sup>46</sup> where a strong and distorted guitar tone plays over a jazzy arrangement. In "Lines of Flight", guitar and the birdcall (and eventually the piano, and whole ensemble) are in counterpoint. Rather than weaving melodic lines together, counterpoint puts the world of nature and music in proximity to enfold and imply each other<sup>47</sup>. Territorial codings from the bird call transfer into the music as each of the contrapuntal voices claims the territory of the other. Can the jazz guitar claim ambience and soundscape as part of its territory? The work here enfolds the ambient elements, processed for rhythmic and spatial expanses, into the music which in turn attempts to imply the other. The processed ambient sounds are reprised over the coda circling back to the ambient noise that began the piece. If the processed ambient sound is rhythmic and can approximated harmonically, where does the line lie between ambience or noise and music? The musical setting spells out genre, holding majoritarian lines against the generic minoritarianism of the ambient sound. The juxtaposition is meant to blur the boundaries between the two. Aesthetic considerations have dictated the mood and tempo of the instrumental mixing with the processed sample. Part of the research process is to draw the ambient sound into a timbral framework that is suitable for harmonic and rhythmic utility.

### ***Res5-Looper***

Tempo 108 bpm/61 bpm, 4/4 signature, key possibly Ebm/F# - *Kompakt*

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<sup>46</sup> Zappa, Frank. *Jazz from Hell*. Barking Pumpkin Records, 1986.

<sup>47</sup> Swiboda, 'Becoming + Music'. p. 28

This piece germinated from a misplaced loop. Within the DAW the drum channel sits next to the piano channel. Whilst dragging a MIDI drum clip into place it accidentally fell into piano channel. Drum MIDI mapping is not pitched although different pitches on a MIDI keyboard are assigned to different drum instances. As voiced by piano, the relevant pitches sound in the rhythmic pattern of the drum loop. Harmonically when pitched, the loop can be haphazard and belong to no particular unifying key. This can offer challenges, but also freedom for improvising along with. The phrase can be somewhat jagged, quite suited for jazz fusion stylings.

This file then developed mainly as an exercise in editing and arranging through construction. The ensemble is gathered as a jazz fusion trio with bass, drums and piano. The looped, now piano line is doubled and voiced as a saxophone part. A complementary bass line is added through Midi keyboard and additional drum parts are sourced. These elements conform to the timbral expectations of jazz fusion. The technology was applied in a number of ways. The original tempo was slowed down giving the piano loop a rather different aesthetically pleasing feel. Both tempos were incorporated into the song. A transitional space was negotiated between the two tempos by taking an audio piece of performed piano and time stretching the clip over the change in tempo. The clipped sound lower in pitch and drawn out as if in slow motion, creating a sonic bridge between the two ensemble sections. In the slower tempo section three sets of piano performances were recorded and all performances are heard in the song overlapping and combining. Each of these performances were done without reference (or listening) to the other piano parts. The combination of parts was then



left to an element of chance as to how they would fit. Given that this project has a single performer some level of synchronicity is to be expected. Some notions of feel and use of the piano parts owe reference to the jam-band aesthetics of some of Medeski, Martin and Wood's works.<sup>48</sup>

Finally, the completed song was written in sections. The sections were imported again on new channels and played simultaneously as a collage. Automation of the volume levels for each channel was manipulated so that the various parts came and went, combining and separating for new sonic possibilities that were not considered at the time recording. The song was started serendipitously and then further choices were made for elements of chance to shape the eventual experience. The recorded work of more than five minutes was reduced in collage to 1:15. Although not presented here as such, it is possible to collate the full length recording with the collage as a reprise to the work.

### ***Res6-Gtr***

Tempo 160, 4/4 signature, key of A.

The basis of this piece is a repeated 4 bars of a blues guitar riff that was performed and recorded as an audio file. A sample of approximately two beats in length was copied out of the loop and reversed as audio. This sample was played alongside the original loop thereby creating a newness, a difference within the guitar voice. Piano is largely improvised against the guitar loop with a structured chorus pattern that occurs at intervals. A second part of two bars of comping piano was added contributing to the destabilisation of the ensemble. Bass and drums were

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<sup>48</sup> Medeski, Martin and Wood. *Radiolarians*. Indirecto Records, 2008.

added sparingly. Even though a walking bass, and the sound of an upright bass, can strongly signify the jazz genre, there is space here to use it lightly, or drop it altogether as a means of freeing the frequency spectrum for some of the synthesised components. The ensemble is further destabilised by using an electronic kick drum sound (appearing first at 0:29), a chattering hi-hat pattern in what might be considered a hip-hop rhythm rather than a jazz swing or Afro-Cuban rhythm.

Timbres are subverted through the use of granular synthesis on the guitar part. Granular synthesis takes micro samples of the audio as it was performed and spreads and scatters the sound in time, spatial and frequency modulation. A further piano part climbs to the chorus section, mostly as a practical signal to announce the harmonic shift to the chorus. Multiple simultaneous piano parts have been used in other session files (Res11-Phrase for example, uses up to four piano voices), as a technical extension of the ensemble. The climbing piano was processed further through a third party modulating software (Cecilia V5) which compressed and expand the time passage of the clip. This can be first heard around 0:49 in the piece and again at 1:24.

Noise occurs from the beginning, a crackling as if from a phonogram needle on a vinyl LP record. The suggestion of old media inherent in the piece is a nod to the recorded medium heritage of jazz. The jazz LP record as a medium was a phenomenological experience greater than the music it contained. The physicality of the record became its own artefact, square sleeve, square inner sleeve often with a round label window, and round black platter at the core of the package. The cover had its own artwork, mostly a portrayal of the relevant musician(s), and therefore

contributed to the overall aesthetic. Often there was text to contextualise the music and visuals. The cover and disc had their own subtle smell. The disc itself had to move in performance as it spun upon the turntable to produce the music. The record was somewhat fragile and needed to be handled with care, perhaps producing a form of reverence which was in proportion to the feeling towards the contained music. The simulated noise at the beginning of this work is also a precursor to the digital noise to come as the work breaks down in form and harmonic structure.

***Res7 5-4***

Tempo 110, 5/4 signature, key of C (dominant) modulating to F.

See below.

***Res8 ii-V***

Tempo 84 bpm, 4/4 signature, nominally in the key of Dm but chord progression modulates.

Both of the above sessions were abandoned after initial setups. Although the ensemble was similar to other sessions and there was use of extended chords, there was not enough generically signifying jazz to proceed on. Timbral choices such as synthesised bass lines were difficult to associate with jazz in any way. Sections that fell in to a swing feel (dotted quaver or first and third triplet rhythmic accent) were more recognisable which suggests the primacy of the rhythmic element in the jazz genre. There were several sessions that failed to proceed beyond initial sketches. On reflection, possibly the majoritarian elements of the piece were insufficiently present to be effectively subverted. From a generic standpoint, if the work is not axiomatically strong it is then left to a contest of

minoritarian impulses. These impulses aesthetically didn't coalesce into a strong enough idea to progress on. Within the context of this project these session files proved to be fruitless.

## **Res9**

Tempo 80 bpm, 4/4 signature, key D - *Little Fish, Variation on St James Infirmary*

This piece came about through a software module that mapped different effects to different keys. Envisioned for use in live performance settings the software enables effect settings to be applied on the fly through the MIDI keyboard. The recording was made whilst the keyboard was also being improvised on merging a musical performance with spontaneous effects instances. Improvisation and reacting to musical stimuli in the moment is within the jazz aesthetic. It is possible with this particular software to set certain effects to certain keys and therefore manufacture a more expected response from the instrument. I felt it was more important within the context of this project to choose a random setting and record the performance. Ignorance of the software response allowed for a level of pretend randomness, an approach to stimulate spontaneity.

As part of the recording process it has become important to separate the audio produced from the instrument and the audio produced from the effect. Typically, a guitar through effects is in a sequence where only the end processed sound is heard. As practice-led research looking at the effect of technology on music performance, it can be important to isolate the separate parts. End product of this recording is mostly the effects channel. The original piano playing can be heard at times through the effects. At other times the effect obliterates the source material. As such, it offers a clear view of what manipulation is achievable very simply for the practitioner. One of the features is that these effects can be very sonically rich. This in itself can overwhelm all other sound. To fit such sound within

ensemble works or to marry competing sonically rich material is a challenge for the practitioner, composer and recordist.

A second piece was recorded with solo piano triggering the mapped effects. The piano improvised on the chord pattern of the blues standard 'St James Infirmary'.<sup>49</sup> The difference with the earlier recording was the use of harmonised chordal playing. To not be overwhelmed by the sonic effects, the performance had to be adapted to a light quick touch and very sparing use of the sustain pedal.

While a sense of rhythm was maintained the timing needed to be rubato with phrases left open-ended and hanging. This allowed the digital effect to play out at the discretion of the performer. The inclusion of this improvisation could be considered to make a stronger point of technology applied to genre in that the piece is based on a recognisable standard. Assuming as a standard the listener might be familiar with the song, there is an expectation on how the song should sound, and therefore the addition of other sonic material is more strongly contrasted in the mind of the listener.

As a practitioner it would be interesting to improvise a live performance with this technology.

### ***Res11-Phases***

Tempo 140 bpm, 4/4 signature, nominally in the key of Em - *Solo Machine, SM Reprise.*

This session has a long and convoluted construction. Originally conceived as a piece in 4/4 time but utilising loops of varying counts. For example, the bass was constructed in 7 beats against figures in 5 beats. The MIDI bass was first voiced an upright bass consistent with jazz norms. In searching for timbral

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<sup>49</sup> St James Infirmary, an 8 bar minor blues form song of uncertain authorship, perhaps as old as early nineteenth century.

experimentation through synthesised sounds, a sound that resembled a spitting, heavily distorted guitar sound was stumbled upon. This development led to a new bass line being incorporated and the piano being asked to improvise against the sonic guitar noise. Initial selection of the drum loops, modified to take out unwanted tom parts, has also been replaced. The loop was selected from a jazz groove list but I have moved to some funk loops with percussive side-rim figures played at half-speed. The technology allows for easily changing the speed of the drum loop from half-time to double speed. An intro between the drums and improvised piano was added in a free jazz style shifting through key centres. At this point the session was restarted. The result so far sounded too static upon reflection. Everything was scrapped except for the synthesised, distorted guitar sound.

A rising progression from Dm through other minor tonal centres climb back to Dm. The form of the piece is a once repeated pattern followed by a coda. The synthesised, distorted guitar sound underlies the ensemble and is played as more continuous lines rather than repeating the same figure. A saxophone line is added as an axiomatic statement of timbre. The rhythm and lead riff are of Afro-cuban inflections. The coda contains the lead riff which appears at the beginning of the ensemble play. There is also increased processing over the ensemble as a whole. Resonance processing was undertaken with the amplified frequencies shifting through a spectrum and sliding up and down. Although the melodic piano riff can be heard repeating, all other timbres sound to be in movement.

Each guitar line, the synthesised figure and the performed guitar part, are routed through a stereo auxiliary send to Guitar rig that has a crossover unit under

the influence of an LFO. The effect is the sound jumps from stereo pan point to point - LFO is not synced to the beat so the movements appear to be more random against the 4/4 beat. The crossover unit also breaks the the sound at a frequency point. This frequency point also moves under the influence of the LFO unit. A secondary LFO acting upon the first LFO would allow a different frequency rate and wave shape (sine, square, saw, triangle) to be applied to different parameters of the crossover. As the crossover varies the pan<sup>50</sup>, the location of those instruments literally become nomadic within the sound field. Jazz recordings are traditionally representations of live performance and reflect where the performers are located within a setting. Panning and spatial arrangements in these circumstances are generally static. Constantly varying the crossover via the LFO allows the technology to apply nomadicism, spatially and philosophically. Difference has been introduced in the repeated refrains perceptually moving. The movement of the signals reinforces the spatial boundaries of the overall sound and calls out a territory just as a bird calls from different locations within its declared territory.

The reprise contains only three elements: the guitar sound as played on the keyboard as opposed to, a piano improvisation in a free jazz style (in reference to Cecil Taylor),<sup>51</sup> and MIDI drums as mapped to the keyboard. The synthesised sound has a strong stuttering inbuilt rhythm based on sixteenth note delays. The drums are played on the keyboard in avant-garde, freestyle manner. No established form or tonal centre is prescribed. The result is chaotic and jarring. Upon reflection, this effect might have been intensified by mixing the inherently violent sonic qualities more aggressively.

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<sup>50</sup> Stereo panning indicates the placement of a signal with a sound field.

<sup>51</sup> Taylor, Cecil. *Unit Structure*. Blue Note Records, 1966.

Final processing of the session files was undertaken in the mastering process. Each completed session or musical piece was treated with compression, filtering, equalisation and reverb as aesthetic choices. All the pieces were amalgamated into the mastering file for final spatialisation and sound level referencing as a coherent suite of works. A recommended order of listening is set out in Volume II of the exegesis.



## Discussion

This practice-led research project has led to the creation of a suite of music resulting eleven recorded pieces of music. All files with the exception of one, introduce new timbral material as a way of destabilising the majoritarian features of the genre. The exception represents a baseline of genre material that is nonetheless heavily constructed and mediated by the technology. Nomadicism inherent in improvisation was used as the practitioner's foil to the technological features of the music. The limits of technology in its precision and rigidity in following its programmed instructions, mount an aesthetic challenge when attempting to socially contextualise and relate the music to a tradition not borne out of the technology. Elements of timbre, form, rhythm and time were subverted through various works within the suite as nomadic elements.

This practice-led research project began as an attempt to reconcile the expanded world of timbral possibility with the conformities of the genre of jazz. Any exploration of the technology impacts upon not only the sonic experience of the artefact, but the way it is constructed and presented. Jazz as a performative genre here is juxtaposed with the programmability and mechanical qualities of the technology. Jazz as a visceral, rhythmically swinging musical form that seeks a physical perceptual response is in contrast with machinic precision and sonic formation by algorithm. In many ways this project became an attempt to bridge those gaps between the human performative action and the technological

construction. Charles Kiel in his discussion on participatory discrepancies<sup>52</sup> in performance makes claims that such micro variations in performance are necessary to establish meaning and form a relation to the audience. These discrepancies are not only possibly unconscious or unavoidable, but desirable. Roland Barthes in his essay “The Grain of the Voice”<sup>53</sup> promoted the physicality of performance being evident in the performance over the technical perfection of a performance. Barthes was referring to live performance but his argument can be, and should be, extended to recorded works. The studio is an instrument for capturing performance and presenting, re-presenting or repurposing it. At least, the human interaction with the studio becomes most evident through the performances. Here the studio has the most potential for social and contextual relations to be formed. As an aesthetic choice, the human performance element of a recorded work still produces the most immediate socially communicable affect. What passes for participatory discrepancies in human performance must be carefully simulated in synthesised constructed music. The machine being capable of perfect repetition remains static. There is no difference and therefore no movement to become something else.

Technology has allowed the capture of the unintentional performance,<sup>54</sup> and the ability to use it in or out of context. Through the course of this project the unintentional often subverted the initial rationale. In at least two session files, weeks of work were abandoned in favour of a new idea that occurred on the back of the previous work but arrived through an accident of performance or recording. Even a musical mistake is easily audibly reversed as a sound clip to become a new sonic

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<sup>52</sup> Keil, Charles. ‘Participatory Discrepancies and the Power of Music’. *Cultural Anthropology* 2, no. 3 (1987): 275–83.

<sup>53</sup> Barthes, Roland. *Image, Music, Text*. New York : London: Fontana, 1977.

<sup>54</sup> Savage, Bytes and Backbeats.

object. New potential arises for different assemblages which themselves contain further immanent permutations.

The guitar has been one of the two performative instruments used in this project. It is important to note that the technology surrounding the guitar has made the instrument a timbral innovator. This has not generally been how the instrument has been used in jazz, although it is a feature of works in jazz fusion. One of the aspects that made the electric guitar such a useful and adaptable timbral innovator was that the design separated the acoustic signal of the instrument from the processed signal. The sound of an electric guitar played acoustically without amplification is tiny and tinny, useless for any public performance. The acoustic sound is effectively suppressed. The electric guitar must be processed for performance, even for the cleanest, most natural sounding tone. The digital piano keyboard has achieved the same separation between manual or bodily input and acoustic sound output. The keyboard has effectively become a musical version of the computer keyboard. What is played (typed) in is dependent upon the (word) processing for the output. The conclusion that seems to be apparent is that the acoustic source of the instrument must be separable from the processes that subsequently act upon the sound, and yet at the same time be malleable within the hands of the musician at the instant of performance. If that could be achieved for other acoustic instruments, the gestures and physicality of playing that instrument remains, yet the musician has timbral freedom.

The phenomenological experience of playing an acoustic instrument involves positive feedbacks as the instrument resonates in the hands of the musician. It is not only the resultant sound but the physical sensation of the instrument as it

operates. Deleuze considered the relations between singularities within a concept as vibration and so too vibration operates in the same way here. Singularities of a resonating reed, a hand upon keys, breath being forced into a sound tube, the abstract of the note, are all defined by the resultant vibration. This vibration can physically create sound waves or produce an electromagnetic signal requiring further processing before emanating as sound. Technology has provided manifold options in regard to further processing reinforcing Eno's observation that we are replacing the exercise of skill with exercising judgement. This is a situation that that today's musician cannot ignore. It is not a choice between technology or no technology. As previously stated, all music is technologically mediated. For Heidegger it was question of 'inhabiting the technology differently'<sup>55</sup>. As a practice-led project, this research has attempted to inhabit jazz a little differently by embracing the technological possibilities, and thereby considering the technology as an artistic endeavour rather than a manufacturing process. Artists are uniquely positioned to inhabit technology different due to their emphasis on creating use-value, an answer to desire that is not limited to functionality outside of its own undefined use-value.

Many of the digital timbres and new sounds are overwhelming in their frequency content and overactive modulation. One voice, one key on the keyboard can produce a whole soundscape including arpeggiations or other patterns that can fluctuate any number of parameters. As an instrumentalist within an ensemble, the key is to listen to the rest of the ensemble and adapt playing to harmonise.

Technology doesn't have the ability (yet) to listen to the context it operates within.

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<sup>55</sup> Wheeler, Michael. 'Martin Heidegger'. In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Winter 2018.. <https://plato.stanford.edu/archives/win2018/entries/heidegger/>.

Finding suitable sonic spaces for new timbres can be challenging. Technology has spawned its own genres (techno, electronica, and more sub-genres) partly out of the incompatibility of the sounds to acoustic instrumentation. This can lead to a saturation aesthetic (a term coined by David Henderson, as cited by John Napier<sup>56</sup>) where more is applied for the sake and capability of more. This is not unprecedented in music if we consider the excesses of Wagner or the wall-of-sound aesthetic in 1960's popular music. It could be useful to invert the perspective of finding space for the new saturated timbres and look to make space for the human element within the technology. A human-centric perspective would be helpful in the design of new timbres.

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<sup>56</sup> Napier, John. 'An Old Tradition but a Very New Practice: Accompaniment and the Saturation Aesthetic in Indian Music'. *Asian Music*. 35, no. 1 (2003): 115–34.

## Conclusion

Brian Eno has contended that the rise of technology has meant that skills are being replaced by judgement. Where anything is available to be used in any given project, the result depends upon the choices we make rather than the manual musical abilities we may possess. Perhaps this is just a transition of skill sets. Good music made today still requires good skills no matter what technologies are available to us. As Jameson notes using the Sapir-Whorf hypothesis, that new thought arises from new language capabilities, music is capable of new content through new technology<sup>57</sup>. The current digital technology certainly provides for expanded vocabulary through practically limitless timbral ranges. DAWs and accessories allow for the possibility of prodigious audio manipulation. Traditional genres have new opportunities to say something new. It is incumbent on practitioners to avail themselves of these opportunities to find new contexts, new meanings in the ongoing process of becoming. Jazz is well situated to flourish in a world of digital, ever-changing musical modes. The genre culturally straddles folk music and art music with a sophisticated skillset and a common touch. As Ake points out, jazz has a history of breaking down barriers and erecting new ones.<sup>58</sup> The world of digital technological music offers many more barriers ready to be broken.

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<sup>57</sup> Jameson, Frederic. 'Introduction'. In *Noise : The Political Economy of Music..* Minneapolis: University of Minnesota Press, 1985.

<sup>58</sup> Ake, *Jazz Cultures*.



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Res5-Looper 5:09

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Res5 Kompakt 1:14

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Res11 Phases 5:25

<https://soundcloud.com/user-710326155/res11-phases/s-vd9z9>

Res11 Phases Reprise 1:53

<https://soundcloud.com/user-710326155/phase-reprise/s-kCStG>

Res9 St James Infirmary 4:27

<https://soundcloud.com/user-710326155/st-james-infirmary/s-TIMhP>