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COMPOSITIONS COMBINING ACOUSTIC, ELECTRO-ACOUSTIC AND SYNTHETIC  
INSTRUMENTS FOR MODERN JAZZ PERFORMANCE

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A thesis submitted in partial fulfillment

of requirements for the degree of


Master of Music (Composition)

Conservatorium of Music

University of Sydney

2014

I declare that the research presented here is my own original work and has not been submitted to any other institution for the award of a degree.

Signed: 

Date: 9/10/14

## Abstract

*Compositions Combining Acoustic, Electro-acoustic and Synthetic Instruments for Modern Jazz Performance* presents a series of seven compositions by vibraphonist and composer David Kemp. The seven works primarily explore combining acoustic (trumpet and drums), electro-acoustic (electric guitar, bass guitar and pickup equipped vibraphone) and synthetic (electronically created synthesizer patches on a Roland XV5050 Sound Module) instruments, mixing musical styles, using rhythm and duration as a governing force in composition, using an extensive harmonic palette and incorporating technology. In this document, the scores are presented in full in a Portfolio Volume, accompanied by recorded performances in audio and visual formats and written analyses of the compositions. Included is a discussion of archetypal composers, similar stylistic traits of their music to mine, and conclusions drawn from the project. The document is completed by a bibliography and discography.



## Preface and Acknowledgements

The sources of research for this exegesis have been through both traditional mediums and through direct contact with individuals. For this reason an ethics approval was deemed necessary as the research involved approaching individuals directly who completed a questionnaire. The details of this ethics protocol are as follows:

Title: “An investigation of composition approaches and the use of technology in modern jazz music for performance from a jazz vibraphonist’s perspective”.

Protocol No.: SCM0003

Approval Date: 17 December 2012

First Annual Report approved : 9th December 2013

Completion Report submitted : 7th September 2014

Authorised Personnel: Mr Daryl Pratt, Mr David Kemp

I would like to acknowledge my supervisors Dr Trevor Pearce and Daryl Pratt for their support and sharing of knowledge throughout my Masters research study. I also gratefully acknowledge Helen Mitchell for chairing the Human Research Ethics Committee approval process along with Gary France and Tony Miceli who assisted with facilitating the questionnaire process.

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## **Chapter 1 – Project Background**

### **1.1 Musical Background**

My earliest formative musical experiences were learning piano at the age of six years old and attending very musically active primary and high schools<sup>1</sup> performing in ensembles as diverse as a Wind Band, Big Band, Full Orchestra, Percussion Ensemble and Musical Theatre bands, along with weekly instrumental instruction in percussion. This instilled in me a very wide ranging interest and a great sense of adventure with music.

As a multi-genre musician I have had far reaching performance experiences involving common practice orchestral and chamber music, Twentieth and Twenty First century classical music, ethnic music's such as African, North Indian, Cuban, Brazilian and Middle Eastern, modern jazz, electronic and computer aided music, and contemporary rock/funk styles. Across these styles, I'm primarily working as a percussionist dealing with an almost limitless array of instrumental sonorities, high concern for coaxing timbral variation from instruments and a predominance of providing the rhythmic foundation for the music.

My performance activities and primary creative pursuit as a percussionist has gradually shifted more towards the vibraphone and improvised music, mostly within the harmonic language of Modern Jazz. A notable influence has been the American vibraphonist Joe Locke, with whom I can identify by his statement in relation to being drawn to the vibraphone:

“When I was a kid I played drums and piano. I didn't really want to become a pianist, with all the work that entailed, but I liked the idea of playing melodies. So when I discovered the vibes<sup>2</sup>, it was the right fit for me - a percussion instrument I could play melodically.”<sup>3</sup>

The result is to be an investigative and inquisitive musician trying to get to the fundamental organizational structure, timbral qualities and characteristic composite materials of a certain musical style. Also as an improvising jazz musician (on drums, vibraphone and piano), the disciplines of composer and performer are somewhat blurred, which impacts on my emerging compositional style.

---

<sup>1</sup> Ferny Grove State Primary and High Schools, Brisbane, Australia

<sup>2</sup> A common alternative name for the vibraphone

<sup>3</sup> George Colligan, “Joe Locke: Practice!” *Jazztruth* October 3, 2010. Retrieved September 30<sup>th</sup>, 2013, from <http://jazztruth.blogspot.com.au/2010/10/joe-locke-practice.html>

## **1.2 Composition Experience**

With a definite sense of naïve confidence, I set about writing a piano concerto whilst in Grade 10 (age of 15) which, in hindsight, was overly ambitious with deficiencies in its overall form, organization and cohesion. This was reflected in the comments it received from the judge of the competition for student composers<sup>4</sup>.

However, I took this result as encouragement for my burgeoning composition interest, which developed further through assignments in senior music at high school. Coupled with this, I also had very advanced older musical colleagues whilst in high school<sup>5</sup> who offered encouragement. Also being a drummer, it was inevitable that I was involved in jazz and rock groups through these earlier years, which allowed for considerable scope for improvisation; widely accepted as a form of composition<sup>6</sup>.

During my undergraduate degree I took literature subjects with the notable composer Stephen Cronin including a course that investigated the techniques of the earlier part of the Twentieth Century. I was fascinated with the myriad of approaches by these composers and this course created a shift in musical outlook towards a future career of pursuing composition work alongside my music performance activities.

My professional activities up to now in music have primarily been as a performing musician, but I have managed to include composition whenever possible. I've written and performed the music for a touring children's puppet theatre show<sup>7</sup>, contributed compositions and arrangements during my involvement with Isorhythmos<sup>8</sup> and created material for my own ensembles, Sympatico, Latin Vibe and the Dave Kemp Group.

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<sup>4</sup> Australian Society for Music Education (ASME) Qld Young Composers Composition Competition 1996

<sup>5</sup> Spearheaded by the former Vancouver Symphony Orchestra Concertmaster and now Melbourne Symphony Orchestra Concermaster, Dale Barltrop, who offered great encouragement for my early composition endeavors. It was Dale who actually recorded my aforementioned overly ambitious piano concerto attempt (he was a pianist along with violinist) and when I was to meet him years later, once I had commenced my undergraduate degree in percussion performance, he was surprised I was not taking composition as my major study in the music degree.

<sup>6</sup> Jeff Metcalf, "Michel Camilo Trio Closes Jazz SLC with Man a Mano", *Deseret News*, 2012, para. 7 Retrieved April 6, 2012, from <http://www.deseretnews.com/article/765566331/Michel-Camilo-Trio-closes-Jazz-SLC-with-Mano-a-Mano.html?pg=1>

<sup>7</sup> The show was Erik The Red commissioned by Brisbane City Council for their Live in the Libraries series and also performed at festivals such as The Medieval Fayre at The Abbey Museum.

<sup>8</sup> Isorhythmos is a percussion ensemble formed by Queensland Symphony Orchestra Principal Percussionist David Montgomery of former students and current orchestra casual percussionists.

### **1.3 Introduction to the Project**

With all of these disparate musical influences it's somewhat inevitable that my compositional output is also stylistically adventurous, with a cross-pollination of elements from various musical genres of Jazz, Twentieth and Twenty-First Century Chamber Music, Afro-Cuban, Electronic and Popular styles, along with incorporating technology in a live performance context. My compositions can loosely be identified as "modern" or "contemporary" jazz but these terms, now in the second decade of the twenty first century, don't really offer a clear indication of their contents, aside from the presence of improvisation to various degrees and an extensive harmonic palette. Coupled with this, is the presence of electronically amplified instruments, sound altering effects of the amplified signal and synthetically produced sounds from hardware modules<sup>9</sup> and computer software<sup>10</sup>. Although these influences may seem disparate, it is a definitive aim of my work that they synthesize into a state of confluence whereby they are clearly identifiable, but not detracting from the overall effectiveness and cohesiveness of the compositions.

Of course, to what degree a composition can be considered effective and cohesive is a subjective view, and this is at the core of my research in addressing the central question:

When creating new compositions for performance by a modern jazz ensemble comprised of acoustic, electro-acoustic<sup>11</sup> and synthetic instrumentation, what are some key considerations and effective compositional methods to employ?

By identifying and investigating the creative output of key practitioners in my field (referred to as The Archetypes), presenting findings from conducting interviews with contemporaries, and an analysis of my own research informed compositions, this exegesis attempts to address the above question in order to add to the discussion of scholarly research into the act of music composition as well as present my emerging compositional style and voice.

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<sup>9</sup> Examples of these are the Roland XV5050 and the Alternate Mode Gigkat Module

<sup>10</sup> Software such as Apple Logic Pro and Native Instruments Kontakt. Also commonly known as Virtual Software Instruments (VST).

<sup>11</sup> "An adjective describing any process involving the transfer of a signal from acoustic to electrical form, or vice versa. Most commonly, transducers such as the microphone or loudspeaker are examples of this process". Barry Truax, ed, *Handbook for Acoustic Ecology* Retrieved April 6, 2012, from <http://www.sfu.ca/sonic-studio/handbook/Electro-Acoustic.html>



The resultant creative output of this research, namely the compositions themselves, incorporate electro-acoustic effects through the use of amplified vibraphone<sup>12</sup> and technologies such as software/hardware based synthetic instruments triggered via a Malletkat<sup>13</sup> partnered with amplified instruments (electric guitar and electric bass) and acoustic instruments (trumpet and drums).

The composition's aims are:

- To allow interaction between performers through improvisation
- Be challenging and engaging to performer and audience alike
- Use influences from a range of musical styles
- Incorporate technology in a cohesive and effective manner
- Look to psycho-acoustic effects<sup>14</sup> as a viable means of artistic expression and compositional variance
- Investigate rhythm manipulation as a predominant compositional parameter
- Explore the use of less orthodox harmony and associated synthetic scales
- Be reasonably accessible and achievable in a live performance context
- Establish an ongoing instrumental palette and ensemble for long-term composition, performance and recording activities.

This research is significant as it addresses the validity, creative potential, careful implementation and artistic results of combining the identified acoustic, electro-acoustic and synthetic components in compositions written specifically for live performance. The logistical considerations during performance therefore have an impact on the compositions. With a

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<sup>12</sup> Amplification is achieved through a contact transducer pickup system made by the USA based company K & K Pickups. Each individual key of the vibraphone has a pickup attached to it which then feeds its signal to a shielded cable rail which in turn runs to a pre-amp which also powers the pickups. More information is available at <http://kksound.com/instruments/vibraphone.php>

<sup>13</sup> The Malletkat is a Musical Instrument Digital Interface (MIDI) percussion controller device produced by the USA based company Alternate Mode. It allows a percussionist to strike rubberized pads arranged in a keyboard layout like a xylophone with mallets, sticks or even hands. More information is available at <http://www.alternatemode.com/malletkat.shtml>

<sup>14</sup> In this context, Psycho-Acoustic effects refers to commonly used guitar stomp box style effects such as Digital Delay and Wha-Wha.

myriad of hardware and software produced “virtual” instruments and an ever-increasing reliance on technology in live performance, this project also seeks to discover some suggestions for the appropriate and effective implementation of these technologies in this context.

#### **1.4 Literature Review**

Although there are many scholarly resources about modern jazz, few deal with the specific compositional mechanics of the music in detail until recently. Instead, the focus is on the personalities of seminal musicians, stylistic trends and the evolution of the art form. Predominantly, articles take a retrospective stance by examining albums by prominent musicians, such as Miles Davis’ *Kind of Blue*<sup>15</sup>, which has value for historical and sociological reasons, but hardly explains the compositional rationale. The first publication to address the mechanics of modern jazz composition appeared in 1953 with George Russell’s *The Lydian Chromatic Concept of Tonal Organization*<sup>16</sup> and is cited as a catalyst for Davis’ *Kind of Blue*. In contrast, there is now a plethora of texts and resources devoted to modern jazz composition<sup>17</sup>.

The focus of the research presented in this exegesis is combining acoustic, electro-acoustic and synthetic instruments in modern jazz composition for performance. This approach first appeared with the birth of Jazz Fusion by Gary Burton in 1967 in which he began to experiment with rock rhythms and included electric guitar with a fuzz effect<sup>18</sup>. More influential pioneering work was Miles Davis’ *In a Silent Way*<sup>19</sup> leading to his genre defining work *Bitches Brew*<sup>20</sup>. Scaruffi and Garcia add to the literature by identifying that using

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<sup>15</sup> Samuel Barrett, “Kind of Blue and the Economy of Modal Jazz” *Popular Music*, 25(02), (2006): 185. doi: 10.1017/S0261143006000857

<sup>16</sup> Notable composer and musical theorist George Russell presented this theory in a published book form in 1953 and Miles Davis is quoted in many references as stating it had a profound effect on his music and his own compositions. *The Lydian Chromatic Concept of Tonal Organization* (information brochure) Retrieved April 6, 2012, from <http://www.georgerussell.com/lc.html>

<sup>17</sup> Jerry Coker, *The Teaching of Jazz*. (Rottenburg, NY: Advance Music, 1989)

<sup>18</sup> Piero Scaruffi, *A History of Jazz Music 1900-2000*. (Omniware, 2006).

<sup>19</sup> Al Garcia, (2012). “A History of Jazz-Rock Fusion” *The Jazz Rock Fusion Page*. Retrieved April 6, 2012, from <http://www.liraproductions.com/jazzrock/htdocs/histhome.htm>

<sup>20</sup> L. K, Norman., *The Respective Influence of Jazz and Classical Music on Each Other, the Evolution of Third Stream and Fusion and the Effects Thereof into the 21st Century* (D.M.A. diss., The University of British Columbia, 2002).

electronics to manipulate an instrument's sound and non-jazz rhythms are key compositional methods.

A more apt description for the presented compositions is music with influences of modern classical, popular, world and jazz. Gunther Schuller coined the term "Third Stream" in 1957 to describe a new musical genre consisting of classical and jazz music styles. This research project parallels Schuller's Third Stream concept by also combining disparate musical styles. Furthermore, the instrumentation allows greater compositional scope, as the electronics become sound sources and/or timbral manipulators<sup>21</sup>. Schuller and Iverson respectively add to the literature by identifying a unified musical genre built from disparate musical styles and electronics usage allows greater scope in composition.

Electronics is commonplace in late Twentieth and early Twenty-First Century music with rapid advancements in computer processing power, affordable hard disks and streaming capabilities<sup>22</sup>. Composers now have terabytes<sup>23</sup> of high quality recorded samples of instruments to trigger via various MIDI<sup>24</sup> devices<sup>25</sup>. Effectively, we're no longer sonically bound by our instrumental specialty as we can manipulate convincingly real sounds instantly. As identified by Pederghana<sup>26</sup> nine years ago (as at 2014) the majority of composers then relied on synthetic emulations of real instruments or poor quality digital versions of analogue synthesizers because real audio sample based sound libraries were prohibitively expensive. Searching for new sounds is an attribute of creative musicians/composers, with electronics being a logical addition to the jazz composition lexicon in recent times<sup>27</sup>. These above citations impact on the literature by justifying the incorporation of electronics as a key consideration in modern jazz composition methodology.

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<sup>21</sup> Jennifer, Iverson, "The Emergence of Timbre: Ligeti's Synthesis of Electronic and Acoustic Music in Atmospheres," *Twentieth-century Music*, 7/1, 61-89 (2011). doi:10.1017/S1478572211000053

<sup>22</sup> Fortner, S., & Rebbapragada, N, "Ten Great Soft Synths Under \$100", *Keyboard*, 33 (2007): 32.

<sup>23</sup> One Terabyte = 1048576 Megabytes

<sup>24</sup> MIDI stands for Musical Instrument Digital Interface

<sup>25</sup> Sundstrup, L. "The Virtual Orchestra: A Systematic Method of Realising Music Composition Through Sample-based Orchestral Simulation" (Doctoral Thesis, University of Wollongong, 2009).

<sup>26</sup> Pederghana, D. "Subtle Gestures", *Electronic Musician*, 21.3 (2005): 36, 38, 40, 42,44, 46-48.

<sup>27</sup> Leonard, N. "A Personal Approach to Contemporary Jazz: Works for Saxophone and Computer-Controlled Electronics", *Leonardo Music Journal*, Vol. 6 (1996):15-20.

The electronics must be confluent with the ensemble sound palette, as is reinforced by Leonard's assertion "I felt that working with computers would be a way to expand jazz's sonic palette, rethink ensemble interplay and explore new resources for improvisation". At the 1994 *International Computer Music Conference*, five idiomatic composers were interviewed. These composers all agreed that the computer is a source of inspiration and enhancement as a compositional tool, but it should not be a replacement for human created composition and performance<sup>28</sup>. This aligns with the artistic ethos and aims of this research project.

Despite the seemingly infinite capabilities electronics affords us, in performance we are still bound by orthodox technique when combining its use with tangible instruments or controlling devices modeled on real instruments (as is the case with the Malletkat): a violinist uses a bow or a percussionist strikes an instrument with a stick or mallet<sup>29</sup>. For this reason, the logistics of electronics in performance is of great consideration. Decisions such as interfacing with computers, sound modules and controlling devices, issues of audible latency and the extent of sound manipulation, present themselves<sup>30</sup>.

Menzies<sup>31</sup> proposed new instruments with which to perform electro-acoustic music, but mostly the literature only addresses the process of using electronics in the act of composition, rather than during the live performance of a composition. It is as if there could be a view that using electronics in composition should be categorised as a distinctly different discipline from using electronics in live performance. The research investigates combining the instrumentation in both composition and performance; therefore the focus whilst reviewing literature was on addressing both of these parameters. After all, it is not feasible to compose music without first envisaging it in performance for this type of project<sup>32</sup>.

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<sup>28</sup> Cerana, C., Karpen, R., Katayose, H., Pope, S., Pecquet, F. & Rahn, J. "Touched by Machine?: Composition and Performance in the Digital Age" *Computer Music Journal*, Vol. 19, No. 3 (1995): 13-17.

<sup>29</sup> Chabot, X. "To Listen and to See: Making and Using Electronic Instruments" *Leonardo Music Journal*, Vol. 3, 11-16 (1993)

<sup>30</sup> Vickery, L. (2002). *The RoboSax Project (1991-2001): forms of performer/machine interaction in works by Jonathan Mustard and Lindsay Vickery*. Retrieved April 6, 2012, from [http://pcm.peabody.jhu.edu/~wright/hem/IP/KB/ilya/winkler\\_related/113-120\\_Vickery.pdf](http://pcm.peabody.jhu.edu/~wright/hem/IP/KB/ilya/winkler_related/113-120_Vickery.pdf)

<sup>31</sup> Menzies, D, "New Electronic Performance Instruments For Electroacoustic Music" (Doctoral Thesis, University of York, 1999). Retrieved from <http://www.zenprobe.com/dylan/pubs/thesis.pdf>

<sup>32</sup> Belet, B. "Live performance interaction for humans and machines in the early twenty-first century: one composer's aesthetics for composition and performance practice." *Organised Sound*, 8(3) (2003): 305-312. doi 10.1017/S1355771803000281

It was observed that no scholarly articles address the exact instrumentation of the research project. Key practitioners such as Joe Locke, Matthias Lupri, Mike Mainieri, Stefon Harris and Daryl Pratt are mentioned, but no detailed analysis of their compositions as research archetypes exists in the literature. However, Leonard<sup>33</sup> does address combining jazz composition, electronics/computers and live performance. He incorporates “computer controlled electronics” via a pitch to MIDI convertor, which allows a computer to apply preprogrammed algorithms on the content played on his saxophone in real time<sup>34</sup>.

A common view of computers in music composition is for them to generate new material<sup>35</sup>, thus functioning as the composer within strict guidelines as initially programmed by a human. As a counterpoint view, there is an ever-increasing amount of interactive systems affording the control of computers to performers<sup>36</sup>. Jazz performance relies on real time musical creation as described by jazz pianist Michel Camilo as “instant composition”<sup>37</sup>. Therefore, jazz composition incorporating electronics should allow performers to manipulate, in real time, instruments and control electronics without impediment to produce an uninhibited flow of improvised ideas. Vickery<sup>38</sup> supports this by stating, “a desire to create sonic environments of textural and compositional complexity that can be generated in real-time through the actions of a single performer.”

The author agrees with the performer being in control of the electronics during performance<sup>39</sup>. The literature review gleaned no exact replication of the project in terms of musical style and instrumentation, but there are many similar scholarly investigations and closely related creative projects that cover the broader topic of combining electronic and acoustic instrumentation in modern jazz composition for performance. This research project pioneers

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<sup>33</sup> Leonard, N., op. cit.

<sup>34</sup> The term “real time” in this context describes the alteration of the acoustic sound from the saxophone via the computer at the same instance as the original acoustic sound is produced. It is possible that there could be some latency between the acoustic sound and the computer treated sound but it is generally considered that a time delay under 30 milliseconds is usually imperceptible to most humans.

<sup>35</sup> Stroppa, M. “Live Electronics or ... Live Music? Towards a Critique of Interaction.” *Contemporary Music Review*, 18, (1999): 41-77.

<sup>36</sup> Eigenfeldt, A. “Real-time Composition as Performance Ecosystem.” *Organised Sound*, 16, (2011): 145-153. doi:10.1017/S1355771811000094

<sup>37</sup> Metcalf, J. “Michel Camilo Trio Closes Jazz SLC with ‘Man a Mano’”. *Deseret News* (2012). Retrieved April 6, 2012, from <http://www.deseretnews.com/article/765566331/Michel-Camilo-Trio-closes-Jazz-SLC-with-Mano-a-Mano.html?pg=1>

<sup>38</sup> Vickery, L., op. cit.

<sup>39</sup> Eigenfeldt, A., op. cit.

an academic discourse for its exact instrumentation, along with producing well crafted and research informed modern jazz compositions for performance.

### **1.5 Archetypes**

As with any type of research it's necessary to examine what has come before and led to the current status quo in order to properly inform your own research and understand its proper context. There is an abundance of documentation about the birth of the K and K pickup for the vibraphone<sup>40</sup>, the Oliver microphone system produced by the Musser company<sup>41</sup>, Mike Mainieri's invention of fixing acoustic guitar "hot-dot" pickups to the nodal point of each vibraphone note<sup>42</sup> and the experimentations of Frank Zappa with Piezo pickup technology.<sup>43</sup>

As this research project is primarily focused on the current use of this technology when composing new modern jazz music, it is not the intention to undertake deep research into the genesis of these technologies, but rather to identify current key practitioners who are implementing this technology, now in its much more mature state, in their composition and performance work. This offers the reader a select list for comparison of similar musician/composers to the author to place the creative output of this research project into a proper context according to musical style and compositional approach.

Therefore, the presented archetypes were variously selected according to their similarity of instrumentation, musical genre, musical background and training, implementation of available technology of the era and effectiveness in combining acoustic, electro-acoustic and synthetic instruments to various degrees in performance. These archetypes are presented via descriptive text, audio, video and musical score excerpts along with anecdotal material from journal or magazine articles.

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<sup>40</sup> For more information visit <http://www.kksound.com/instruments/vibraphone.php>

<sup>41</sup> John Teagle, "Oliver Sound, Inc."Flex" beyond Ampeg" *Vintage Guitar Magazine* (November 1999)

<sup>42</sup> AAJ Staff, "Take Five with Mike Mainieri" Published July 30, 2009. Retrieved May 5<sup>th</sup> 2014 from <http://www.allaboutjazz.com/take-five-with-mike-mainieri-mike-mainieri-by-aaj-staff.php&page=1#.U4E2zy8bYyw>

<sup>43</sup> "Zappa's Gear: The unique guitars, amplifiers, effect units, keyboards and studio equipment of Frank Zappa" Retrieved May 5<sup>th</sup> 2014 from <http://www.zappasgear.com/zgfacts.html>

### **1.5.1 Mike Mainieri**

Mike Mainieri is considered a pioneer in developing the lexicon of compositional approach for the use of the vibraphone in modern jazz and also in developing the audio transducer pickup and MIDI technology for the vibraphone. He's been active in professional jazz performance since the 1950's and is cited by many vibraphonists as a highly inspirational figure. He is quite possibly the first vibraphonist to have ever experimented with using psycho-acoustic effects to alter the instrument's natural acoustic sound via pickups (he glued guitar pickups onto every note of his vibraphone) and was responsible for inventing the first MIDI pickup interface for the instrument.<sup>44</sup> An example of his pioneering use of these technological innovations are shown in the Video Example 1 below. This live performance took place in 1983 and stands as an early example of the use of only the direct pickups sound of the vibraphone (as is evidenced by the lack of microphones on the vibraphone) through a psychoacoustic chorus effect. It also incorporates the use of an analogue synthesizer into the compositional palette of Mainieri at this time.



Video Example 1 - Mike Mainieri performing *Flying Colours* in 1983. View at [http://www.youtube.com/watch?v=Apk\\_yQ\\_-2WI](http://www.youtube.com/watch?v=Apk_yQ_-2WI)

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<sup>44</sup> AAJ Staff., op. cit.



### **1.5.2 Matthias Lupri**

He is a vibraphonist / composer who has studied at the Berklee College of Music and resides



in Boston. As a composer he combines the vibraphone with electronics and incorporates extended techniques such as the use of a bow on the vibraphone keys<sup>45</sup>. Lupri says of his music “I’m just trying to find different palettes of color and use them to the best of my ability to say what I want to say.” He further states, “And I’m also using the electronic stuff to expand that palette.”<sup>46</sup>



Audio Example 1 - Excerpt of the composition *Iceland Dark* by Matthias Lupri from the album *Transition Sonic*.

This composition combines synthetically generated sounds such as radio static, sustaining psycho-acoustic effects such as reverbs and delays, and post-recording manipulation such as the reversing of analogue audio and stereo panning. This is in conjunction with acoustically produced vibraphone sounds of bowing notes to create an eerie and highly layered texture. It is assumed multi-tracking was used in the recording process.



Audio Example 2 - *Metalix IV Prelude* by Matthias Lupri from the album *Metalix : A Suite for Wandering and Wondering*.



On this atmospheric opening track of this album the first thing the listener hears is the eerie sound of Lupri bowing the vibraphone, but it’s been reversed, looped and distorted electronically.

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<sup>45</sup> A long sustained pitch akin to a sine wave in timbre can be produced by pushing a bow (usually the type used on double bass or cello) along the front edge of a vibraphone key. More information at [http://www.malletjazz.com/lessons/ext\\_tech.html](http://www.malletjazz.com/lessons/ext_tech.html)

<sup>46</sup> Bill Mikowski, liner notes to *Metalix: A Wandering and Wondering Suite*, Matthias Lupri Group. Summit Records Catalog Number 445, 2006





Audio Example 3 - Lupri creates a similarly ethereal texture with the bow on the vibraphone during the chilling soundscape track, *Ghost Clusters*, also on the *Metalix : A Suite for Wandering and Wondering* album.

Lupri is cited as an innovator in the combined use of amplified vibraphone (an electro-acoustic instrument), and sound manipulation via electronics and explains his approach below:

“I’ve been exploring that more, it’s playing with two violin bows or playing with one violin bow in one hand and mallets in the other hand. The idea is, you can play something with the bow and start looping it with electronics, then you put down the bow and play with mallets over the loop.”<sup>47</sup>

### **1.5.3 Joe Locke**

Joe Locke is a vibraphonist and composer based in New York City who is a high profile jazz artist traveling the globe as a headlining act at international jazz festivals. His incorporation of technology with the vibraphone has been mainly through using pickups and then running this sound through a psychoacoustic chorus effect in live performance.

As this recording example (Video Example 2) included below is of a live performance it needs to be acknowledged that perhaps the timbre of the vibraphone may not have been as controllable by the composer as he may have desired. There is a very noticeable chorus effect on the vibraphone that has such high depth and wide frequency settings<sup>48</sup> that the exact pitch of the notes are almost obscured at times.

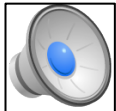
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<sup>47</sup> Bill Mikowski., op. cit.

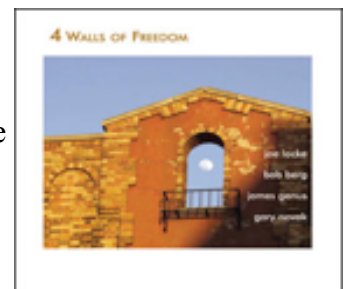
<sup>48</sup> These are common parameter settings on an electronic chorus psycho-acoustic effect.



Video Example 2 : *Van Gogh by Numbers* from the album *Live in Seattle* by the Joe Locke / Geoffrey Keezer Group released July 25th 2006. View online at <http://www.youtube.com/watch?v=wUHD6HL1SI>



Audio Example 4 - *4 Walls of Freedom Suite* composed by Joe Locke and released as an album with the same title.



For the first forty-eight seconds of the first movement of this suite there is a combined use of the natural vibraphone sound partnered with a distorted synthetic sound, presumably triggered via MIDI pickups on the vibraphone. The slight delay of the synthetic sound behind the vibes creates a heterophonic texture, whereby the two melodies are exactly the same but offset in time slightly at points.

#### **1.5.4 Stefon Harris and Blackout**

Stefon is a highly regarded composer (Grammy nominated for best Contemporary Jazz Album) who combines the vibraphone with synthetic sounds (usually played by the keyboard player in his bands) along with electronic effects more associated with rock and popular music. The video (Video Example 3) below shows the use of a vocoder effect and other-worldly synthetic sounds from keyboard (most notably at the beginning and also at 5:38).



Video Example 3 - Live performance of Stefon Harris and Blackout illustrating the use of synthetic effects (Vocoder) and synthetic sounds produced from keyboard synthesizers. View online at [http://www.youtube.com/watch?v=ihPa\\_xD619c](http://www.youtube.com/watch?v=ihPa_xD619c)

The video (Video Example 4) below offers an insight into Stefon's musical background which reveals his initial instrumental training to be in classical music and orchestral style percussion. This is similar to the author's early musical training and could be a reason for the similar compositional approach of blending musical styles and disparate influences.

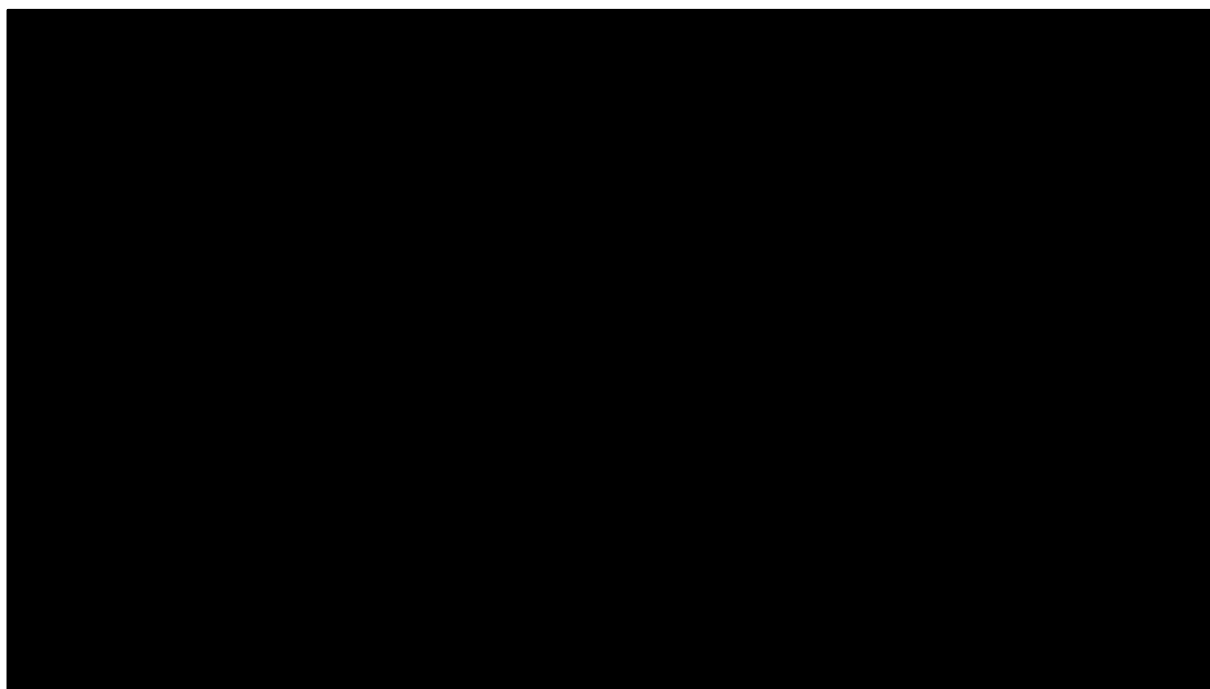


Video Example 4 - Interview with Stefon Harris where he discusses his early musical background and influences on his compositions. View online at [http://www.youtube.com/watch?v=dN\\_LBO6Xc60](http://www.youtube.com/watch?v=dN_LBO6Xc60)

### **1.5.5 Daryl Pratt**

Daryl is a multi-discipline percussionist and composer who has extensive experience in western art music, avant-garde contemporary classical, world musics and all forms of jazz. His compositions incorporate a broad range of stylistic influences and he incorporates technology in his groups such as the Daryl Pratt Sextet, Sonic Fiction and Atmosphere.

The video (Video Example 5) below is of the Daryl Pratt Sextet performing his work *1st Intersection "Multi chord"* which clearly displays his combining contemporary classical and modern jazz influences along with technology through the use of a Malletkat MIDI controller (played by Philip South) to trigger pre-recorded samples and synthetic sounds from a laptop computer.



Video Example 5 - Daryl Pratt Sextet live performance of *1st Intersection "Multi Chord"* composed by Daryl Pratt. View online at <http://www.youtube.com/watch?v=2sBgEbTm3YE>

Below (fig. 1) is a scanned copy of the score written by Daryl Pratt for this piece which is in the format of a set of instructions with key events occurring at set points in time corresponding to letter labels akin to rehearsal markings on a traditional score.

# 1st Intersection "multi chord"

©D Pratt, 30 Sept 2010

## Definitions:

- "Duo"=two way interactive listening and responding
- "Independent"=not influenced or in response to others
- "Respond"=listen and interact ad lib
- "Free"=ad lib; interactive and/or independent (can also include silence)
- "Sax Leads"=everyone follows the sax (blending, imitating, counterpointing, supporting, etc...)
- "Start with \_\_\_ ideas"=begin improv with similar materials (dynamics, tempo, pitch materials, density...)

## \*Each letter on cue

	*A.	B.
Sax	duo with bass Slow, long tones	tacet
Vibes	Independent chord stabs	tacet
Pno	respond to drms	Free
Perc	respond to vibes	tacet
Bass	duo with sax Slow, long tones	tacet
Drms	Independent Very fast and light	tacet

Sax	C. duo with bass Slow, long tones	D. tacet	E. tacet	F. duo with bass (bass leads)
Vibes	Independent chord stabs	tacet	Independent start with pnos's D. ideas	tacet
Pno	Free	Free	tacet	tacet
Perc	respond to vibes	tacet	tacet	independent KAT Textures and unusual sounds
Bass	duo with sax Slow, long tones	tacet	respond to drums	duo with sax (bass leads) start with vibe's E. ideas
Drms	respond to pno	tacet	Independent slow funky groove	tacet

Sax	G. G.P.	H. tacet	I. tacet	J. quiet, Choral, sax leads
Vibes	G.P.	Independent Chord stabs	Free	quiet, Choral, sax leads
Pno	G.P.	respond to drums	Free	quiet, Choral, sax leads
Perc	G.P.	respond to vibes	Free	tacet
Bass	G.P.	tacet	Free	quiet, Choral, sax leads
Drms	G.P.	Independent Very fast & light	Free	tacet

	K.	L.
Sax	Independent Fast & erratic	abrupt cut-off
Vibes	respond to sax	abrupt cut-off
Pno	Independent Chord stabs	abrupt cut-off
Perc	respond to pno**	abrupt cut-off
Bass	respond to drums	abrupt cut-off
Drums	Independent slow funky groove	abrupt cut-off

\*\*tacet if connecting to 'Josef Lived Here'. Perc begins 'Josef Lived Here' intro at L.

Figure 1 - Score for *1st Intersection "Multi chord"* by Daryl Pratt.



### **1.5.6 Steve Shapiro**

Steve offers great insights into the use of the newest advancements in pickup system technology for the vibraphone on his website and in live performance with his group The Electric Quartet in the New York City area. He was an adaptor in the 1970's of this technology but abandoned it due to, at the time, the inherent “plunk” sound of the mallets striking the bars and the more limited options in amplification speaker choice.

In the video (Video Example 6) below he compares the natural acoustic sound of the vibraphone through microphones as compared to the newest pickup system on the market released in 2013<sup>49</sup>.



Video Example 6 - Steve Shapiro demonstrates the most recent vibraphone pickup system available and it's capabilities of blending the instrument's natural sound and synthetic sound sources via MIDI. View online at <http://vimeo.com/90378283>

He explains his approach to using this newer pickup technology and how it impacts on his composition work in the video (Video Example 7) below.

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<sup>49</sup> This Pickup system is available through Vanderplas Percussion. More information available at <http://www.vanderplastal.com/index.php/accessories/vibe-amplification-system>



Video Example 7 - Steve Shapiro discusses his experiences with earlier vibraphone pickup technology and his current adoption of more recent systems. He also provides a clear example of the difference between the natural sound of the vibraphone through microphones and the sound through pickups with psycho-acoustic effects such as reverb and reverse. View online at <http://vimeo.com/83541779>

### **1.5.7 Charles Martin**

Charles is an Australia based percussionist and music technologist. He represents the cutting edge of a DIY design philosophy of integrating everyday technologies such as Smartphones and Tablet devices in a highly accessible way with musical instruments. Below is a video (Video Example 8) showing his use of the Smartphone App RjDj which samples the vibraphone's sound via microphones and alters it to create an "aftertouch"<sup>50</sup> style effect in concert with the natural sound of the vibraphone.

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<sup>50</sup> "Aftertouch is a measurement of the force applied by a performer to the key on a controller after it has been depressed." *Music Education Music Technology & Home Recording Glossary A*, retrieved October 5<sup>th</sup> 2012 from <http://www.traditionalmusic.co.uk/music%20tech%20glossary/Music%20Tech%20GlossaryA.htm>



Video Example 8 - Charles Martin interfacing a vibraphone with a Smartphone. View online at [http://www.youtube.com/watch?v=wNW5EN0eCd8&feature=youtube\\_gdata\\_player](http://www.youtube.com/watch?v=wNW5EN0eCd8&feature=youtube_gdata_player)

### **1.6 The Questionnaire**

A questionnaire was conducted in order to research what other stylistically similar composers' approaches are for combining acoustic, psycho-acoustic effects and synthetic instruments. The primary aim was to discover further information about what the key considerations and effective compositional methods could be by identifying any consensus between participants. The selected participants were targeted due to being mallet/keyboard percussionists, composers for live performance applications, include improvisation and incorporate technology in their compositions.

Through this process, a collation of responses to aid my composition process was compiled. By using a mixture of investigative questions requiring participants to unpack specific areas of their composition practice through explanation, alongside more explicit lines of inquiry, a holistic picture of the following was established:

- Implementation of technology
- How to successfully integrate psycho-acoustic effects, electro-acoustic and synthetic instruments alongside acoustic instruments in ensembles for live performance
- Considerations when composing music for live performance
- Composer specific insights into composition approach

- Impact of software/computers on their composition practice

Please refer to Appendix A for a full transcript of the interviews<sup>51</sup>.

### **1.6.1 Discussion of Aims in Relation to Questions**

*Q1 How and to what extent has the use of music performance technologies such as MIDI control (either via pickup technology on a vibraphone or by using a controller such as a Malletkat) impacted on your approach to composition?*

The aim of this question was to determine how influential the use of technology could be on the activity and process of composition. The request to explain how and to what degree it impacts was in order to provide a measure of this component in the work of other similar performers/composers to test against my own. I was looking for responses that either described the use of technology as a liberating force that allows absolute creative freedom through the gamut to responses bemoaning its use as a limiting inhibitor on composition.

This was also a direct question investigating the synthetic sound sources used by others and how they trigger them via MIDI or any other protocol. I hoped to discover usable “tried and tested” ways to communicate with synthetic sound sources via controller devices such as the Malletkat or any other viable means for a mallet/keyboard percussionist. I also was curious to see if other practitioners approached composing for the vibraphone where its sound is amplified via pickups markedly differently than those who compose for the totally acoustic sound (which of course could still be captured by microphones in performance). Would a clear difference be able to be established or is it negligible?

*Q2 Do you regularly use any other sound manipulation technology during live performance such as chorus, reverb or looping effects? If so, can you please provide specific details?*

This query was about addressing the electro-acoustic component of the research question and its implementation. I was interested in which particular psycho-acoustic effects were deemed most effective on a vibraphone or synthetic sounds triggered via a percussion MIDI controller and which devices were most popular. If this could be determined, it would give me a clearer

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<sup>51</sup> Some participants have requested to remain anonymous and appear unnamed in the questionnaire transcripts.

idea of the most reliable and sonically effective choices to experiment with in my own composition work.

*Q3 When writing new material, how and to what extent do you consider how the music will work in a live performance context?*

The quest was to find out how like-minded composers approached creating music for non-real time environments (such as studio recordings) and real time events (such as live performance). The expectation was to reveal that there would be a clear delineation between the two contexts, the ways in which they differed, and to what extent. Also with this line of inquiry common issues affecting the performance of compositions in a live context might present themselves. By using the word “work” in the question, a participant could reveal both the negatives and positives of composing for live performance with the particular instrumental grouping of this research project.

*Q4 Have you encountered compositions using recording studio technologies such as multi-track recording or post-tracking effects to not be effective in a live performance? If so, what were the particular challenges encountered and how were they overcome?*

As my own initial compositional concepts for live performance were primarily using quite highly complex technology setups more akin to the kind of equipment found in recording studios, I wanted to find out what pitfalls others had discovered with this kind of approach and how they may have found a way to effectively translate what was possible in the studio environment into live performance. A particular focus was drawn to the most challenging situations and the solutions employed by asking for the specific difficulties encountered by the participants. Also on offer could be an insight into the most creative, but still practical in live performance, studio derived technologies.

*Q5 What do you consider to be some key considerations when composing music incorporating technology usage for modern jazz performance?*

This was a specific line of inquiry into what other more experienced practitioners considered to be imperative. It was hoped the list of responses would show if any consensus could be

drawn between the participants and also that it would highlight any major differences of opinion. It would also serve as further evidence in relation to the impact of technology on modern jazz composition for live performance. This would hopefully arm me with a specific set of considerations to compare against my own research and compositional development.

*Q6 Do you have any clearly identifiable compositional methods you employ regularly when incorporating technology into your creative work?*

This question follows on from the previous question by attempting to draw any links between the participant's key considerations and their subsequent methods or processes in the act of composition. The use of the wording "clearly identifiable" was in order to determine if the incorporation of technology creates any patterns of behaviour and perhaps even a standard approach for any particular participants in their composition work. This was to hopefully provide me with clear methods to employ in my own composition practice in order to determine their applicability.

*Q7 Have you ever used any computer based software instruments or effects? If so, do you have any comments to make about this experience?*

This was an obvious attempt to seek out the impact that more recent technologies of software/computer based synthesis and sample playback triggering are having on composers of this type. Due to the unreliability of this technology, I wanted to know what fail-safe redundancy measures performers/composers might have in place should it fail during performance. Another truth I was seeking was whether the almost limitless sonic capabilities of this technology outweighs the aforementioned unreliability, setup time and associated hassles, and complexities in implementation for live performance. As this is an area of personal investigation, I wanted to explicitly compare my experimentation in this area with the participants to get a more solid understanding of its usage, be it effectual or ineffectual.

### **1.6.2 The Questionnaire – Analysis and Findings**

The questionnaire afforded me a valuable insight into the approach of other practitioners in my field. Overwhelmingly, participants cited that when composing new material, they are indeed focused on its application in a live performance context, rather than for the recording

studio's multi-track creation environment. As a result, participants determined the requirements for effectively combining acoustic, electro-acoustic and synthetic instruments in compositions for live performance to be:

- It needs to be logistically simple to setup due to time constraints in the majority of live performance situations they have encountered.
- Have some form of redundant fail-safe in place if technology fails.
- All acoustic and electro-acoustic instrumental and electronically generated sounds need to blend well with each other.
- Relies on a highly competent audio engineer for a successful outcome.

One participant provided quite an extended response in relation to the logistics of combining the various sound sources in an ensemble for a live performance. He suggested that in order to properly blend electronic sound sources, all acoustic sound sources should be amplified via microphone and projected through a highly capable P.A. system in order for them to have enough presence alongside the electronic sounds. He also commented:

“In many situations this [*having the sound of all acoustic instruments through the P.A. via microphones*] isn't practical in which case I usually focus on getting the electronic instruments to blend in with the acoustic by a small powered speaker for each electronic setup positioned directly behind the player on the stage.”<sup>52</sup>

Also a trend tends to be that the composer and performer are the same individual, thus the knowledge for using any technology is already possessed. One participant went as far as stating:

“My approach to composition is completely centered around the technology and what it can do. I am limited only by what is possible, both in terms of programming and computer power, and what I can manage as a performer. I am not planning these kinds of solos for anyone else to play!”<sup>53</sup>

On the topic of successfully blending the sounds, Mario DeCuitiis<sup>54</sup> offered:

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<sup>52</sup> Please refer to Appendix A - Charles Martin's Questionnaire

<sup>53</sup> Please refer to Appendix A -Jeremy Barnett's Questionnaire

<sup>54</sup> Mario DeCuitiis is the owner of the company Alternate Mode who manufacture the Malletkat device.

“When a jazz vibraphonist plays on a Malletkat, the key consideration is to think about the sound they are playing on. The "vibe" technique doesn't work when playing things like flute or guitar. The same is true for voicings. A guitar normally plays open voicings. Vibe players tend to play closed voicings. The instrument that is being emulated teaches the performer what sounds natural or not.”

This observation highlights the fact that although a particular synthetic sound has been selected due to its confluent nature with the ensemble's timbre, its ability to blend is still very much dependent on the musician's judgment and technique. Gary France<sup>55</sup> also commented with this statement presenting considerations for performance, “What is the context of the recorded sounds? Are they dated? Do they evoke a “programmatic” image etc.”

Of consideration is also the comment that the Malletkat be considered an instrument in its own right<sup>56</sup>, not just thought of as a vibraphone or marimba replacement. It therefore requires its own approach and technique to be acquired over time rather than assuming any mallet percussion player can use it successfully straight away. This is supported by Tony Miceli's comment:

“Actually I love synths and love playing them. It's just a big stretch to incorporate that into live jazz playing, at least for me. The instrument has to sound subtle. The Malletkat is getting there and is so much further along then it was just a few years ago. It's a necessary tool now for mallet players, partly because it's starting to come into it's own.”

### **1.7 Concluding Remarks**

This chapter served the purpose of honing in on the focus of my research within the wider context of my musical experiences and compositional identity. It offered a starting point from which to then explore the application of my research findings and the resultant creative output of the composition portfolio. Although undertaking the survey of the existing literature didn't uncover an exact replication of my research project, it did reveal very closely related research which has had a definite impact on my compositional approach.

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<sup>55</sup> Please refer to Appendix A -Gary France's Questionnaire



The significance of identifying archetypes and conducting the questionnaire was to gain a comprehensive insight into some of the key considerations of composing and the effective compositional methods employed by highly successful practitioners and some contemporaries in my field. Subsequently from this, I also learnt from their opinions and advice as I moved into the more intensive composition stage of my project.

The questionnaire's focus was on the implementation of technology and how this affected the compositional approach of the participants alongside any of the logistical issues to consider when implementing this technology. This information was valuable as it helped me predetermine the logistical issues I could face and ascertain a practical know-how for technology usage.

## **Chapter 2 – Composition Style and Influences**

### **2.0 Introduction**

This chapter is a detailed discussion of my overall compositional approach, processes and emerging style, within the context of some of the predominate influences who have shaped my musical psyche to this point. There is a delineation of compositional parameters presented in terms of the rhythmical processes, the harmonic and melodic language, the impact of improvisation and the role of technology in my work. Also presented is an evolutionary look at the process of creating a composition via audio and visual mediums to provide insight into my composition *Blues Oddity* as it is refined.

### **2.1 Rhythmic Supremacy**

My compositions are mainly concerned with the manipulation of rhythm and duration as a governing force on the other musical elements. This is both at the macro level structure of the larger sections or overall arc of a work, as well as at a micro level within individual melodic phrases and harmonic movement. There is a preoccupation with camouflaging the underlying pulse by use of rhythmic displacement, polyrhythms, odd meters and tuplets.

This is also reflected in the endemic use of textural layering effects, hocketing, offbeat tutti entries, over-the-barline phrasing, metric modulations, rhythmic feel changes, accelerando and, on occasion, abrupt tempo changes. All this rhythmic manipulation affords the compositions a sense of fluidity and a floating quality. This same sensibility is observed in the music of my influences, such as Joe Locke who goes as far as writing the word “float” onto the score (fig. 2).



Figure 2 - Score Excerpt of *Van Gogh By Numbers* by Joe Locke<sup>57</sup>.

The reason for this omnipotence of rhythm in my compositions could be contributed to my musical background in percussion, but its difficult to pinpoint this for certain. Jazz characteristically is much more varied in terms of rhythm than common practice period Western Art Music, so it could be that my being a jazz musician has filtered into my composition style to account for this rhythmic supremacy. Contributing further to this rhythmic superiority are my experiences in performing avant-garde music with contemporary classical ensembles such as *Elision*<sup>58</sup>. Of course we can't help but be a product of all our musical influences, but perhaps my extremely varied musical background is a factor in my compositions' preoccupation with regards to rhythmic processes and devices.

To follow this thread of inquiry into why rhythmic supremacy is a guiding principle in my composition requires a survey of the most personally influential musical styles and seminal works. A memorable discovery for me was Minimalism, which is a musical style seemingly ubiquitous with mallet percussion and therefore highly applicable to me. Hearing and subsequently studying the score for works by Steve Reich such as *Six Marimbas* and *Music for 18 Musicians* (fig. 3) has left an indelible mark on my musical psyche. The use of hypnotic repetition as a vehicle for texture that in turn slowly morphs the harmonic state of the music, I found to be an incredible revelation.

<sup>57</sup> This score is available for purchase from <http://store.joelocke.com/all-sheetmusic/>

<sup>58</sup> I performed *Machine for Contacting the Dead* by Liza Lim in 2006 with *Elision*. This was a formative experience in exposing me to the highly complex rhythmic detail of contemporary classical music and was a catalyst in exploring this compositional field further. More information available at [www.elision.org.au](http://www.elision.org.au)

I'm not alone it seems, as many composers, especially Modern Jazz and improvising electronic/popular composers' works from the 1980's and beyond, cite Steve Reich as a stylistic influence<sup>59</sup>. This is apparent in the 2004 work by Pat Metheny, *The Way Up* (fig. 4) Daniel Andress Sanchez<sup>60</sup> comments:

“The opening of *The Way Up* starts with repeated notes on the marimba and guitars, which very nearly quotes the opening of Reich's *Music for 18 Musicians*, both in rhythm and in harmony.”

A side-by-side comparison of the two compositions supports this assertion and reveals they are also similar in terms of gradually layering in instruments for textural diversity, dynamic surges, oscillating and hocketing rhythms and antiphonal effects.

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<sup>59</sup> Tim Rutherford-Johnson, “The Influence Engine: Steve Reich and Pop Music”, *The Music Box*, March 27<sup>th</sup>, 2013. Retrieved on June 15<sup>th</sup>, 2014 from <http://www.newmusicbox.org/articles/the-influence-engine-steve-reich-and-pop-music/>

<sup>60</sup> Daniel Andress Sanchez, “Glitch Jazz: Improvisors Negotiating Control in a Digital World” (M.F.A. Diss. University of California, 2013), 22

Singer (2000)  
(1996)

1

I	(10-25c)	(16-43c)	(6-14c)	(10-14c)	(6-17c)	(6-12c)	(6-12c)	(6-12c)	(6-12c)	(6-12c)
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Handel: The Lord's Prayer

Full Score

Key: C Major

Time: 3/4

Tempo: Adagio

Instrumentation:

- Bass Clarinet 1
- Bass Clarinet 2
- Alto Saxophone
- Maracas 1
- Maracas 2
- Vibraphone 1
- Vibraphone 2
- Piano 1
- Piano 2
- Trumpet 1
- Trumpet 2
- Trombone 1
- Trombone 2
- Euphonium
- Tuba
- Woodwinds (Flute, Oboe, Clarinet, Bassoon)
- Strings

Score details:

- Key signature: C Major
- Time signature: 3/4
- Tempo: Adagio
- Dynamic markings: *f* (forte)
- Rehearsal marks: 1, 2, 3, 4
- Section markings: *Andante*, *Allegro*

for  $\mathcal{H}$  and  $\mathcal{H}'$  is the same as the one for  $\mathcal{H}$  and  $\mathcal{H}'$  in the previous section.

Figure 3 - Score excerpt of *Music for 18 Musicians* by Steve Reich.



Figure 4 - Score Excerpt of *The Way Up* by Pat Metheny.

When delving into the compositions for ensembles similar to mine in instrumentation, vibraphonist Joe Locke's various groups come to the forefront. His collaborations with pianist Geoffrey Keezer (albums of particular relevance are *Live in Seattle* and *Signing*) have provided me with an aural signpost to strive for in terms of composition. My music has clear similarities with the music being written for the Joe Locke / Geoffrey Keezer Group in terms of rhythmic frameworks involving mixed meters to camouflage the underlying pulse (fig. 5), fragmented melodic motives played in octave doubling with bass and drums unison interjections (fig. 6) and highly displaced ensemble rhythms (fig. 7).

**Darth Alexis**  
As recorded by the Joe Locke/Geoffrey Keezer Group on their CD "Signing" (Motema)

Geoffrey Keezer

Funky  
♩ = 100

Vibraphone

Piano

5-string Fretless Electric Bass

Drum Set

Figure 5 - An example of rhythmic frameworks involving mixed meters to camouflage the underlying pulse in the composition *Darth Alexis* by Geoffrey Keezer.



Figure 6 - An example of fragmented melodic motives played in octave doubling with bass and drums unison interjections in the composition *Darth Alexis* by Geoffrey Keezer.

Figure 7 shows a musical score for measures 72 and 4X. The score is for Vibraphone (Vib.), Piano (Pno.), Bass, and Drums (Dr.). Measures 72 and 4X show highly displaced ensemble rhythms. The score includes the instruction "ON CUE (bkggs)" and "(keep soloing, play part last x)".

Figure 7 - An example of highly displaced ensemble rhythms in the composition *Darth Alexis* by Geoffrey Keezer.

The device of mixed meter in written composition has its roots in early twentieth century classical music such as Igor Stravinsky's *Rite of Spring* (fig. 8) rather than jazz.



Figure 8 - An excerpt from the score to *The Rite of Spring* by Igor Stravinsky to illustrate the use of mixed meters.

However, the use of mixed meters in Joe Locke and Geoffrey Keezer's compositions is not nearly as explicit as in Stravinsky's music. Terreon Gully, the drummer for the group, reinforces this idea with his comments about the process of recording the compositions for the album *Signing* which can be viewed in the video (Video Example 9) below.



Video Example 9 - A documentary style investigation into the compositions of Joe Locke and Geoffrey Keezer for the Joe Locke / Geoffrey Keezer Group album *Signing*. View online at <http://www.youtube.com/watch?v=37rVd9v1Q2A>



Harmonically, my music is undoubtedly using the Modern Jazz language of extended harmony, albeit in a rhythmically charged way. The variable rates of harmonic change within an individual work and the regular implementation of syncopated/off-beat tutti figures of stacked harmony are common traits in my compositions as the score excerpts provided below illustrate (fig. 9, 10 & 11).

Figure 9 shows a musical score excerpt for the piece 'Before and After' by David Kemp. It consists of four staves: TPT. (Trumpet), SYNTH. (Synthesizer), Vib. (Vibraphone), and E. GTR. (Electric Guitar). The guitar part is characterized by highly syncopated chordal rhythmic stabs. The chords are labeled as E7b13, Gsus, D-, Gsus, D-, and C#b9. The other instruments play melodic lines.

Figure 9 - Score excerpt of *Before and After* by David Kemp illustrating highly syncopated chordal rhythmic stabs in the guitar part.

Figure 10 shows a musical score excerpt for the piece 'Matrix' by David Kemp. It consists of three staves: SYNTH. (Synthesizer), BASS, and DR. (Drums). The synthesizer part features syncopated chordal rhythms, marked with a box 'E' and a dynamic marking 'p'. The bass and drums provide a rhythmic foundation.

Figure 10 - Score excerpt of *Matrix* by David Kemp illustrating syncopated chordal rhythms in the synthesizer part.



Figure 11 - Score excerpt of *Bent* by David Kemp illustrating syncopated chordal rhythms in the vibraphone part.

There is also a use of suspended and poly-chord harmonies for extended periods to create a floating and static quality to the music (fig 12). I also partner static or ambiguous harmonies with longer duration rhythms.

**BEFORE & AFTER** DAVE KEMP

♩ = 120

MALLET MOND SYNTH ROLAND XV 5050 SOUND MODULE SET TO PATCH # PB-086 "SMOOTH"

ELECTRIC GUITAR Q-SUS  
*mf* (VOICINGS / RHYTHM AD LIB)

BASS Q-SUS  
*mp* (PLAY LINE AD LIB)

DRUM SET GENTLE GROOVE / LIGHT CYMBALS AD LIB  
*mp*

Figure 12 - Score excerpt of *Before and After* by David Kemp illustrating the use of suspended harmonies with rhythmic stasis.

Herbie Hancock is often cited as the earliest proponent of Modern Jazz composition to partner suspended harmony with rhythmic stasis with his composition *Maiden Voyage*<sup>61</sup>(fig. 13).

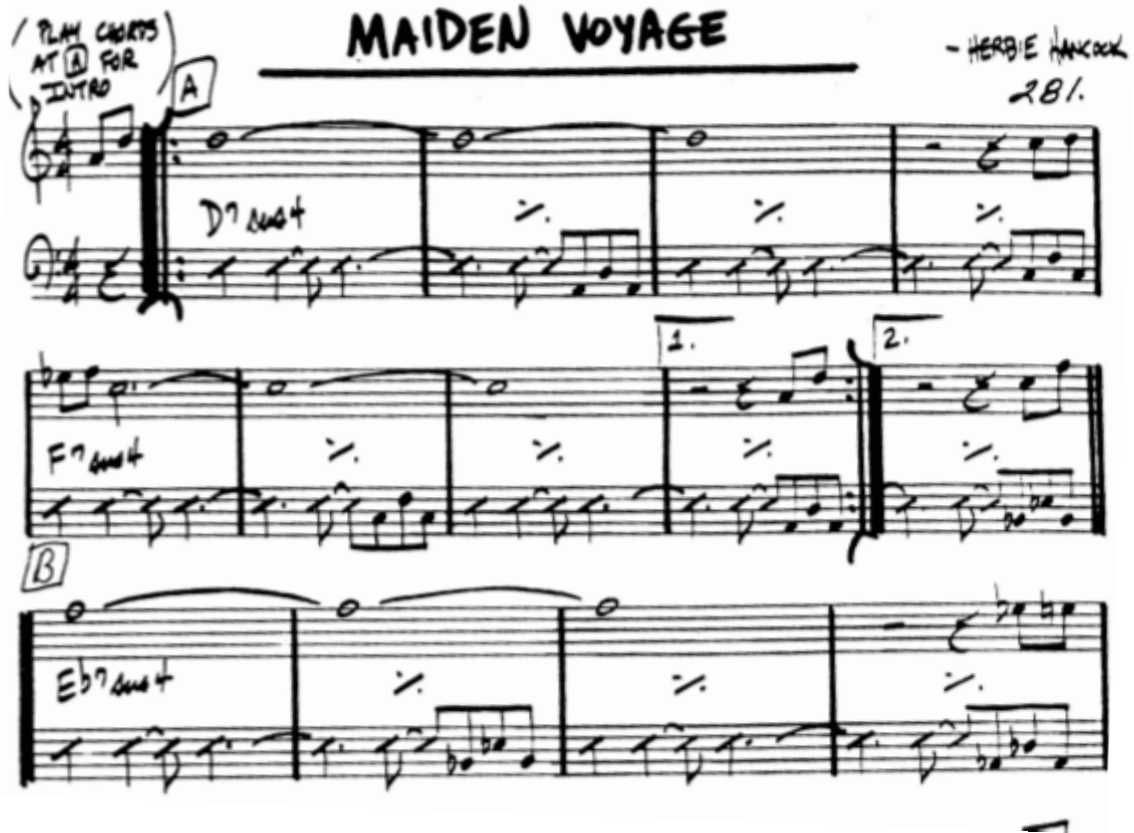


Figure 13 - An excerpt of the lead sheet to *Maiden Voyage* by Herbie Hancock illustrating the suspension chords atop a floating and static rhythmic ostinato.

Coupled with this, is a predilection for delaying the confirmation of the key centre till part way into a composition or including sections where the key centre is obscured. This device is designed to create inquisitiveness about the music and gradually introduce the aural palette to the listener. The score excerpt below shows the delayed confirmation of a key centre till bar 17 (fig. 14).

<sup>61</sup> This was the title track to highly influential jazz pianist and composer Herbie Hancock's debut album on Blue Note Records, released on May 17, 1965.

# BEFORE & AFTER

DAVE KEMP

♩ = 120

TRUMPET IN B $\flat$

VIBRAPHONE

ELECTRIC GUITAR

BASS  
(5 STRING - LOW D NEEDED)

DRUM SET

*mf* (VOICINGS / RHYTHM AD LIB)

*mp* (PLAY LINE AD LIB)

GENTLE GROOVE / LIGHT CYMBALS AD LIB

*mp*

6 A

TPT.

VIB.

E. GTR.

BASS

DR.

*mf*

(MOTOR ON SLOW)

(BEND NOTE)

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11

TPT.

VIB.

E. GTR.

BASS

DR.

(BEND NOTE)

8

16

TPT.

VIB.

E. GTR.

BASS

DR.

A-7 D- A-7 B $\flat$  $\Delta$ 7 D- G-sus

A-7 D- A-7 B $\flat$  $\Delta$ 7 D- G-sus

A-7 D- A-7 B $\flat$  $\Delta$ 7 D- G-sus

A-7 D- A-7 B $\flat$  $\Delta$ 7 D- G-sus

(LET RING) *p* *mf* *f*

(VOICINGS / RHYTHM AD LIB)

(PLAY LINE AD LIB)

GENTLE GROOVE / LIGHT CYMBAL

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Figure 14 - The opening section of *Before and After* by David Kemp showing the delayed confirmation of the key centre till bar 17.

Melodic phrases are also somewhat dictated by rhythmic parameters. Often antiphony is used so as to explore the timbral quality of instruments by placing the same pitches on each, but offsetting them (fig. 15 & 16).

The image shows a musical score excerpt for five instruments: Trumpet (TPT.), Vibraphone (Vib.), Electric Guitar (E. Gtr.), Bass, and Drums (Dr.). The score is in 4/4 time and features a key signature of one flat (B-flat). The measure number 32 is indicated at the top left. The Trumpet and Vibraphone parts are written in treble clef, while the Electric Guitar, Bass, and Drums parts are in their respective standard staves. The Trumpet and Vibraphone parts are offset by one measure, illustrating antiphony. The Vibraphone part includes a 'BEND NOTE' annotation. The Drums part consists of a simple rhythmic pattern.

Figure 15 - Score excerpt of *Before and After* by David Kemp illustrating the use of antiphony between the vibraphone and the trumpet.

40

TPT.

Vib.

E. GTR.

BASS

DR.

43

TPT.

Vib.

BASS

DR.

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46

Vib.

E. GTR.

BASS

DR.

48

TPT.

Vib.

E. GTR.

BASS

DR.

Figure 16 - Excerpt from the score for *Bent* displaying the use of antiphony between trumpet, vibraphone and electric guitar.

## **2.2 Melodic and Harmonic Language**

My music also creates new synthetic scales by forming hybrids of existing identified scales (e.g. Lydian Dominant, Lydian Augmented and Lydian Diminished combined) (table 1).

Table 1 - A table showing the intervallic structure of three commonly used scales/ modes in Modern Jazz. My music uses a combination of all of these scales at times to create a synthetic scale.

Lydian Dominant	1-2-3-#4-5-6-b7 W-W-W-H-W-H-W	C-D-E-F#-G-A-Bb-C
Lydian Augmented	1-2-3-#4-#5-6-7 W-W-W-W-H-W-H	C-D-E-F#-G#-A-B-C
Lydian Diminished	1-2-b3-#4-5-6-7 W-H-H+W-H-W-W-H	C-D-Eb-F#-G-A-B-C

Combining particular intervals into recurring interval sets is also commonplace. When analyzing the pitch organization within individual compositions, it is apparent that a distinct interval structure is present within individual phrases, thus in turn affecting the melodic contour within these phrases. Of particular note, is the use of partnering smaller intervals such as minor seconds along side large intervals such as sixths and sevenths to create an angular, yet balanced, melodic contour (fig.17).



Figure 17 - An excerpt of a melodic line played by trumpet in *Bent* by David Kemp to illustrate the use of interval sets.

## **2.3 Texture**

Texturally, my compositions can vary between slow metamorphosis through to unexpected contrast (fig. 18).



The image displays two musical excerpts from the score of *Before and After* by David Kemp. The top excerpt, measures 74-78, features a thick texture with block harmony in unison between the vibraphone (Vib.) and electric guitar (E. Gtr.). The music is characterized by dense, sustained chords. The bottom excerpt, measures 79-83, illustrates abrupt textural changes. It begins with a solo passage for the trumpet (Tpt.) and synth (Synth), marked with a box 'F' and the instruction '(CUE END OF SOLO)'. This is followed by a tutti passage where the vibraphone (Vib.) and electric guitar (E. Gtr.) play in unison, marked with a box 'F' and the instruction '(SAND IN ON 2ND SEAT)'. The music transitions from a solo texture to a tutti texture, with dynamic markings like *f* (VIBES ALONE) and *mf* (SAND IN ON 2ND SEAT) indicating the change in volume and texture.

Figure 18 - Two excerpts from the score of *Before and After* by David Kemp. The excerpt at the top of the page displays a thicker texture that involves block harmony in unison between vibraphone and guitar, whereas the excerpt at the bottom of the page displays the abrupt textural changes between solo and tutti passages.

There is use of polyrhythms, solo unaccompanied passages and tutti passages within the one composition and a variation on monody (fig. 19), whereby the trumpet, guitar and vibraphone will all play a linear melodic line in unison over the top of bass and drums playing a repeated pattern.

The image shows a musical score excerpt from the composition *Bent*. It consists of two systems of staves for five instruments: TPT. (Trumpet), Vib. (Vibraphone), E. QTR. (Electric Quartet), BASS (Bass), and DR. (Drum). The first system, starting at measure 31, is marked "LOOSE GROOVE". The second system, starting at measure 34, includes the instruction "(CHANGE VOICING IF NECESSARY)" and ends with "LOOSE GROOVE". The melody is primarily carried by the TPT. and Vib. parts, while the BASS and DR. provide a rhythmic foundation.

Figure 19 - Excerpt from the score of the composition *Bent* showing the use of a monody texture in composition approach.

Another textural device shown below (fig. 20) is to set the same melodic phrase in series on each instrument before playing it again in a staggered entry arrangement.

Figure 20 - Excerpt from the score of the composition *Bent* showing the use of staggered melodic entries.

## 2.4 Improvisation

Improvisation has a role in the compositions in the more orthodox jazz context of providing sections of harmonic material for the musicians of the ensemble to perform a spontaneous solo of their own invention. Its use is also in the open-ended approach to timbral control via the various psycho-acoustic sound shapers and synthetic sound sources prescribed in the compositions.

The intention of the given harmonic sequence or chord progression within a composition is to provide a framework on which to improvise within a suggested set of scales, modes or pitch sets already firmly established by the lexicon of the modern jazz language. For example, the common knowledge of competent jazz musicians that when improvising over a major seventh chord with an indicated sharpened 11th scale degree suggests the use of the Lydian mode as seen below (fig. 21).



Figure 21 - C lydian mode.

Another consideration is when hearing an improvised solo from the research project's recordings alone without the accompaniment of the other instruments, and perhaps more importantly the harmonic progression played by guitar, it is still possible to follow the chord changes in the progression. This is a hallmark of a more orthodox approach to improvisation in a jazz context and a definite aim of this section of the *Blues Oddity* composition.



Audio Example 5 - Improvised vibraphone solo without accompaniment from *Blues Oddity*.

Below is the audio file of the improvised solo with rhythm section accompaniment for contrast and context.



Audio Example 6 - Improvised vibraphone solo with rhythm section accompaniment from *Blues Oddity*.

This more orthodox approach of “playing in the changes”<sup>62</sup> is a conscious decision to counteract the sometimes more angular and dissonant sounding melodic material within the compositions.

In contrast to this more orthodox approach, I also wanted to explore the Free Jazz approach whereby there are no boundaries on the musical content produced by a group of musicians other than interacting and reacting to each other within a loosely defined musical context. My eventual implementation of this approach in the featured composition portfolio was in a somewhat conservative manner during the work *Before and After*.

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<sup>62</sup> Playing in the changes denotes that an improviser is only using pitches of the chord or extension notes (9th, 11th, 13th) that correspond with a scale or mode for that particular chord. This is opposed to using pitches outside of the chord or corresponding scale/mode which are particularly dissonant and known as “playing outside”.



## ATTENTION DISORDERLY DEFICIT

♩=100  
LOOSE FUNKY FEEL  
DAVE KEMP

ELECTRIC BASS

DRUM SET

(RIMCLICK SOUND ON SNARE DRUM)

5

VIB.

mf (VIBRAPHONE)

E. GTR.

mf (LIGHT WHA-WHA EFFECT)

E. SASS

DR.

Figure 23 - Excerpt from *Attention Disorderly Deficit* showing the indication of using a wha wha effect on guitar.

### 2.5 Role of Technology in Compositions for Performance

My use of technology in composition is primarily in expanding the available sound palette through using synthesizers and also in augmenting the natural sound of amplified instruments via psycho-acoustic effects. The implementation of these are by triggering a Roland XV 5050 Module, the Alternate Mode Gigkat Module and the internal sound of a Novation X-Station Synthesizer via the Malletkat for the synthetic sounds and running the line level pickup signal from the vibraphone via a K and K pickup system through a Boss CE3 Chorus, Boss DD6 Digital Delay, Boss Rc 2 Loop Station, Boss ML 2 Metal Core effects pedals or the Behringer Virtualizer Pro multi-effects unit.

Also common effects for the guitar such as wha-wha, distortion and delay are prescribed in my compositions. In the work *Matrix* a combined reverb and delay effect is utilized over the entire ensemble sound. Another specific use of technology is in the second movement of the work *Before and After*, where a looping effect is achieved through the use of the Boss RC3

Loop Station pedal on a synthetic sound triggered by the Malletkat in order to allow for the mallet percussionist to play vibraphone simultaneously.

Of consideration is the logistics of the technology implementation in compositions for live performance. It impacts on set-up/pack-down time, complexity for live sound control, stage layout and even performer anxiety levels in terms of equipment malfunction during performance. Through past performance experiences and experimentation I have made the decision to use hardware synthesizer modules in performances, instead of a laptop computer, to trigger sounds from the Malletkat for issues of stability and the potential propensity for equipment malfunction and failure with computers.

The actual physical placement of these components is also a factor for consideration along with the footprint of these items on stage. All components need to be easily within arms reach and at a suitable height to quickly glance across and see the current parameters on an LCD screen whilst playing the vibraphone or Malletkat. Please refer to Figure 24 below for a labelled picture of these components in the setup used in performance.



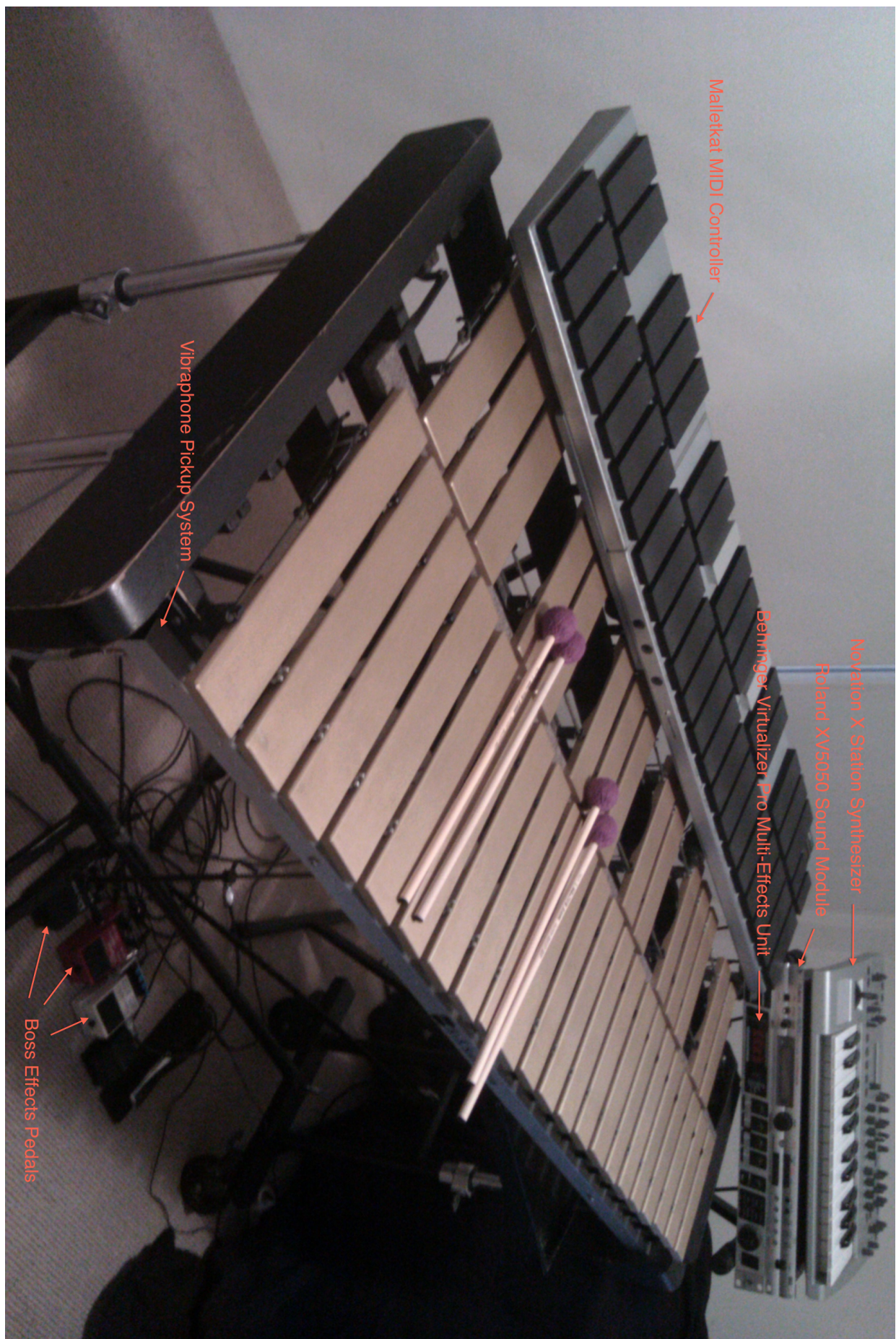
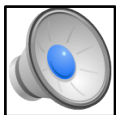


Figure 24 - The setup of instruments used by the vibraphonist in performance of the compositions for amplified jazz ensemble.



Along with these performance logistic issues is the selection of the synthetic sounds appropriate for the modern jazz idiom. My principal criterion is that the sound needs to blend effectively with the other instruments so as not to detract from the overall ensemble timbre. It needs to be a sound whose characteristics are reminiscent of analog synthesizers (much closer association with Modern Jazz and Fusion than the digital creations of modern electronic dance music) and not too penetrating as a lead type of sound, or when playing chords as a pad sound.

For these compositions I selected the “Roland XV5050 Flyin’ High Patch # PF:021 ” and the “Gigkat Evil Octave Wheel Patch #U61” for melodic lead playing (3<sup>rd</sup> movement of *Before and After*) and the “Roland XV5050 Voltage Ctrl Patch # PB:004 ” for harmonic playing (used throughout the composition *Matrix* – refer to Audio Example 7), as they met the objective admirably.



Audio Example 7 - Recording of the opening of *Matrix* highlighting the use of a pad sound from the Roland XV5050 Module (Patch #PB:004).

Stylistically similar composer Daniel Andress Sanchez<sup>63</sup> reinforces this method of non-invasive technology integration with his statement:

“The challenge will be to do this in such a way so as to allow myself the freedom to improvise, and have the computer provide the electronic sounds that I have predetermined to be appropriate during said improvisatory passages.”

It is this aim of integrating the use of technology in a cohesive manner with which my composition work identifies. I do not want the technology to be the centre-piece of compositions, but rather to co-exist with the acoustic instrumentation and sound sources in a balanced way. I also didn’t want to lose sight of my main focus of working with these sounds in the act of music composition as opposed to being a sound designer or synthesist. As a result, I have tended to use preset synthetic sounds and commercially available psycho-acoustic effects rather than spending an inordinate amount of time on creating my own customized sounds and effects.

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<sup>63</sup> Daniel Andress Sanchez, op. cit. 24

## **2.6 Evolution of Style - An Audio & Visual Timeline**

As my compositions have developed over time and a main goal of this exegesis is to document the evolution of my compositional style, I have included below a timeline tracing this evolution. It takes the form of a case study of the composition *Blues Oddity* in written commentary, audio and visual representation. Some works were more in a sketch format initially and often it was the process of work-shopping and recording these works along with the interactions I had with the other instrumentalists at these times, that prompted alterations.

### **2.6.1 Blues Oddity - Evolutionary Case Study**

As this composition was originally conceived as being more towards an acoustic jazz ensemble in aesthetic, I originally scored it for double bass. However, during the recording process it became apparent that the opening guitar riff that I had also included to be played on the double bass was very problematic to be executed cleanly and in tune at the tempo of 160 crotchets per minute. This was therefore omitted on the recording below and instead a pedal note played on double bass. The other problem was that I had neglected to indicate the changes between swung and straight quavers on the double bass part which caused much confusion between musicians.



Audio Example 8 - Version one of *Blues Oddity* recorded at the Sydney Conservatorium Recording Studio on 6th December 2012.



Video Example 10 - *Blues Oddity* version two performed live on the 15th May 2013.

This version was now scored for bass guitar as I didn't want to compromise by omitting the riff from this part. I realised that the timbre of bass guitar was actually more conducive with the electric guitar and amplified vibraphone and therefore was now much less concerned with capturing a more acoustic jazz approach. In reviewing the work at this stage, I thought that the overall tempo should be decreased to allow for the musicians to play the odd grouped rhythms and ensemble accents more cleanly and cohesively. The lack of this ensemble "tightness" detracted from the performance of this work.



Audio Example 9 - *Blues Oddity* version three recorded on the 12th February 2014 at C3 Studios and as it appears on the album *Transitions* by the Dave Kemp Group.

As a result of the previous experience in live performance, I decided to decrease the tempo for this recording to about 145 crotchet beats per minute. I was also concerned that as we were recording in a studio environment as opposed to a live performance that it would be even more obvious if the ensemble was not in unison during the trickier rhythmic moments of the work.



Video Example 11 - *Blues Oddity* version four performed live on the 25th March 2014 as part of the Jazzgroove concert series at the venue Foundry 616.

As we felt the ensemble had started to gel more and we were more confident with the trickier rhythmic material of this composition, we decided to increase the tempo again to 155 crotchet beats per minute which was the closest yet to the overly ambitious initial tempo of 160 crotchet beats per minute.

## **2.7 Concluding Remarks**

This chapter provided greater insight into my musical psyche and the influences that helped shape it. It allows the reader to form a greater general understanding of the context of my work and some of the key components and musical traits of my compositions. In undertaking this review of my compositional style and influences, it has personally afforded me with a clearer sense of direction for my musical creation and identity as a composer.

## **Chapter 3 - Analysis of Compositions for Amplified Jazz Ensemble**

### **3.0 Introduction**

The compositions analysed in this chapter form the core creative output of my research activities in terms of applying the knowledge gained through the survey of the current literature in my field, the questionnaire findings and affirming my emerging compositional style. My musical creations are analysed through background discussion, citing influences, pinpointing specific aims and compositional materials, diagrammatic representation and unpacking the underlying processes at work. A concluding section is presented where the compositions are discussed holistically in terms of some the key considerations and effective methods to implement when composing Modern Jazz music containing acoustic, electro-acoustic and synthetic constituents, for live performance.

### **3.1 “Before and After”**

#### **3.1.1 Introduction**

The premise of this work and the meaning behind the title is to represent the universal human experience of making a decision in the moment and how this process creates a before that moment, and an after that moment. What lies in the middle is the indeterminate period whereby we are unsure of the outcome of that decision. This is represented musically by including a free improvisation section in the middle of the work, bridging the gap between the earlier “before” movement and the later “after” movement.

Compositionally, the impetus for this work is mainly to explore the use of simple harmonic structures and a poignant use of space alongside sections containing clusters of harmonic density and heightened rhythmic activity, over a large multi-movement framework. It is envisioned that this is achieved in an accessible way for both listener and performer, hence the use of tonal material and the recurring, somewhat obvious, melodic ideas more akin to the melodic hooks found in popular and commercial music. The use of odd meter bars and odd note rhythms is to add to the floating quality and, at times, static nature of the work. It is hoped this is employed in an organic and natural way so as not to draw the unnecessary attention of the listener to these somewhat complex rhythmic ideas.

The performers of this work need to be comfortable with improvising in a contemporary jazz context, as improvisations over vamped chord changes are included. Parts of this work were originally conceived as sections of a suite for a project involving myself on vibraphone and the piano led contemporary jazz trio Misinterprotato (now known as Trichotomy).

### **3.1.2 Influences**

A clear stylistic influence on *Before and After* was the Pat Metheny and Lyle Mays opus *The Way Up*.

Metheny says of the work:

“It’s [*The Way Up*] something that we’ve kind of been shooting for really from the beginning. If you look at the band’s long history<sup>64</sup>, from very early on, there was an interest in trying to kind of reinvent the whole idea of what a jazz group can be in the modern era. And there are some real obvious top-level issues that are there. You know, the electronic aspect of it, the whole way that we use the guitars themselves as a kind of textural element, as well as the sort of narrative voice in the music, but a whole lot of other things. The trumpet, the percussion and the whole idea of using synths as an orchestral element, all of those things are kind of on the top level. But sort of underneath that, right from the beginning, there’s been this very strong interest in form itself.”<sup>65</sup>

*The Way Up* is a highly ambitious composition with a very extended structure for a jazz composition as its total duration is over sixty minutes. It is widely considered a pioneering work in its use of integrating synthetic sound sources with an acoustic/amplified ensemble extremely cohesively. This was important to Lyle Mays and Pat Metheny as a key consideration for their composition as outlined below:

“It was just kind of an instant way of thinking about music that we were very compatible in terms of the way we can make our instruments speak and then the way we would ultimately blend together. As the band progressed we were able to expand and I

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<sup>64</sup> The *Pat Metheny Group* started in 1977.

<sup>65</sup> *The Way Up – Live*, Pat Metheny Group (Eagle Rock Entertainment Ltd, 2006, DVD)

have to say that so much of the expansion has been driven by the realities of the time that we're finding ourselves living in. I mean the whole idea of orchestration within a small group was something that was very limited prior to 1970 or so, I mean not that there was any bad sense to that limitation, but there was only so much you could do with the instruments of a quartet<sup>66</sup>. Suddenly things started to change when there was this whole possibility of having polyphonic synthesis, having lots of different kinds of guitars that have very different kinds of sounds, even the drumset itself changed quite a bit to have all these different textural possibilities and I think that we kind of intuitively respond to that, and that then caused us to have to make some other adjustments. As we started to go more into electricity it seemed like we needed other things to balance that, that were more acoustic.”<sup>67</sup>

It is this influential idea of balancing the synthetic sound sources and the natural acoustic sounds that Metheny mentions that I have also strived for in this composition. Another balancing is the more simplistic material verses the more complex. Below is Pat Metheny's statement in regards to this compositional consideration:

“The whole issue of complexity versus simplicity is a very interesting one when it comes to music because ultimately I don't think that one necessarily wins over the other as an aesthetic pursuit. I think they both have endless challenges in terms of which story you want to tell and for me I would say actually coming up with things that are really powerful and really simple is actually harder than coming up with things that are really complicated. On the other hand, there is a certain kind of expression that the kinds of details that I think this particular community of musicians is really good at discovering is that there is a certain story we can tell with this sort of material that we couldn't tell without the kind of energy we use to address complexity.”

This notion of a different kind of energy being required to perform more challenging and complex material is also at the heart of my compositional investigation. There are some key moments in *Before and After* which serve as a type of complexity cadence which support this influential idea of balancing the simple with the complex as an effective compositional

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<sup>66</sup> For clarification, Pat Metheny is referring to a Jazz Quartet comprised of guitar, piano, bass and drums.

<sup>67</sup> *The Way Up – Live*, op. cit.

method.

Thus far *The Way Up* has been discussed largely on a conceptual level, but there are also identifiable compositional influences to pinpoint. Its combination of recurring melodic themes layered atop of rhythmically shifting harmonic progressions is a compositional trait very much present in my composition *Before and After*. Score excerpts from both works below represent this (fig. 25 & 26).

**THE WAY UP - PART ONE** PAT METHENY & LYLE MAYS

**A** ♩ = 121.5

**MALLETS**

**PIANO**

**GUITARS**

**MALLETS**

**PIANO**

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Figure 25 - Score excerpt from *The Way Up* by Pat Metheny and Lyle Mays.



The image displays a musical score excerpt from 'Before and After' by David Kemp, covering measures 179 to 182. The score is arranged in four staves: TPT. (Trumpet), SYNTH. (Synthesizer), Vib. (Vibraphone), and E. QTR. (Electric Quartet). The key signature is one sharp (F#), and the time signature is 4/4.

**Measure 179:**

- TPT.:** A melodic line starting on F#4, moving up stepwise to A4, then down to G4, F#4, and ending on E4.
- SYNTH.:** A sustained, ethereal sound block.
- Vib.:** A melodic line starting on F#4, moving up stepwise to A4, then down to G4, F#4, and ending on E4.
- E. QTR.:** Chords: E7b13, Gsus, D-, Gsus, D-, C#9 Bb9.

**Measure 182:**

- TPT.:** A melodic line starting on F#4, moving up stepwise to A4, then down to G4, F#4, and ending on E4. A dynamic marking of *f* (forte) is present.
- SYNTH.:** A sustained, ethereal sound block.
- Vib.:** A melodic line starting on F#4, moving up stepwise to A4, then down to G4, F#4, and ending on E4.
- E. QTR.:** Chords: A9, Bb7b13, F#7, E7b13, Gsus.

Figure 26 - Score excerpt from *Before and After* by David Kemp.

I also drew inspiration from the ambient works of Brian Eno, most notably in the section of the work *Before and After* beginning at rehearsal marking K. The intention is to create an ethereal and blurred texture in which the individual pitches on the vibraphone are effectively smeared together to create a block of sustained sound. Above this floats a soaring melodic line on a synthetic sound being triggered by the Malletkat (fig. 27).



Figure 27 - Excerpt from score to *Before and After* influenced by the ambient works of Brian Eno.

The chosen instrumentation itself has undoubtedly had an impact on shaping the compositions as well. In writing for the trumpet, I saw a match for the vibraphone in terms of shaping phrases around the combined natural sound decay of these instruments, hence the use of space via rests within the phrasing of the opening melody of *Before and After* (fig. 28). This is again an example of the objective to create a rhythmically floating or melodically soaring aesthetic in my music.



Figure 28 - Opening melodic statement shared by trumpet and vibraphone in *Before and After*.

The use of suspended harmony to obscure a definitive major or minor tonality is also very much present. This harkens back to the quartal/quintal based harmonic compositions of Herbie Hancock (refer to fig. 13).

### **3.1.3 Compositional Aims**

The central aims of this work are:

- To produce a large format structured composition incorporating multiple contrasting movements but still containing unifying materials throughout.
- Use a range of memorable and generally universally accessible melodies and harmonic progressions (i.e. be tonal in nature).
- Draw on the influence of *The Way Up* by Pat Metheny and Lyle Mays in terms of harmonic and rhythmic movement, blending synthetic sounds sources with natural acoustic sounds and overall timbral aesthetic.
- Feature each musician of the ensemble in an improvised solo.
- Use a balance of simple and complex compositional materials.
- Contain long sections of rhythmic ostinato to build tension towards clear release points.
- Transcend the boundaries of being classified as purely modern jazz or new classical.

### **3.1.4 Materials**

The composition makes use of the following:

- Modes and hybrid scales mainly drawn from the Jazz Minor harmonic language.
- A mixture of confluent and incongruous elements drawn from the influences of Modern Jazz, Free Jazz, Ambient, Minimalism, New Complexity and Popular music.
- Long periods of harmonic and rhythmic stasis.
- A broad range in dynamics, texture and rhythm.
- Using the drumkit and electric bass as both timekeepers but also for dramatic effects.

### 3.1.5 Form

There are three main sections or integrated movements overall, with smaller subsections within these for improvised solos and the presentation of new ideas and themes. As stated above, this work is a musical representation of the decision making process which I have identified as a three part process. The only slight anomaly to this is the reappearance of a section from movement 1 at the very end of the composition to serve as a reference to how the events leading up to a decision are a direct influence, but often can only be identified in retrospect when the outcomes of that decision are now apparent in the “after” stage. This motif, serving as a musical representation of a memory fragment, as it is presented at the conclusion of the work, is shown below (fig. 29).

The image displays a musical score excerpt for five instruments: TPT. (Trumpet), Vib. (Vibraphone), E. QTR. (Electric Guitar), Bass, and Dr. (Drum). The score is written in 4/4 time. The TPT. and Vib. staves show a melodic motif starting with a quarter note, followed by eighth notes, and ending with a quarter note. The Vib. staff also includes chord symbols: D-7, Bb7, A-7, and D-7. The E. QTR. and Bass staves show a rhythmic motif with eighth notes and quarter notes. The Dr. staff shows a rhythmic motif with eighth notes and quarter notes. The score is marked with a 'p' (piano) dynamic at the beginning.

Figure 29 - Excerpt from the score of *Before and After* displaying the motif which appears in movements 1 and at the final bars of the composition.

Due to the inclusion of improvised solo sections where the exact number of bars cannot be determined, the composition cannot be expressed structurally in terms of a strict timing of each movement. This is again poignant in its representation of the decision making process as

this can be extremely variable from a split second decision based on instinct or impulse through to grappling with a decision which can take many years upon which to arrive.

The diagram below depicts the structural progression of *Before and After* (fig. 30) but it cannot be accurately depicted in terms of proportionate timings due to the indeterminate nature of the improvised solo sections. Instead, it's purpose is to graphically depict the linear progression of the work whilst highlighting some of the key points during its development.

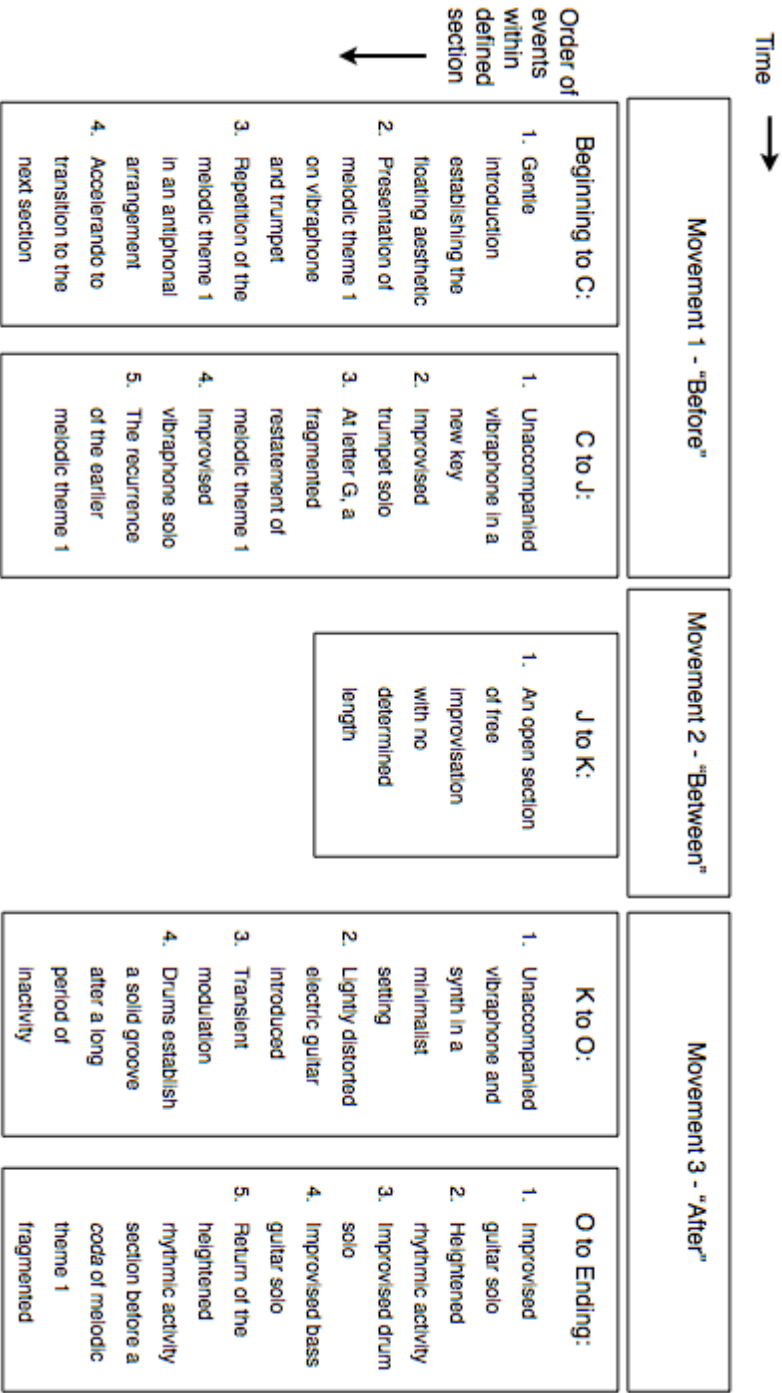


Figure 30 - A diagram showing the linear progression of *Before and After* over time.

### **3.1.6 Process**

Although the clear desire was to create a work inspired by the template of *The Way Up*, the creation of this work was in a somewhat stream of consciousness type of manner involving long exploratory sessions working mainly within the Jazz Minor harmonic language. A conscious choice was made to allow it to evolve slowly through the early part of the first movement in order to ease the listener into this sound world with only slight changes to the rhythmic feel and a statement of the melodic theme twice (the second uses antiphony between the trumpet and vibraphone). From this point on, the composition flowed easily with much of the material drawn from my improvising within the Jazz Minor harmonic structure either at the piano or on the vibraphone until I found a particular melodic motif or harmonic progression that particularly spoke to me.

Harmonically, the composition uses a mixture of more basic tertian harmony and extended Modern Jazz harmony including lengthy periods of suspension chords and cluster chord formations. Due to this, the identification of a true key signature in the traditional sense can be quite ambiguous at times or be interpreted a number of different ways.

Below is an example (fig. 31) whereby the key signature is G Minor yet the presence of the E natural in the melody and the A Minor Seventh chord in the cadence suggests a key of D Minor. Is this E Natural actually effecting a true transient modulation to a new key or simply acting as the Major 6th (or 13th) pitch to create an altered extension note within the G Minor tonality? The latter is an occurrence common in the Modern Jazz harmonic language which is consistently present throughout my compositions and renders the classification of defining a key signature in a traditional Western Classical Music sense obsolete. However there is still a definable Dominant/Tonic relationship, albeit in a camouflaged way at times, present in this work.

11

TPT.

Vib.

E. QTR.

BASS

DR.

(SEND NOTE)

E Natural

8

16

TPT.

Vib.

E. QTR.

BASS

DR.

A-7 D- A-7 8bΔ7 D- G-sus

A Minor 7 Chord

A-7 D- A-7 8bΔ7 D- G-sus

(LET RING) *p* *mp* *f*

(VOICINGS / RHYTHM AD LIB)

(PLAY LINE AD LIB)

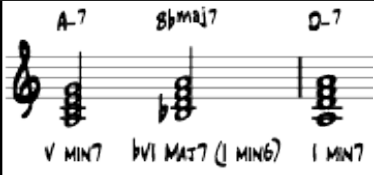
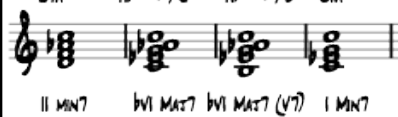
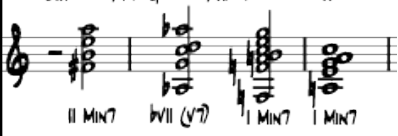

GENTLE GROOVE / LIGHT CYMBALS

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Figure 31 - Score excerpt from *Before and After* displaying the ambiguity in defining the harmony.

One of the most common ways this relationship is camouflaged is via the respelling of the dominant seventh chord into altered versions, which still contain one or both of the all important third and seventh degree pitches within the chord. Coupled with this are occasions where the bass note movement follows the dominant to tonic movement contrary to the suggestion of the harmony stacked above it. Below is a table (table 2) outlining some of these camouflaged harmonic cadence points throughout the first section of this composition.

Table 2 - The various dominant to tonic based harmonic progressions in *Before and After*.

Bars	Harmonic Progression	Analysis
19-20	 <p>A-7    Bbmaj7    D-7</p> <p>V MIN7    bVI MAJ7 (I MIN6)    I MIN7</p>	The root note movement is the Dominant moving up chromatically before resolving to the Tonic. In this sense the Bb Maj7 chord is acting as an inverted D Min 6 chord overriding the root note movement to create the strong Dominant to Tonic pull.
41 - 44	 <p>Dm7(b9)    Abmaj7/C    Abmaj7/B    Cm</p> <p>II MIN7    bVI MAJ7    bVI MAJ7 (V7)    I MIN7</p>	The bass note movement of Supertonic to Tonic, down to the Leading Tone and back to the Tonic creates the Dominant to Tonic pull in the progression. The Ab Maj 7 chord with the B in the bass could be considered a type of Altered Dominant chord (G7) with an omitted 7th.
55-57	 <p>Bm7(b9)/F#    Gsus4(b9)/Ab    Fbmaj7(b9)    A-7</p> <p>II MIN7    bVII (V7)    I MIN7    I MIN7</p>	In this progression the G Sus4 Flat 9 chord is functioning as a rootless Altered Dominant chord (E7) as it contains its 3rd (Ab/G#) and 7th (D) pitches. The F Maj 7 sharp 11 (B) can be respelled as an A min7(add9)/F chord and in doing so is functioning as a variation on a i7 chord. The following shift to a i7 chord (A-7) in second inversion with the root note in the bass solidifies the already alluded to Dominant to Tonic relationship.
63-65	 <p>F#maj7(b9)    Gbmaj7(b9)    A-7</p> <p>VI MIN    bVI MAJ7 (V7)    I MIN7</p>	In this progression the G# Maj 7 chord with a sharp 11 (D) is functioning as a Dominant chord (E7) as it contains the 3rd (G#) and 7th (D) pitches.

Due to this presence of harmony derived from Modern Jazz, the processes for melodic exploration in this work are largely derived from scales or modes linked to certain chord types



and progressions of the idiom. Below is a table (table 3) of the modes or hybridised scales used for extended periods of time along with their corresponding chord sets.

Table 3 - Modes and hybrid scales used in the composition *Before and After*.

Section	Scale/Mode	Associated Chords
Bar 1 - C, G -H, I -J & V	G Natural Minor with natural 6th 	Gm7(sus4) Dm Bbmaj7 A-7 
C - G	A Melodic Minor Scale* with Flat 9th *The F natural and G natural are for the descending version of scale 	Bbm7(sus4)/F# G(sus4b9)/Ab Fbmaj7(#11) F#m11 Gbmaj7(#11) A-7 
H	G Phrygian Mode/Jazz Minor Scale* *Notes in parenthesis belong to the Jazz Minor scale 	Gm11 Abbmaj7(#11) F-7 Ebmaj7(add13) Gb7(#5) 
K-N (except for the first 5 bars of M)	A Jazz Minor/Dorian Mode* *The prescence of the F Natural creates a Dorian Mode 	E7(b13) G(sus4) Dm Bbm7 Fbmaj7 A-7 
O & the first 5 bars of M	E Phrygian Mode 	Em7(b9) Am7(add9) 

Sections Q to T (Bars 219 - 266) offer a more unstable and hard to define harmonic scheme with the use of fully diminished chords and chromatic movement. The motivation for this process is to intensify the tension and uneasiness heading towards the improvised drumkit solo that occurs at letter S.

There are also occasions where the melodic choices are made purely for accommodating a desired effect such as a sequenced phrase or introduced chromaticism to heighten tension or

for ornamentation. Below are some examples of this excerpted from the score (fig. 32, 33 & 34).



Figure 32 - Example of sequenced melodic phrases in *Before and After*.



Figure 33 - Example of introduced chromaticism in the melody to create tension in *Before and After* (the Eb is the flattened 5th of the A minor 7 chord).



Figure 34 - Example of introduced chromaticism in the melody for ornamentation purposes in *Before and After* (The Eb is used to create a bent note style of effect associated with Blues and Jazz music).

Rhythmically, *Before and After* contains long sections of simple rhythmic ostinato, sections where an ostinato accompaniment is juxtaposed with a highly syncopated melodic phrasing and also sections of extremely varied rhythmical activity designed to unhinge the listener

from any sense of definitive pulse in order to create the floating aesthetic aimed for in my music.

A section which highlights the use of ostinato juxtaposed with syncopation is the beginning of the third movement (fig. 35) which emerges out of the preceding “free” section with a sense of clarity as the vibraphone part has a very linear and texturally compact three bar phrase (bars 131-133), which continues to be repeated throughout this section via looping technology. It is inspired by the minimalist melodic cells found in Steve Reich’s music and is also informed by the recurring Kalimba melody in Pat Metheny and Lyle Mays’ *The Way Up*.



Figure 35 - The looped ostinato on vibraphone in *Before and After*.

Layered above this ostinato is a soaring lyrical melody also played by the vibraphonist on synthesizer, which unfolds gently akin to the ambient music of Brian Eno. This synthesizer melody is highly syncopated and ornamented with the use of demisemiquaver rhythms (fig. 36).



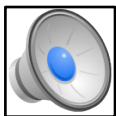
Figure 36 - The melody played on the Malletkat in *Before and After*.

Other rhythmical processes employed are the use of accelerando, unexpected and immediate changes in tempi, odd-meters, odd number triplets and syncopation.

### **3.1.7 Outcome**

This work has fulfilled the objective of creating a multi-movement and multi-style composition. Depending on the length of the improvised solos, it is a composition approaching the proportions of *The Way Up* in terms of overall time length and structural scope. It is well beyond the proportions of a typical Jazz composition and could easily comprise a full set in performance. It provides enough variety and interest during its progression to have created a highly engaging and accessible continuous piece of music for both listener and performer.

Unfortunately, I am yet to be able to test this theory because due to time constraints the final version as it is presented here is yet to have been performed live in its entirety. However, there has been a live performance of an early version of the first, second and the beginning of the third movement that resulted in the observation that to perform this piece as accurately as intended, significant rehearsal will be required. This rehearsal would be to master the ensemble subtleties required to make smoother transitions into moments of silence and greater dynamic contrast truly effective and also for soloists to be truly comfortable with performing an improvisation over the less orthodox harmonic progressions. Please refer to the Audio Example 10 below to hear this live performance of an early version of the work.



Audio Example 10 - Dave Kemp Group performing the first and second movements of an early version of *Before and After*.

## **3.2 “Bent”**

### **3.2.1 Introduction**

This composition began its life as a simple exploratory practice session on vibraphone where I was exploring the extended technique of bending the pitch of an already sounding note by applying force with the other mallet to this note in order to bend the pitch downwards. As I explored this I wrote down combinations of notes that worked well together and came up with the motif below. The intention was to break up the bent pitches with neighbouring pitches in order to highlight the bending of the pitch even more (refer to Audio Example 11 and fig. 37).



Audio Example 11 - Opening of *Bent* exemplifying the pitch bend extended technique on vibraphone.

Figure 37 - Score excerpt of the opening six bars of *Bent* displaying the indication of a downward pitch bend effect on vibraphone.

The other contributing factors to its creation was a desire to create a work that had a forward propulsion and linearity in it's melodicism and multi-faceted in terms of rhythmic styles and moods. I drew on inspiration from my own listening and performance experiences to inform the direction of this work, as outlined below.

### **3.2.2 Influences**

I have always had an interest in the Jazz-funk music of the 1970's as featured in many Blaxploitation movies of the era with a seminal album being *Thrust* by Herbie Hancock. This album drew on material from compositions he wrote for the 1973 film *The Spook Who Sat By The Door*. This music has had a profound effect on me in its use of sophisticated and complex modern jazz harmony within more accessible populist music styles of Soul and Funk, highly melodic and virtuosic bass lines, use of psycho-acoustic effects such as wha-wha, artificial reverbs, delays and distortion, and driving rhythms and repeated vamps more akin to Rock music. The score excerpt below (fig. 38) exemplifies some of these characteristics in a composition from the album *Thrust*.

CONCERT CHART  
MEDIUM PUNK ♩=100

# PALM GREASE

HERBIE HANCOCK

First EX - DRUMS (SOLO)  
2ND X - ADD KEYS  
5TH X - ADD EL. BASS

(PLAY 8 TIMES)

(KEYS)  
(EL. BASS)

DRUM / PERCUSSION BREAK

DRUM BREAK

TO CODA

E-7  
(1ST X ONLY)

L. E. B.  
ON CUE

F-7 (SAX SOLO STARTS 3RD X)  
(PLAY 4 TIMES)

Figure 38 - Score excerpt of the opening section of *Palm Grease* by Herbie Hancock.

Another inspiration for this composition was the music of Miles Davis' groups in the mid 1980's on albums such as *Decoy* (1984), *You're Under Arrest* (1985), and *Tutu* (1986). Much of the material on these albums was composed and compiled in the recording studio by

Marcus Miller who also played bass guitar in Miles' ensembles of the time. Of particular significance are the textural effects of very clean sounds distinctly placed in the extremely wide stereo image along with distributed melodic fragments skittering over long sustained pad sounds used on the album *Tutu*. The excerpt from the score of the opening section of *Bent* below (fig. 39) reflects this.

The image displays a musical score excerpt for the opening section of the piece *Bent*, spanning measures 11 to 13. The score is written for five instruments: Trumpet (TPT.), Vibraphone (VIB.), Electric Quintet (E. QTR.), Bass (BASS), and Drums (DR.).

- Measure 11:** The TPT. part has a rest. The VIB. part features a sustained pad sound with a chord of Gm7(b9)11. The E. QTR. and BASS parts play a rhythmic pattern of eighth notes. The DR. part has a simple drum pattern.
- Measure 12:** The TPT. part has a rest. The VIB. part features a sustained pad sound with a chord of Am7(b9)4. The E. QTR. and BASS parts continue their rhythmic pattern. The DR. part has a simple drum pattern.
- Measure 13:** The TPT. part has a melodic line with a triplet of eighth notes. The VIB. part features a sustained pad sound with a chord of A7(13). The E. QTR. and BASS parts continue their rhythmic pattern. The DR. part has a simple drum pattern.

Annotations include: "(PLAY DOWN OCTAVE IF PREFERRED)" above the TPT. staff in measure 11; "f WITH MUTE TILL BAR 22" above the VIB. staff in measure 12; and "A7(13)" above the VIB. staff in measure 13.

Figure 39 - Score excerpt of *Bent* displaying the textural effects.

Also having been a drummer and percussionist in Latin Jazz ensembles, I have a strong interest in the rhythmic styles of Afro-Cuban music and saw a parallel with the fusing of styles in Jazz-funk in what is known as Afro-Cuban Jazz and Songo music. Groups such as Irakere have been central in developing this musical style and I wanted to pay homage to this

by including influences of this music in this composition. *Songo* music is widely viewed as being literally a fusing of funk rhythm patterns and Cuban instrumentation, melodic phrasing and harmony. Therefore I wanted to create a work to feature all these styles together that were highly influential on my formative musical interests and instrumental development.

### **3.2.3 Compositional Aims**

The central aims of this work are:

- Feature the extended technique of pitch bending on the vibraphone.
- Provide a challenging and stimulating modern jazz harmonic palette for compositional exploration and improvisation.
- Integrate Jazz-funk, Afro-Cuban Jazz, Songo and mid 1980's Miles Davis recordings' musical characteristics successfully in the one composition.
- Create a work with a feeling of forward momentum and excitement.
- Use linear melodic phrasing and investigate the effects of rhythmic displacement.
- Make use of psycho-acoustic effects.

### **3.2.4 Materials**

The composition makes use of the following:

- Modern Jazz harmony including Jazz Minor modes (Dorian b2 and Altered Scales), the bebop dominant scale and diminished symmetrical harmony (commonly referred to as the Whole Tone/Half-Tone Scale or Octatonic).
- The continuous semiquavers ostinato played on the hi-hat common in Jazz-funk, the use of rhythmic patterns on drumkit and electric bass found in Songo music (fig. 40) and rhythmic displacement.
- Uses Wha-wha and Distortion psycho-acoustic effects.
- Uses the muted trumpet sound.
- Incorporates the musical characteristics of the influences as outlined above.



- Uses a technique of distributing rhythmical and melodic phrases/motifs across the entire ensemble either in unison or as solo/featured instances.
- Uses the extremes of texture possible within the instrumentation of the ensemble.

## 1. ***The Songo***

The Songo is one of the first of the Cuban rhythms to be developed for the drumset as against adapting traditional rhythms, and playing them on the kit . Developed by the percussionist “Changuito” in the 70’s this rhythm became very popular in the USA. The following patterns were again transcribed from Enrique Pla but also include some of my own interpretations. In many of the patterns the drummer plays the full Campana pattern. This often complex (but satisfying) device is something all Cuban drummers play today and again can be attributed to Changuito.

### ***Songo Patterns***





Figure 40 - Rhythmic patterns played on drumkit in *Songo* music.

### **3.2.5 Form**

*Bent* is quite clearly a sectionalised piece of music when considering the disparate musical styles contained within the work. On a macro structure level, the work has two distinct larger sections of composed material (Beginning to B and B to the end of D) with smaller divisions within these as detailed by the table (table 4) below. When considering the work's layout in a linear fashion, as it would be presented in performance, it should be noted that there is a *da capo* marking after letter D which extends the work up to the end of bar 25 where *fine* is indicated.

Table 4 - A breakdown of the different sections in *Bent*.

Larger Section	Smaller Divisions of the Larger Sections	Description of the Musical Events in the Smaller Divisions
<b>Beginning to B</b>	Bar 1 - Bar 7	Solo vibraphone using the pitch bending technique.
	Bar 7 to Bar 26	A suspenseful section influenced by 1970's Jazz-funk.
	Bar 26 - Letter B	A short improvised solo on drums to transition to the next larger section.
<b>B to the end of D</b>	Letter B to C	Afro-Cuban style music with unison melodic phrases.
	Letter C to D	Improvised solos of indeterminate length whilst the Afro-Cuban music continues.
	Letter D to the <i>da capo</i> indication (after this the work returns to the beginning and concludes at the end of bar 25)	The rhythmic division changes to seven and new motives are introduced over an ostinato in the bass guitar and drums.

### **3.2.6 Process**

The use of extended techniques is obvious from the outset as there is a bending of the pitch on the vibraphone. Although this effect is achieved acoustically, the presence of pickup technology on the instrument aids in its effectiveness. By utilising this technology, this key consideration in this composition is fully realised, as opposed to its effect being lost without the amplification. Here there is a case of technology enhancing the natural acoustic sound of an instrument beyond its natural capabilities. Also of note is the use of a wha-wha mute on the trumpet to emulate the wha-wha effect also prescribed for guitar at the same time.

It mostly obvious references Afro-Cuban music in the improvised solo section (section C) by incorporating a *tumbao* rhythmic pattern on the electric bass whilst indicating a *songo* groove be played on drums (fig. 41).

50 SOLOS

TPT.

VS.

E. GTR.

BASS

DR.

GSUS

GSUS

Ab7(add11)

(AD LIB VOICINGS)

(LINE AD LIB)

SONGO GROOVE AD LIB (TUMBAO ON BASS DRUM)

Figure 41 - Score excerpt from *Bent* displaying the Afro-Cuban elements of the composition.

Later (in section D), there is also a highly syncopated melodic statement on trumpet reminiscent of the superimposed polyrhythmic phrasing used in Afro-Cuban music<sup>68</sup> whereby it is grouped in divisions of three quavers over the top of a rhythmic ostinato in 7/8 meter to create a polyrhythmic effect. Refer to the Figure 42 and Audio Example 12 below for more information.

TRUMPET RHYTHM - THE ACCENT DENOTES THE FIRST IN EACH GROUP OF THE 3 QUARTER RHYTHMIC CELL.



The notation shows a trumpet part on a single staff with a treble clef and a key signature of one flat (B-flat). The time signature is 7/8. The melody consists of eighth and quarter notes, with accents placed over the first note of each three-quarter rhythmic cell. The bass line is indicated by a downward-pointing arrow and a forte (f) dynamic marking.

ENSEMBLE OSTINATO RHYTHM (DRUMS AND BASS)

Figure 42 - Explanation of the polyrhythmic phrasing of the trumpet in *Bent*.



Audio Example 12 - The trumpet melody polyrhythmically layered over the ensemble rhythm at Section D in *Bent* (the higher pitch is trumpet and the lower is the rest of the ensemble).

<sup>68</sup> Kjetil Bohler, "Groove Aesthetics in Afro-Cuban Jazz: Towards an Empirical Aesthetic Theory". *Studia Musicologica Norvegica Vol 39* (2013): 63-92.

The composition also uses rhythmic displacement to upset the regularity of the pulse. Notable examples of these are the shift of a crotchet back in time at bar 35 (fig. 43), at bar 62 into section D (fig. 44) and also at bar 70 (fig. 45).

This musical score excerpt shows measures 34 and 35 of a piece. The score is written for five staves: TPT. (Trumpet), Vib. (Vibraphone), E. QTR. (Electric Quintet), BASS (Bass), and DR. (Drum). The key signature is three sharps (F#, C#, G#). The time signature changes from 3/4 to 2/4 at measure 35. In measure 34, the TPT. staff has a melodic line with a slur over the first two measures. The Vib. staff has a rhythmic pattern of eighth notes. The E. QTR. staff has a rhythmic pattern of eighth notes. The BASS staff has a rhythmic pattern of eighth notes. The DR. staff has a simple drum pattern. In measure 35, the TPT. staff has a melodic line with a slur over the first two measures. The Vib. staff has a rhythmic pattern of eighth notes. The E. QTR. staff has a rhythmic pattern of eighth notes. The BASS staff has a rhythmic pattern of eighth notes. The DR. staff has a simple drum pattern. A note in the BASS staff at measure 35 is marked with a 'z' and the text '(CHANGE VOICING IF NECESSARY)'. The text 'LOOSE GROOVE' is written at the bottom right of the score.

Figure 43 - Score excerpt of *Bent* displaying rhythmic displacement at bar 35.

This musical score excerpt shows measures 57 through 60 of a piece. The score is written for five staves: TPT. (Trumpet), Vib. (Vibraphone), E. QTR. (Electric Quintet), BASS (Bass), and DR. (Drum). The key signature is three sharps (F#, C#, G#). The time signature is 4/4. In measure 57, the TPT. staff has a whole note chord labeled 'G7(9add9)'. The Vib. staff has a whole note chord labeled 'G7(9add9)'. The E. QTR. staff has a whole note chord labeled 'G7(9add9)'. The BASS staff has a whole note chord labeled 'G7(9add9)'. The DR. staff has a simple drum pattern. In measure 58, the TPT. staff has a whole note chord labeled 'Ab7(9add9)'. The Vib. staff has a whole note chord labeled 'Ab7(9add9)'. The E. QTR. staff has a whole note chord labeled 'Ab7(9add9)'. The BASS staff has a whole note chord labeled 'Ab7(9add9)'. The DR. staff has a simple drum pattern. In measure 59, the TPT. staff has a whole note chord labeled 'Ab7(9add9)'. The Vib. staff has a whole note chord labeled 'Ab7(9add9)'. The E. QTR. staff has a whole note chord labeled 'Ab7(9add9)'. The BASS staff has a whole note chord labeled 'Ab7(9add9)'. The DR. staff has a simple drum pattern. In measure 60, the TPT. staff has a whole note chord labeled 'Em7(9add9)'. The Vib. staff has a whole note chord labeled 'Em7(9add9)'. The E. QTR. staff has a whole note chord labeled 'Em7(9add9)'. The BASS staff has a whole note chord labeled 'Em7(9add9)'. The DR. staff has a simple drum pattern.

This musical score excerpt for *Bent* covers measures 61 to 64. It features five staves: TPT. (Trumpet), Vib. (Vibraphone), E. QTR. (Electric Guitar), BASS (Bass), and DR. (Drums). The key signature has one flat (B-flat), and the time signature is 7/8. A box labeled 'D' is placed above measure 62. The TPT. staff has a whole rest in measure 61 and then plays eighth notes. The Vib. staff plays chords in measures 62 and 63. The E. QTR. staff has a whole rest in measure 61 and then plays eighth notes. The BASS staff plays a continuous eighth-note line. The DR. staff has a drum fill in measure 61 and then plays a steady eighth-note pattern. A dynamic marking of *f* (forte) is present in measure 62. A performance instruction *mf* (CHANGE VOICINGS IF NECESSARY) is written above the E. QTR. staff in measure 64. A note at the bottom reads 'FILL / GROOVE AROUND BASS RHYTHMS'.

Figure 44 - Score excerpt of *Bent* displaying rhythmic displacement at bar 62.

This musical score excerpt for *Bent* covers measures 66 to 70. It features five staves: TPT. (Trumpet), E. QTR. (Electric Guitar), BASS (Bass), and DR. (Drums). The key signature has one flat (B-flat), and the time signature is 7/8. The TPT. staff has a melodic line in measure 66 that is tied across measures 67 and 68. The E. QTR. staff plays eighth notes. The BASS staff plays a continuous eighth-note line. The DR. staff has a drum fill in measure 66 and then plays a steady eighth-note pattern. A dynamic marking of *f* (forte) is present in measure 66.

Figure 45 - Score excerpt of *Bent* displaying rhythmic displacement at bar 70.

Melodically, the composition is mainly using the B Altered scale. On occasions, the natural 9<sup>th</sup>, 4<sup>th</sup>, 6<sup>th</sup> and Major 7<sup>th</sup> are also used, which can be labelled as using the B Diminished Scale in its Half-Tone, Whole-Tone arrangement. The only pitch used melodically not accounted for so far by either of these scales is the F# which is used with other pitches within melodic phrases as either part of a B Dorian flat 2 scale (bars 34 -35) or a B Dominant Bebop Scale (bars 74-75). Please refer to the Figure 46 below for a list of these scales.



Figure 46 - List of scales used in *Bent*.

The harmonic framework of *Bent* is somewhat ambiguous due to the use of extended chords with altered pitches and the aforementioned mixture of various scale types. Many of the chord progressions don't necessarily fall totally within an identifiable key centre in the traditional sense. Despite this, there are implied key centres by using repeated notes in the bass guitar acting as a pedal point, by the content of the melodic phrases or by the inclusion of common tones between chords.

For example, the harmonic progression from bars 9 to 12 (which is repeated another two times) played on the vibraphone are in isolation below along with chord labels (fig. 47).



Figure 47 - The chords used in the vibraphone between bars 9 and 13 in *Bent*.

When considering these chords in isolation, no clear key centre can be determined and there are a myriad of options in chord labeling. However, the actual harmonic pull is back towards A, due to the bass repeating this pitch so often through this section (please refer to fig. 48 and Audio Example 13 below). The fact that the E Major 7 b9 b13 chord (as labelled in the score excerpt below) can be respelled as an A minor b5 13 chord also contributes to this key centre of A minor.

Figure 48 is a score excerpt from *Bent* spanning measures 9 to 22. It features five staves: Vibraphone (Vis.), Electric Guitar (E. Gtr.), Bass, Drums (Dr.), and Trumpet (Tpt.). The Vibraphone part includes chords labeled A, A7(b9), and E major 7(b9) with a pedal point. The Electric Guitar part has a melodic line. The Bass part features a steady eighth-note pattern. The Drums part includes a snare and hi-hat pattern. The Trumpet part has a melodic line. The score includes dynamic markings such as *mf* and *f*, and performance instructions like "SPARSE AD LIB 16THS ON HATS / RIMS" and "WITH MUTE TILL BAR 22".

Figure 48 - Score excerpt from *Bent* indicating the use of pedal point in the bass guitar part.





Audio Example 13 - Bars 9 to 21 of *Bent* showing the key centre being determined by the repeated motif in the electric bass in a type of pedal point technique. Please note this example is for much longer than the score excerpt above in order to offer a fuller confirmation of this process aurally.

Other harmonic progressions make use of incremental interval shifts and common tones between the chords for unity in the composition process and an example is section C where the pitches G and D are used in many of the chords (fig. 49).

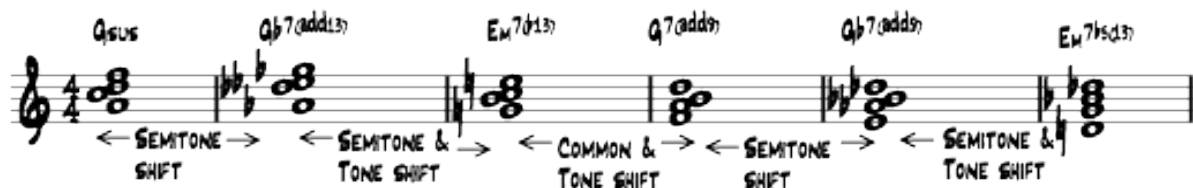


Figure 49 - The harmonic progression and voice leading process used in Section C of *Bent*.

Section D is built on the Bb Octatonic scale (also commonly known as the Whole Tone/Half Tone scale) which was deliberate in order to create a sense of uneasiness in the transition before heading back to the opening section of the work via a D.C. marking.

When perusing the score, Section D could appear to be distinctly different in its divisions of seven quavers per bar, but these bars can be combined in groups of two to reveal an overall pulse of seven crotchets. With this in mind, this section connects onwards from the previous section, which is in four crotchets per bar, with a limited disruption to the rhythmic feel. A casual listener may not even notice this change in meter, which is the intended process of camouflaging the use of odd meters. Figure 50 and Audio Example 14 below displays this process.



Figure 50 - The rhythmic process at Section D in *Bent*.



Audio Example 14 - Aural example of the rhythmic process used at Section D in *Bent*.

The higher pitch is the crotchet pulse and the lower is the rhythmic ostinato in a timing of seven quavers to a bar.

### **3.2.7 Outcome**

The composition achieves the objectives of providing a challenging and stimulating modern jazz harmonic palette for improvisation, varied rhythmic structures with identifiable Afro-Cuban foundations, and the use of extended techniques for timbral effect.

A less than satisfying outcome is that the improvised solo section (Section C) can become somewhat too repetitive and become uninteresting despite an improvisors' best efforts. A reason for this could be the actual harmonic process employed whereby each chord shift is only incremental in terms of interval movement. Of course, this can be varied to a degree with different voicings of chords and placement in instrument registers, but fundamentally the six chords presented are all quite close to each other. Coupled with this is the innately repetitive nature of the Afro-Cuban rhythmic feel of *songo* at this point which has a fairly rigid structure around the *tumbao* pattern on the electric bass.

Some suggestions to ameliorate this is to introduce more sections of new harmonic and rhythmic material for each soloist as the composition progresses, a greater use of dynamics and a less obvious use of the Afro-Cuban rhythmic styles.

### **3.3 “Blues Oddity”**

#### **3.3.1 Introduction**

Fundamental to this composition's inception was a desire to compose a work based on the simple song structure of the twelve bar minor Blues progression, but to fully explore the extremities of what could be possible in terms of harmonic alterations and rhythmic invention. Ultimately, it is an extended example of a riff-based blues and for this reason it does step outside of the usual twelve bar pattern at times.

Another reason for its existence is that when I started to ponder presenting my work for live performance in a modern jazz context, I recalled how many bands like to “loosen up” by improvising over a Blues progression based composition at the very beginning of a performance set. This is common practice in jazz performance and allows for all musicians of the ensemble to present an improvised solo over a familiar form and harmonic progression. This occurred on the accompanying recording and helped set the mood of spontaneity, creativity and high energy for presenting all of the compositions (except *Before and After*).

#### **3.3.2 Influences**

As any jazz musician can relate to, the Blues is usually the basis for getting started with improvising over harmonic progressions. It would take many pages to list all of the influential compositions and artists who have had an impact from this perspective, so therefore I would say all the Jazz musicians I have ever listened to have a part to play. However, the *Blues Oddity* riff is quite reminiscent of the Miles Davis composition *So What* in that there is a lower bass-like voice making a melodic statement, which is then answered by higher instrumental voices in a catchy repetitive rhythm.

I would also like to cite the music of Frank Zappa and his ability to partner cliché passages inspired by 1950's doo-wop music and the complexities of modernist classical composers such as Edgard Varese, at times all in the one composition, as a definite influence on *Blues Oddity*. This is most apparent when investigating the rhythmic manipulation, melodic contour of phrases and the quick changes between the simple blues based riffs and more harmonically and rhythmically complex musical passages in *Blues Oddity*. The score excerpt from *Sinister Footwear* by Frank Zappa shown below reflects this influence of odd rhythmic groupings and polyrhythmic layers on my composition (fig. 51).

The score excerpt for 'Sinister Footwear' by Frank Zappa is presented in three systems. The first system (measures 71-74) includes parts for B. CLS., TEN. V2, SAKES, and BARI. The second system (measures 75-78) includes parts for HNS., TONG., B. TBN., and TUBA. The third system (measures 79-82) includes parts for BELLS, PERC., XYLO., E. GTR., E. BASS, and DR. SET. The score is characterized by complex polyrhythmic layering and the use of odd number groupings (3, 4, 7, 8).

Figure 51 - Score excerpt of *Sinister Footwear* by Frank Zappa displaying the use of odd number groupings and polyrhythmic layering rhythmic devices.

### 3.3.3 Compositional Aims

The central aims of this work are:

- To create a work that successfully combines more simplistic cliché blues elements with some modernist complex ideas.

- Be a much more relaxed composition in which performers can do an improvised solo to commence a performance set.
- To investigate the use of extremes in texture with effects of juxtaposing tutti unison sections alongside unaccompanied solo sections.
- To provide easily identifiable elements of a familiar musical style for listeners.

### **3.3.4 Materials**

The composition makes use of the following:

- Minor blues chord progression with harmonically altered substitution chords as a vehicle for improvisation.
- Rhythmic manipulation including over-the-barline phrasing, triplets, ostinato and a mixture of swung quavers and straight quavers.
- The use of an extended minor blues scale with altered extensions of flattened 9th, 13th, natural 7th, 9th and 13th used on many occasions throughout.
- Use of quartal harmony and harmonic planing effects.

### **3.3.5 Form**

Although the impetus for *Blues Oddity* was the twelve bar blues form, the eventual structural layout of the work does not adhere to this form at all. In fact, it is only the section reserved for the improvised solos which is in this classic twelve bar arrangement in terms of its harmonic progression, but as these solos have an open number of repeats, this section is indeterminate, other than knowing it will be an even number of bars in total.

As it is a riff based blues, there is considerable time devoted to establishing this riff and building its momentum through a process of progressively adding instruments from the work's beginning to letter B, which totals thirty-five bars in all. However, it should be noted that bar numbers 33 to 35 are of different thematic material and really serve as a transitional phrase connecting the two main sections of thematic material.

Therefore, it can be stated that there are two sections in terms of different composed thematic material with the first being the beginning to bar 32, and the second being letters B to D,

before commencing the improvised solos. This creates an almost balanced composition in terms of layout with a section of thirty-two bars and a section of twenty-eight bars respectively, as is reflected in the progression diagram below (fig. 52). After the improvised solos, the composition follows exactly this same form again.

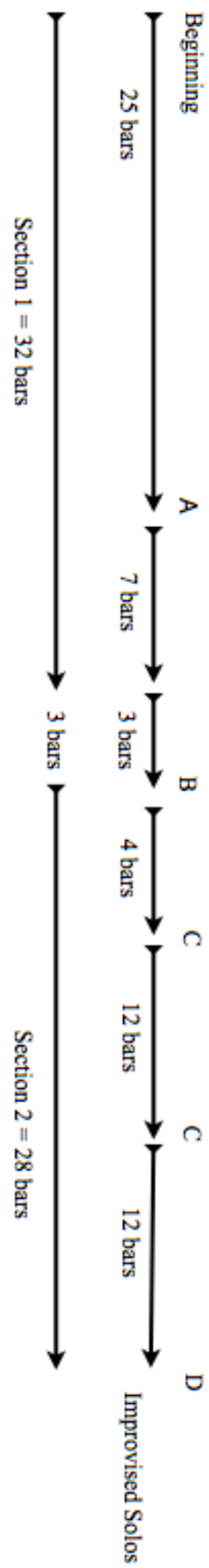


Figure 52 - A diagram depicting the breakdown of the sections in the structure of *Blues Oddity* according to the composed thematic material.

### 3.3.6 Process

A conscious decision was made to make this work in the key of F as this pitch (F) is the lowest (F3) and highest (F6) notes in the three octave range of the vibraphone and would thus allow the greatest scope in terms of range for the work. Also with the idea of creating a riff with a lower and higher voice, I deemed it necessary to place the lower part of the riff in the lowest possible position on the vibraphone. Through experimenting with the F minor blues scale and adding to it so that the major 3rd (actually acting as a sharp nine in this context) and the natural 6th (or 13th when used as an extension) I devised the lower part to the riff (fig. 53) for this composition. With a touchstone reference to *Miles Davis' So What*, I partnered a higher pitched quartal harmony based answer to the lower half of the riff.

It's first stated on unaccompanied guitar before other instruments join in the order of vibraphone, bass guitar and drums, before finally the trumpet plays the second part of the riff a perfect fourth above the vibraphone's highest note.



Figure 53 - The riff from *Blues Oddity* on unaccompanied electric guitar.

This method of stacking instrumental parts in perfect fourths in a parallel or planing movement is commonplace in modern jazz composition as in the example excerpt from *Van Gogh By Numbers* by Joe Locke provided below (fig. 54).



**B**

Musical notation for section B, measures 7-10. The key signature has one flat (B-flat). The time signature is 4/4. Measure 7 contains a triplet of eighth notes (F4, G4, A4) followed by a quarter note (G4), all marked '(vbs/a 4th above)'. Measure 8 contains a triplet of eighth notes (F4, G4, A4) followed by a quarter note (G4), also marked '(vbs/a 4th above)'. Measure 9 contains a half note (F4) and a half note (G4), with the chord E $\flat$ 7 indicated below. Measure 10 contains a half note (F4) and a half note (G4), with the chord C min indicated below. The bass staff shows whole rests in measures 7 and 8, and chords F4 and G4 in measures 9 and 10 respectively.

Figure 54 - Score excerpt from *Van Gogh by Numbers* by Joe Locke illustrating the use of harmonically planing a melody an interval a perfect fourth above.

Contrast is provided from letter B by sections in complete unison between trumpet, vibraphone and guitar, before heading into solos. The material from here is rhythmically diverse as it shifts between swung and straight interpretation of the rhythms, uses crotchet and quaver based quintuplets in bars 42, 45 and 46 and an ostinato phrase using an over-the-barline phrasing device of grouping the phrase in 3 crotchets each (bars 48 – 51) superimposed on the already established four crotchets per bar feel (fig. 55).

38

Tpr.

Vis.

E. Gtr.

Bass

Cy.

**C**

*fill* ..... *fill continues* ..... *PHRASE AROUND THE HORN LINE RHYTHM WRITTEN ON CYMBAL*



Figure 55 is a musical score excerpt for the piece *Blues Oddity*, specifically section C. It is written for five instruments: Trumpet (Tpt.), Vibraphone (Vib.), Electric Guitar (E. Qtr.), Bass, and Drums (Dr.). The score is in a key signature of three flats and common time. The Tpt., Vib., and E. Qtr. parts feature a melodic line with triplets and slurs, while the Bass and Dr. parts have a more rhythmic, percussive line. The score ends with a 'FINE' marking and a '(LAST TIME)' annotation.

Figure 55 - Score excerpt of *Blues Oddity* showing the complex rhythmic devices at section C.

Figure 56 and Audio Example 15 below provide a greater insight into these rhythmic devices (the higher pitch is the ensemble rhythms and the lower is the crotchet pulse).

Figure 56 illustrates the rhythmic devices used in section C of *Blues Oddity*, superimposed over a crotchet pulse. The figure is divided into four staves, each representing a different rhythmic device: STRAIGHT (STRAIGHT 8THS), THE ENSEMBLE RHYTHMS, THE CROTCHET PULSE, and SWING (SWUNG 8THS). The first staff shows the ensemble rhythms with a 3/4 time signature. The second staff shows the crotchet pulse with a 3/4 time signature. The third staff shows the swing rhythm with a 3/4 time signature. The fourth staff shows the straight rhythm with a 3/4 time signature. The figure includes annotations for 'THE CROTCHET PULSE' and 'THE ENSEMBLE RHYTHMS'.

Figure 56 - The rhythmic devices used from section C in *Blues Oddity* superimposed over the crotchet pulse.



Audio Example 15 - The rhythmic devices used from section C in *Blues Oddity* superimposed over the crotchet pulse (the higher pitch is the ensemble and the lower is the crotchet pulse).

### **3.3.7 Outcome**

*Blues Oddity* has proven to be a memorable and entertaining composition in live performance judged from audience reaction and comments. Its highly interactive nature and familiar chord sequence lends itself to being a useful opening composition in performance in order to build rapport between the performers and grabbing the attention of listeners. The complex rhythms can be quite difficult to execute exactly in unison between all performers and prior rehearsal where the phrasing of these rhythms can be discussed and decided upon is highly recommended.

### **3.4 “Matrix”**

#### **3.4.1 Introduction**

The title is in reference to the two main ideas as the impetus for its creation; namely the Coltrane Matrix harmonic sequence and also the sinister and conceptually disturbing nature of the Matrix series of movies and the associated other-worldly synthetic sounds this conjures up in the composer’s mind.

#### **3.4.2 Influences**

The aforementioned Coltrane Matrix harmonic sequence is the basic building block of this work in terms of harmonic framework and intervallic movement. I have worked on these concepts as part of my practice as a jazz vibraphonist and analyzed seminal works of this type such as *Giant Steps* and *Countdown* for performances. This system relies on the cycle of key centres moving in major thirds and effectively outlines an augmented triad of root motion as a result. Figure 57 below shows this cyclic nature of key centres formed from an augmented triad in *Giant Steps*<sup>69</sup>. The character of this harmonic scheme results in a less conventional sound in terms of dominant to root movement but still provides this function in a compelling way.

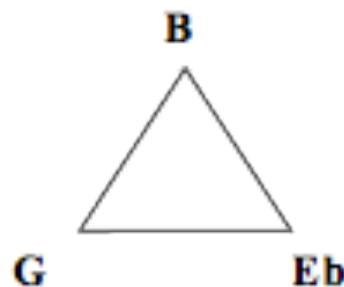


Figure 57 - This diagram illustrates the cyclic nature of key centres formed from an augmented triad in *Giant Steps* by John Coltrane.

The more gritty timbre of synthetic and psycho-acoustically effected sounds found in popular musical styles such as *Trip-hop*, *Drum ‘n Bass* and *Industrial* along with the music of artists such as Amon Tobin, Squarepusher, Portishead and Aphex Twin has had a profound effect on

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<sup>69</sup> Dan Adler, “The ‘Giant Steps’ Progression and Cycle Diagrams” *Danadler.com* Retrieved on August 12, 2013 from <http://danadler.com/misc/Cycles.pdf>

my musical sensibilities since discovering them in my youth in the mid 1990's. As a result I have tended more towards the sonic character of these musical styles and artists when selecting synthetically produced sounds to use in my compositions. *Matrix* has characteristics of this influence in terms of a very low register bass ostinato, obvious use of psycho-acoustic effects and the use of more analog and dirty sounding synthetic sounds as opposed to very clean and digital sounds.

The synthesizer patch (Roland XV5050 Voltage Ctrl Patch # PB:004) used throughout *Matrix* was selected due to its characteristics pertaining to the musical styles outlined above. It has a sonically evolving nature with a descending frequency sweep and links with the tempo of the song excellently (refer to Audio Example 16 below to hear the synthesizer).



Audio Example 16 - The Roland XV5050 Voltage Ctrl Patch # PB:004 as heard in the introduction section of *Matrix*.

As previously mentioned, popular music styles have influenced this composition greatly with the most notable results being the use of a heavy distortion effect on the guitar, the use of rhythmic patterns on drums that are more simplistic and machine-like, synthetically produced sounds and a heavy use of psycho-acoustic effects to the point where the effects themselves are the main focus of interest.

As with my other works, rhythmic manipulation is also a strong influence on *Matrix*. A comparative use of odd-time bars or meters can be found in the works of Geoffrey Keezer and Joe Locke (fig. 58).



Figure 58 - Score excerpt from *Darth Alexis* by Geoffrey Keezer showing an effective use of odd time bars or meters.

### **3.4.3 Role of Technology and the Performance Space**

The intention of the use of technology in *Matrix* is primarily to create a spatial audio experience for the audience. Section F is the area of the composition that features this concept. Extensive recommendations have been provided in the performance notes section of the score for *Matrix* outlining the equipment required to achieve the goal of creating this experience for the audience.

The desired effect is that the real-time ensemble sound coming from the stage through psycho-acoustic effects generates the gradual blending in of the psycho-acoustic effected sound emanating from the speakers into the performance space. In other words, as the ensemble keeps playing they feed the volume and saturation levels of the sound coming from the speakers over time. There will be a point at which the volume and saturation amount of these effects will overpower the real-time sound coming from the stage and the speaker's sound becomes the focus for the audience.

This change will also be a physical phenomenon as the direction of the sound will be seemingly from more directions within the space and the source will be physically a lot closer to the audience. The performance space itself is also a factor as different environments will either diffuse or enhance the volume and clarity of the sound from the speakers.

### **3.4.4 Compositional Aims**

The central aims of this work are:

- To create a work that successfully integrates elements of popular music styles with a particular focus on synthetic sound sources and psycho-acoustic effects.
- To use the Coltrane Matrix harmonic system in an effective way.
- To create a multi-section piece that still flows effectively between sections.
- To create a work with a section where the sense of pulse and measures of time are not strictly dependent on a defined tempo set by the performers, but rather the resultant rate of delay and sound decay produced by psycho-acoustic effects and natural room reverberation.
- To employ spatial audio music principles.

### **3.4.5 Materials**

The composition makes use of the following:

- Advanced modern jazz harmony involving the Coltrane Matrix harmonic system, slash chords creating ambiguous harmonies such as ~~G<sup>+</sup>A17D#~~/Ab and minor major seventh chords.
- Psycho-acoustic effects as a compositional focus in a spatial audio context.
- Rhythmic devices such as displacement via odd time bars, triplets, polyrhythmic layering, pauses of indeterminate length and over the barline phrasing.
- Seemingly disparate influences of elements from popular music styles in terms of instrument timbre and texture.

### **3.4.6 Form**

As *Matrix* is the only work in the portfolio that does not include a section for improvised solos (which possess an indeterminate length), its structural layout is exact. When taking the approach of demarcating the different sections of the composition according to their individual harmonic progressions, three clear sections are created. The pie-chart below (fig. 59) depicts the distribution of each of these sections to give a greater insight into their proportionality within the work. Although there are different time signatures used through the work, the chart has been devised according to the number of individual crotchets within each section as the measure of time, which is a constant throughout (excluding indicated pauses).



- Section 1 (Beginning - D & C - D after the del segno)
- Section 2 (D - E & G - End)
- Section 3 (E - G)

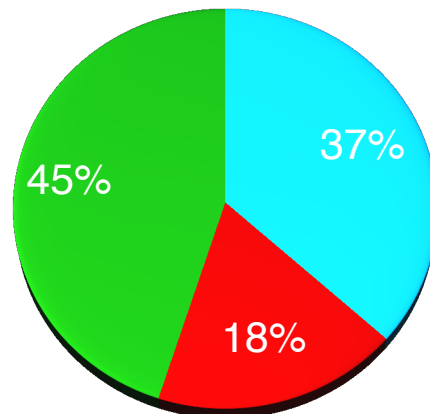


Figure 59 - A pie-chart representing the proportionality of the different sections according to differing harmonic progressions in *Matrix*.

### 3.4.7 Process

*Matrix* is the most adventurous work presented in terms of its ambitious use of psycho-acoustic effects, juxtaposition of quite disparate musical styles and in its textural density. From the outset, this work is concerned with rhythmic displacement and masking the fundamental pulse by using an asymmetrically structured accompaniment (fig. 60).

**MATRIX**

♩ = 100 SLIGHTLY SINISTER

DAVE KEMP

SYNTH/VIBES: C-Δ7, Gm17Δ9/Ab, Ebm17Δ9/E, C-Δ7, C-Δ7

mf SYNTH = ROLAND XV5050 VOLTAGE CTRL PATCH # PR. 004

BASS GUITAR: mf

DRUM SET: p PLAY CYMBAL RHYTHMS AD LIB. RESPONDING TO THE OTHER INSTRUMENT PARTS

Figure 60 - A score excerpt of the opening four bars of *Matrix* displaying the asymmetrical phrasing in the bass and drums accompaniment.

It could be argued that this accompaniment pattern could be re-written in common time as the total number of crotchets across these four bars adds up to four bars of common time. However, the shifting down beat effect facilitated by the 4:3 polyrhythm in the bass guitar and drums in the third bar of each recurring four bar pattern would be less effective due to the

musicians either consciously or subconsciously giving more emphasis to what would effectively be the crotchet pulse after the conclusion of the intended phrase (fig. 61).

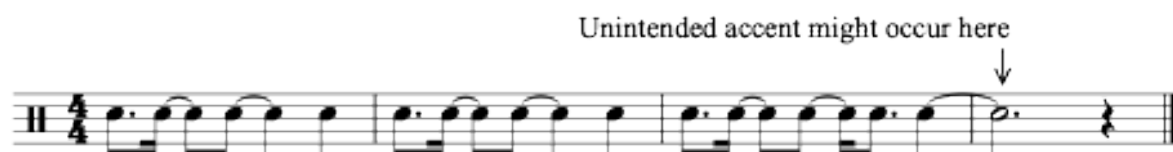


Figure 61 - An explanation of the asymmetrical phrasing used in the opening section of *Matrix*.

Later, the melody uses quintuplets and triplets on top of this accompaniment pattern to add to the rhythmic ambiguity as shown in Figure 62 below.

Figure 62 - Score excerpt from *Matrix* showing the use of tuplets in the melody layered atop an asymmetrically phrased accompaniment.

Adding to this rhythmically floating evocation is the harmonic system at play. On a larger scale, the opening section of the work (till rehearsal mark D) is somewhat statically linked to the key of C when considering each four bar pattern as a whole. However, within each four bar pattern the movement of the chords does not clearly define a key centre as the bass descends in major thirds to outline a C augmented shape thus creating a harmonically unstable situation, mainly due to this sharpened 5<sup>th</sup> inclusion in the bass line (fig. 63).



Figure 63 - The four chord recurring harmonic progression used in the opening section of *Matrix*.

This progression can be identified as using a C Augmented Scale with the added notes of D Natural (2<sup>nd</sup>), G Flat (flattened 5<sup>th</sup>) and a B Flat (flattened 7<sup>th</sup>) within the scale (fig. 64).



Figure 64 - The C augmented scale in treble clef with added pitches included within the scale as used in *Matrix*.

To extrapolate beyond an octave so that these three identified added notes become extended harmony pitches, it's observed that they also form a superimposed augmented triad from the note D, thus forming a kind of “extended augmented” synthetic scale (fig. 65). This transient bi-tonality within each four bar pattern adds to the otherworldly sound of this composition.

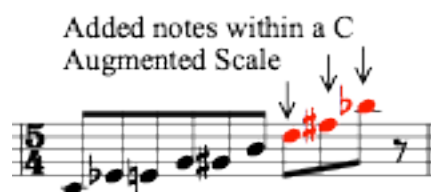


Figure 65 - The C augmented scale in treble clef with added pitches included as extensions above the scale as used in *Matrix*.

This scale could also be identified as a combination of Lydian Dominant (providing the flattened 7<sup>th</sup>), Lydian Augmented (providing the sharpened 5<sup>th</sup>) and Lydian Diminished (providing the flattened 3<sup>rd</sup>) scales as shown in the table (table 5) below.

Table 5 - Types of lydian modes employed in *Matrix* to create a synthetic scale.

Lydian Dominant	1-2-3-#4-5-6-b7 W-W-W-H-W-H-W	C-D-E-F#-G-A-Bb-C
Lydian Augmented	1-2-3-#4-#5-6-7 W-W-W-W-H-W-H	C-D-E-F#-G#-A-B-C
Lydian Diminished	1-2-b3-#4-5-6-7 W-H-H+W-H-W-W-H	C-D-Eb-F#-G-A-B-C

Despite these possibilities in identifying its constituent parts, the fact remains that it's a nine note synthetic scale created by the composer. It should also be noted that there is also an added F natural in the melody on occasions in this opening section until rehearsal mark D, but as it's only used as a passing tone and not in the harmonic accompaniment, it has been omitted from the harmonic analysis above.

At rehearsal mark D the harmonic framework changes momentarily to outline two new chords built on F# Major 7 and F Major 7. The dramatic use of this radical harmony away from what is already established, along with the chromatic slide between each of these chords, adds to the aurally unstable nature of the composition up until this point. These chords are shown in Figure 66 below.



Figure 66 - The two chords used at rehearsal marking D in *Matrix*.

The use of this harmony at rehearsal marking D is coupled with a dramatic change in many musical parameters such as dynamics (*tutti forte*), timbre (distortion on guitar), musical style reference (heavier groove on drums), texture and a use of polyrhythm (4:6 between bass guitar and guitar). These changes can be observed in the score excerpt (fig. 67) provided below.

Figure 67 - Score excerpt showing the changes in many musical parameters at the beginning of section D in *Matrix*.

The melodic statements throughout the work mainly use common interval sets and sequencing (fig. 68).

Figure 68 - An analysis of the interval sets used for a melodic statement in *Matrix* (P5 = perfect 5th, m2 = minor 2nd, P4 = perfect 4th, dim5 = diminished 5th & m3 = minor 3rd).

From rehearsal markings E to G, there is a stark contrast in the composition. It relies on a five bar tonal melody and accompaniment (fig. 69) being repeated many times whilst an excessive reverb/delay effect is gradually introduced until it overshadows the real-time music making. The intention here is to investigate the texture of breaking down the clarity of the real-time instrumental sounds emanating from the stage with the effected sound emanating from strategically placed speakers circulated around the audience until all that is heard is a muddy wash of sound. The principle of using this spatial audio aesthetic is to create a journey into a meditative sonic state as a relief from the rhythmic complexity and harmonic instability from earlier in the composition.



Figure 69 - Score excerpt of the five bar recurring melody and accompaniment used between sections F to G in *Matrix*.

There are also logistical considerations in the performance of this work due to its use of technology. In order to have all the instruments exposed to the reverb/delay effect from rehearsal marking F, there is a requirement to have all instruments either amplified by microphones (drums, trumpet and possibly the guitar amplifier) or as line level sources (the vibraphone/synth and bass guitar via direct injection boxes) in order to feed their collective sound through the psycho-acoustic effects and out to the speakers circling the audience. A further complication is to either have a pre-arranged agreement with the audio engineer to start and stop the reverb/delay effect over the total front of house mix at the appropriate time or for one of the onstage musicians to perform this function if there is no audio engineer for the performance.

As all musicians are occupied with playing their instruments with their hands when the psycho-acoustic effects are to be switched off (bar 80) it will need to be performed using a foot controller. This aspect of the composition therefore adds considerable time for adequately sound checking prior to a performance, needs a mixer capable of accommodating this many channels (up to 9 independent channels assuming there are 4 microphones on the drums), requires the necessary number of microphones be available to achieve this objective and adds possible stress and anxiety to the performance for the performers and audio engineer in terms of reliance on equipment working as expected.

#### **3.4.8 Outcome**

This work was not as successful in live performance as hoped due to the complex nature of the spatial audio component. Due to time constraints and equipment unfamiliarity, the idea of the speaker array to be placed around the audience was abandoned. Instead, the psycho-acoustic effects were still used at the indicated point from the stage sound sources of amplifiers and powered speakers but the spatial effect was obviously lost. Despite this, the harmonic, rhythmic and timbral objectives of the piece were realised effectively.

### **3.5 “Attention Disorderly Deficit”**

#### **3.5.1 Introduction**

This work relies on the infectiousness of a solid groove on drums and an ear catching bass line that hopefully doesn't lead to listener fatigue. It arguably owes more to the practices of sampling and looping common in electronic music production in styles such as Hip Hop than more orthodox Modern Jazz compositional traits. It is from this aesthetic that I started experimenting with devising a catchy bass line whilst improvising on a Fender Rhodes piano to spark it's creation.

As many of the samples used in Hip Hop are actually from Funk music of the late 1960's and 1970's, I followed this thread by adding the use of the Wha-wha psycho-acoustic effect to the guitar that is synonymous with this musical style. I also wanted to maintain a futuristic edge to the composition's sound and decided early on that a lead style synthetic sound would be incorporated at some point.

The word “deficit” in the composition's title is in reference to the rhythmic manipulation that permeates my works whereby there can often be asymmetrical patterns or seemingly deficient numbers of beats to the casual listener. The use of this effect in this work is in an attempt to catch the listener by surprise and grab their attention. The reason for including the word “disorderly” in the title is that it seems no matter what I do, this manipulation of rhythm seems to permeate my musical creations in an almost uncontrollable or disorderly fashion.

#### **3.5.2 Influences**

Influential music styles have been mentioned, but more specifically an influence on *Attention Disorderly Deficit* is the “cutting and pasting” of samples approach of electronic music composition by artists on the British label Ninja Tune. I became interested in this music in my mid-teens and found it inspiring that drum beats and ensemble grooves that are so obviously from different songs could be mashed together to create new cohesive compositions. This approach is very similar to the creative scratching DJ who can blend two or more pre-existing songs (or sections of a song) together cohesively and then manipulate one of them whilst the other is still playing to create a largely percussive effect.



The actual drum pattern devised for *Attention Disorderly Deficit* was a modification of a groove that as far as I can recall I first heard in a song by Red Hot Chili Peppers called *Naked in the Rain*<sup>70</sup>. This song was released on an album (*Blood Sugar Sex Magik*) that was a highly successful worldwide hit at the time I commenced learning drumkit and as a result was very influential on me in these formative years. A transcription of the drum part is below (fig. 70).



Figure 70 - Transcription of the drum beat used in *Naked in the Rain* by Red Hot Chili Peppers which is influential on the rhythmic pattern used in *Attention Disorderly Deficit*.

### **3.5.3 Compositional Aims**

The central aims of this work are:

- To incorporate the concepts and elements from the aforementioned influential musical styles cohesively within the instrumentation of the amplified jazz/rock ensemble.
- Produce an ostinato or vamp based composition with enough interest to hold the listener's attention throughout.
- Successfully incorporate the timbral elements of the aforementioned music styles via using psycho-acoustic effects.
- Include a section for improvisation.

### **3.5.4 Materials**

The composition makes use of the following:

- Modern Jazz harmony such as chords with altered extensions and mixing minor and major tonalities.
- Rhythmic devices such as ostinato, beat displacement, odd time bars, polyrhythms, triplets and syncopation.
- Popular music style elements.

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<sup>70</sup> Red Hot Chili Peppers, *Blood Sugar Sex Magik* (Warner Brothers, 1991, CD)

- Contrary motion and textural diversity.

### **3.5.5 Form**

The work has an asymmetrical structure within the individual sections of its layout when only considering its totally composed sections (beginning to letter D). As the establishment of a solid sense of groove within the ensemble and a strong rhythmic feel is paramount in this work, a fairly long introduction of sixteen bars is included to facilitate this. The next section (marking A to B) is twenty-three bars long and this is followed by the next (section B to C) having a length of fifteen bars, but when all of these aforementioned section are added together, the work is fifty-four bars in length before the first improvised solo.

At the conclusion of the improvised solos there is a return to the very beginning of the work, but this time with four bars omitted from the introduction section, as the ostinato on the bass guitar is firmly established by this point. This section of the work totals fifty bars in length, which in the overall arc of the composition, creates an almost ternary arrangement (there is of course a slight difference due to the omitted four bars). The diagram below provides a graphical representation of the progression of *Attention Disorderly Deficit* (fig. 71).

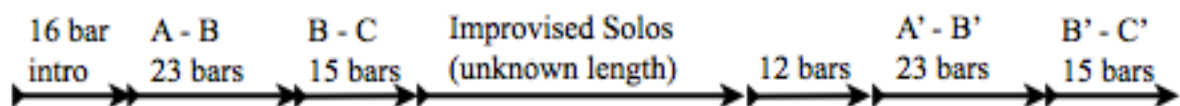


Figure 71 - A flow diagram of the structural layout of *Attention Disorderly Deficit*.

### **3.5.6 Process**

This composition is harmonically ambiguous owing to a recurring bass line based around a key centre of Bb through most of it (fig. 72), which although it clearly confirms Bb as the key centre, the tonality is a mixture of major and minor as it outlines a Bb Major 7, #9, b13 chord (fig. 73).

♩ = 100  
LOOSE FUNKY FEEL  
DAVE KEMP

ELECTRIC BASS

*mf*

LOOSE FUNKY GROOVE AD LIB

DRUM SET

(RIMCLICK SOUND ON SNARE DRUM)

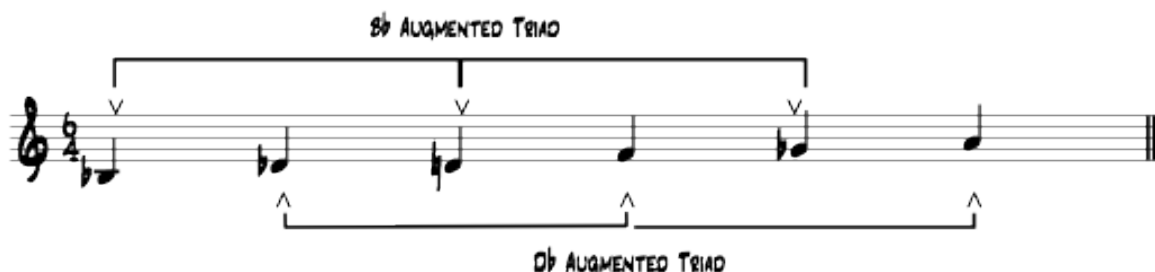
The image shows a musical score for a funk groove. It consists of two staves: Electric Bass and Drum Set. The tempo is 100 beats per minute, indicated by a quarter note symbol followed by '=100'. The key signature has one flat (Bb). The time signature is 3/4. The Electric Bass part starts with a mezzo-forte (mf) dynamic and features a repeating eighth-note pattern. The Drum Set part features a repeating pattern of eighth notes on the snare and bass drum, with rimclicks on the snare. The title 'LOOSE FUNKY GROOVE AD LIB' is written above the drum part.

4/4

← b13

← #9

This collection of notes can also be identified as a type of hexatonic augmented scale shown in Figure 74 below. John Coltrane is cited as using two versions of this scale as a basis for his composition *One Down, One Up*<sup>71</sup>.



The guitar reinforces this ambiguous tonality in its recurring line which is moving in contrary motion to the bass guitar line (fig. 75).



<sup>71</sup> Daniel Voss, “Coltrane Cycles and the Blues”, *uebergreifen.blogspot.com.au* Thursday, September 5, 2013 Retrieved on August 13<sup>th</sup>, 2013 from [http://uebergreifen.blogspot.com.au/2013\\_09\\_01\\_archive.html](http://uebergreifen.blogspot.com.au/2013_09_01_archive.html)

A harmonic sequence of four chords on vibraphone (fig. 76) sits atop of these recurring bass guitar and guitar melodic cells. The four chords are Bb Major 7#5, Bb Minor Major 7, D Minor Major 7 and Bb Major #9. It is this presence of the #9 altered extension tone (C#/Db) throughout all of these chords except the BbMaj7#5, which gives the illusion of a minor tonality. The D Minor Major 7 chord for the purpose of analysis can also be thought of as a rootless voicing Bb Minor Major 7 as it contains all of the same pitches (it's written in the vibraphone part as a D Minor Major 7 chord as it's voiced with the Db and D occurring first within its rhythmic pattern and there is no Bb).



Figure 76 - The four chords played on the vibraphone in the opening section of *Attention Disorderly Deficit*.

The only anomaly to this composition's harmonic language identified above is in bars 51 to 54. Here, there is a cadential resolution of sorts to a Bb Major 7 #11 chord, before the use of quartal harmony in the form of the E9 & Eb9 chords on 4<sup>th</sup> crotchet beat of bar 52, to shift to a Bsus4 chord on the first crotchet beat of bar 54. The Bsus4 chord is effectively operating as a Bb major 7, b9, #11 chord in the context of the Bb key centre tonality as shown in Figure 77 below.



Figure 77 - Score excerpt from *Attention Disorderly Deficit* showing the use of suspension harmony and a cadential point.

When considering the melodic material as a whole, it is all derived from the Bb augmented scale identified earlier, but it also uses the perfect 4th and natural 9th on occasions, thus forming a synthetic Octatonic scale shown in Figure 78 below consisting of Bb(1), C(2/9), C#(b3/#9), D(3), Eb(4), F(5), Gb(b6/b13), A(7).

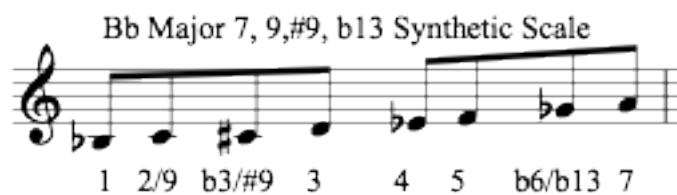


Figure 78 - The synthetic octatonic scale built from the pitch B Flat as used in *Attention Disorderly Deficit* based from an augmented scale.

Upon analysis, it's also beneficial to investigate this scale built from the pitch D (fig. 79), thus forming a scale pattern of D(1), Eb(b2), F(b3), Gb(b4), A(5), Bb(b6), C(b7), C#(7). It's an octatonic synthetic scale formed from the shape of a half-tone, whole-tone, half-tone, separated by a minor 3rd. The closest official scale shape found for this is a phrygian b4 mode, but this doesn't usually contain the major 7th scale degree.

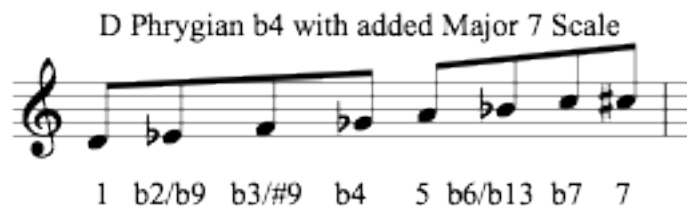


Figure 79 - The synthetic octatonic scale built from the pitch D as used in *Attention Disorderly Deficit* derived from an augmented scale.

It can also be thought of as two minor seventh chords (Eb Minor 7 & D minor 7) stacked on top of each other a semitone apart, thus forming a Poly-Chord (fig. 80).



Figure 80 - A Poly-chord as used in *Attention Disorderly Deficit*.

In the solos section (rehearsal marking C) the chord symbol indication is for an A diminished seventh chord, as the bass guitar line is the only notated part here. The suggestion of an A diminished seventh chord is so that the soloist uses a symmetrical diminished scale in its half-tone/whole-tone arrangement (fig. 81) which is in effect built from the seventh scale degree (A) of the Bb synthetic scale (fig. 78) in order to provide a fresh tonal framework for melodic invention.



Figure 81 - The suggested scale for the improvisation section at rehearsal marking C of *Attention Disorderly Deficit*.

This diminished scale still contains many notes in common with the Bb Major 7 (9,#9,b13) Synthetic Scale (A, Bb, C, C#, Eb, F#/Gb) but has the added dimension of using the pitch G (6th or 13th of the Bb key centre), which has only been used in the composition on one occasion up to this point (bar 51). The rationale here is to provide a clear distinction between

the improvised solo section and the other sections of the work, and to afford the improviser greater choice in note selection.

This composition makes use of rhythmic displacement with the most common device being to shift the music earlier by either a single semiquaver (bar 50) as shown below (fig. 82).

Figure 82 - Score excerpt from *Attention Disorderly Deficit* showing the rhythmic displacement of the pulse forward by one semiquaver.

This process also occurs by a quaver (bar 57 – the 4<sup>th</sup> bar of the repeated solo section chord progression) as shown below (fig. 83).







Figure 85 - Rhythmic processes in the trumpet part for *Attention Disorderly Deficit*.

### **3.5.7 Outcome**

This work has effectively captured the infectious grooves of the discussed highly influential popular music styles. The partnering of a complex harmonic language with a largely somewhat simple repetitive ostinato throughout the piece brings an added dimension to my compositional style. In the second live performance of this work (Video Example 12) the improvised solo section was expanded to include a type of controlled free improvisation whereby the vibraphonist, guitarist and trumpet player all interacted with each other in the moment. This is a concept I would like to explore and develop further.



Video Example 12 - The video of interactive improvised soloing between vibraphone, guitar and trumpet at the second live performance of *Attention Disorderly Deficit*.

### **3.6 “Delicate”**

#### **3.6.1 Introduction**

This composition is dynamically and stylistically more subdued than the other works included in the portfolio of compositions. I have always wanted to have a diverse repertoire of original material for performance and felt that a piece more akin to a ballad would be of value to this project. I also wanted to create a vehicle for displaying the naturally sustained sound of the vibraphone to really show off its more usual timbral connotations of a floating and ethereal sound.

#### **3.6.2 Influences**

As discussed earlier, the music of Pat Metheny has been a great inspiration for me and with *Delicate* I was taking encouragement from his works such as *Always and Forever*<sup>72</sup> and *In Her Family*<sup>73</sup> that feature acoustic guitar in a jazz ballad style and present a much more subtle accompaniment from the other musicians in the ensemble.

The work is still not devoid of my now characteristic rhythmic manipulation quirks, but overall it is a much more straightforward enterprise in this regard. I took a cue from the workings of ballads from mainstream popular music by Jazz musicians and composers such as Joe Locke’s versions of *Ain’t No Sunshine* and *I Can’t Make You Love Me*<sup>74</sup> in that I dictated a very straight groove on the drums with a clearly discernible backbeat. For this reason, it is ultimately early Rhythm and Blues and Gospel music styles via contemporary Rock and Pop music that have filtered through to influence *Delicate*. These styles have also influenced the harmony used with much less focus on the extended harmonies and synthetic scales of Modern Jazz.

#### **3.6.3 Compositional Aims**

The central aims of this work are:

- Create a softer ballad style composition whilst still retaining smaller elements of my compositional style.

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<sup>72</sup> Pat Metheny, *Secret Story* (Geffen, 1992, CD)

<sup>73</sup> Pat Metheny, *Still Life* (Geffen, 1987, CD)

<sup>74</sup> Joe Locke, *Lay Down My Heart* (Motema Music, 2013, CD).

- Provide a composition that is lyrical and vocal like in its melodic statements.
- Feature the vibraphone as a highly sustained and ethereal timbre.
- Present a work that is starkly different to the others in the composition folio.

#### **3.6.4 Materials**

The composition makes use of the following:

- Simpler tertian harmony with less altered extensions.
- A mixture of unaccompanied solo texture featuring the vibraphone and restrained tutti sections.
- Instrumentation including brushes on drumkit and nylon string acoustic guitar (either through a microphone or using pickups) rather than electric guitar to emulate a timbre akin to the Pat Metheny compositions cited earlier.
- Minimised use of trumpet during the composed sections of the composition (the trumpet player is still encouraged to perform an improvised solo).
- Sections of unison melodic statements between guitar, vibraphone and bass to create a thinner texture.

#### **3.6.5 Form**

*Delicate* is more conventional in its structural layout in comparison to the other works of the portfolio. It has more clearly definable sections akin to orthodox jazz composition such as a largely unaccompanied introduction, a presentation of the main melody much like the “head” of a jazz standard and an improvised solo section for multiple instruments in succession over the same repeating chord progression. There is also a short coda drawn on material from earlier in the composition with the effect on the listener being that of a logical conclusion seamlessly continuing on from the restatement of the main melody, rather than an obviously new concluding section to the work.

### 3.6.6 Process

As *Delicate* is more akin to a ballad, the audible rhythmic feel provided by the drumkit and bass is mostly in a cut-time division of the four crotchet measures as explained by Figure 86 below.

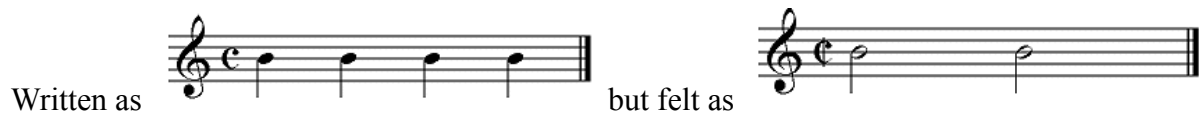


Figure 86 - A visual explanation of cut-time rhythmic feel as used in *Delicate*.

It still retains some of the exploratory rhythmic concepts of my composition style and some use of the extended harmonies of modern jazz, but in a more conventional setting, due to its clear C Minor/Eb Major tonality and more standard structure. There is still a certain degree of beat displacement and rhythmic shift evident from the opening statement on unaccompanied vibraphone, as shown in Figure 87 and Audio Example 17 below, with a repeated melodic cell placed a quaver later to the off-beat after count one in the third bar, and it also contains a bar of nine quavers to account for this offset melodic line.



Figure 87 - The unaccompanied vibraphone part at the beginning of *Delicate*.



Audio Example 17 - The unaccompanied vibraphone part at the beginning of *Delicate*.

There are also unexpected moments of rhythmic deviation with bar 14 containing a full bar of written silence barring any fill the drummer may play (in performance, the effect is that the

tail of natural reverb created by the ensemble will effectively still fill this silence to a certain degree, dependent on the acoustics of the venue) and thus creating a type of resetting of the listeners ear ahead of the entire ensemble entering at bar 15 in a more orthodox homophonic arrangement (fig. 88 & Audio Example 18). The desire of this is to create an effect of anticipation in the music.

Figure 88 - Bars 14 and 15 of *Delicate* showing the use of silence to mark a new section.



Audio Example 18 - section of *Delicate* showing the use of silence to mark a new section.

A subtle change to the underlying pulse of the music occurs at bar 25 as shown in Figure 89 and Audio Example 19 below, whereby five crotchet beats are inserted. This gives the effect of an extra beat added in the bar and prepares the listener and performer for the following downbeat with a sense of anticipation for what is ahead. It also affords a moment's respite from the almost “perpetuum mobile” style of flowing quavers of the preceding section. It also helps achieve the floating quality strived for in my compositional style.

23 (PLAY 2ND TIME ONLY INTO THE SOLOS SECTION)

TPT. *p* *mp* *p* To CODA (AFTER SOLOS)

Vib.

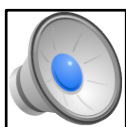
GTR. *Am7(11)b9*

BASS *Am7(11)b9*

Dr. TO STICKS ON THE REPEAT INTO THE SOLO SECTION

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Figure 89 - Score excerpt of *Delicate* showing the use of a bar of five crotchets.



Audio Example 19 - Score excerpt of *Delicate* showing the use of a bar of five crotchets.

Throughout the work, the vibraphone and guitar share dual duties of melodic playing and harmonic support. Exactly the same melodic content is presented on both instruments to create a contrast of timbre and explore the harmonic accompanying roles that both instruments can achieve. Coupled with this, is an exploration in instrumental range, rarely used in the other works of the included folio. This is featured from the outset of the composition in the statement of the melodic theme on unaccompanied vibraphone where the lowest (pitch F3) and second highest notes (pitch E6) of the instrument are used. The trumpet is used quite sparingly in a capacity of reinforcing the melodic line and adding a brighter colour to the ensemble's timbre in key cadential moments as displayed in Figure 90 and Audio Example 20 below.

Figure 90 - Score excerpt of *Delicate* showing the use of trumpet.



Audio Example 20 - Excerpt of *Delicate* showing the use of trumpet.

### **3.6.7 Outcome**

This work achieves the objectives of providing a contrasting style to the other works of the folio, explores a more subtle timbre and incorporates rhythmic elements of more commercially popular music styles. The use of nylon string acoustic guitar definitely added to this contrast substantially. The simpler harmony largely based in the one clearly definable key also lends itself to the performers being more comfortable to explore rhythmic ideas and be perhaps more expressive in their improvised solos than with some other folio works.



### **3.7 “Dutch”**

#### **3.7.1 Introduction**

This work is representative of the disparate musical styles influencing my composition approach and is an attempt to provide a more open-ended composition to encourage a more spontaneous style of improvisation between the ensemble musicians. Its title is in reference to the book *New Dutch Swing*<sup>75</sup> I was reading at the time exploring the influences on the avant-garde jazz music developed in the Netherlands during the 1970’s centred around the birth of the Bimhuis scene. I drew a parallel with their concept of creating a music not bound by genre normalities in the works I’ve been creating, especially with this composition.

#### **3.7.2 Influences**

Taking a cue from the listening experiences I’ve had of Free Jazz, elements of this genre, albeit in a controllable way, are manifest in *Dutch*. An exponent of this style (although to a lesser extent than pioneering artists of the genre such as Ornette Coleman) that are influential on *Dutch* is the ensemble Herbie Hancock had in the early 1970’s named Mwandishi and in particular their album release *Crossings*<sup>76</sup>. This album has had a profound effect on me as it contains sections of free-form improvisation and highly structured composition in a homogenous way. It is the compositional approach of having a solid rhythmic ostinato in the drumkit and bass whilst layering much more free and harmonically ambiguous material over this that I have really identified with.

As the music of Herbie Hancock’s Mwandishi group was also incorporating elements of the Jazz-funk, Fusion and Rock music around at its time, I too looked to musical genres of my time that I could incorporate with the Free Jazz elements of *Dutch*. I took on influences from the electronic music styles of Jungle and Drum ‘n Bass that have been prevalent since the early 1990’s and incorporated some of their characteristics in *Dutch*. Notable elements of these styles are recurring bass lines with long durations in a legato style phrasing matched with fast paced and skittish rhythms, mainly in the form of sped up drum beat samples. Layered above these elements, is usually a slowly evolving synthesizer pad sound or electric piano with a heavy reliance on suspended harmony chords. I saw the pickups only sound of

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<sup>75</sup> Kevin Whitehead, *New Dutch Swing* (Billboard Books, 2000)

<sup>76</sup> Herbie Hancock, *Crossings* (Warner Bros, 1972, CD)

the vibraphone and my chosen palette of synthetic sounds from the Roland XV5050 to be apt for this role.

Also of consideration was the desire to create an effect whereby the trumpet is in stark contrast to the ensemble when it first enters. This thinking can be traced to the timbral and textural effects used for the trumpet in Miles Davis' recordings such as *In a Silent Way*<sup>77</sup> and *Bitches Brew*<sup>78</sup>. On these recordings, the trumpet sound is drenched in reverb and delay psycho-acoustic effects so as to create a hugely expansive virtual space separate to the rest of the ensemble in which it is being played.

### **3.7.3 Compositional Aims**

The central aims of this work are:

- Create a more open composition conducive to free form improvisation and timbral exploration.
- Marry the aforementioned Free Jazz and Electronic music styles in the one work.
- Create a work that can perhaps relate and appeal more to people in audiences not so familiar with Modern Jazz.

### **3.7.4 Materials**

This composition makes use of the following:

- A repeated bass melody throughout akin to a Ground Bass concept.
- Heavy use of an ever-evolving synthetic pad sound through most of the composition.
- Indications to improvise in a timbral and textural manner instead of purely in a melodic and harmonic approach.
- Extended techniques of playing the vibraphone with the wooden shaft of the mallets, using a straight mute on the trumpet and the use of psycho-acoustic effects on guitar.
- Use of odd time bars, polyrhythms, tuplets and over the barline phrasing.
- Polytonal/Bitonal and harmonic planing effects.

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<sup>77</sup> Miles Davis, *In a Silent Way* (Columbia Records, 1969, CD)

<sup>78</sup> Miles Davis, *Bitches Brew* (Columbia Records, 1970, CD)

### 3.7.5 Form

The structure is very open in terms of the length of each individual section of the work, but there is still a clear linear order to its progression. The introduction which is considered to be until the trumpet plays the melody on the fourth crotchet of the second bar after rehearsal marking A is totally indeterminable in length as it relies on the gradual textural build up of the ensemble and is dependent on when the trumpet player feels they want to start playing (fig. 91).

The image shows a musical score excerpt for a piece titled 'Dutch'. It consists of two systems of staves. The first system is labeled 'INTRO' and 'REPEAT THE 2 BAR BASS VAMP INDETERMINATELY WHILST VIBES/SYNTH, GUITAR AND DRUMS CREATE ATMOSPHERIC SOUNDS AND EFFECTS ETC.' It features a tempo marking of 160 and a key signature of one flat. The second system is labeled 'A' and 'TRUMPET (WITH STRAIGHT MUTE) PLAYS MELODY WHEN READY'. It includes a rehearsal mark 'A' and a dynamic marking 'f'. The score is written for a trumpet and a bass guitar/vibraphone/synth ensemble. The bass line is a continuous 2-bar vamp. The trumpet enters with a melody on the fourth crotchet of the second bar after rehearsal marking A. The vibraphone/synth and guitar play phrases built on the indicated harmony. The score ends with a double bar line and a repeat sign.

Figure 91 - Score excerpt of *Dutch* showing the introduction section and beginning of section A.

The following sections which feature improvised solos also have no set number of repeats and instead rely on the musicians indicating to each other when to move to a new section in performance. A representation of the structural layout of *Dutch* is provided by the table (table 6) below, but it must be kept in mind that all of the individual sections' content and length are changeable at every performance of the work except for sections A and B.

Table 6 - The structural layout of *Dutch* outlining the key developments within the individual sections of the composition.

<b>Introduction</b>	The bass guitar ostinato established and the exploratory timbral variations explored on drums, vibraphone, synthesizer and electric guitar via psycho-acoustic effects. Generally, this section is harmonically static on a D suspended chord.
<b>Section A</b>	Trumpet enters with the written melody and establishes a type of bi-tonality in it's melodic content layered over the already established suspended harmony. The length of this section is consistent at all performances. The rhythmic activity becomes more solid and a sense of pulse is more firmly established in the drums through this section.
<b>Section B</b>	At this point, a solid and definable drum groove is presented which locks in with the bass guitar ostinato and the vibraphone also takes on the melody duty with trumpet. The length of this section is consistent at all performances.
<b>Section C</b>	Improvised solo of indeterminate length on vibraphone over a repetitive vamp of seven bars of four crotchets in length plus the last of which is only three crotchets. The rhythmic activity will heighten through this section.
<b>Section D</b>	Improvised solo of indeterminate length on guitar over a repetitive two bar vamp of four crotchets, followed by a bar of three crotchets. The rhythmic activity will achieve a peak during this section.
<b>Section E</b>	Improvised solo of indeterminate length on trumpet over a repetitive two bar vamp of four crotchets, followed by a bar of five crotchets. Harmonically the music returns to the more static nature of the suspended harmony of the opening section at this point. The rate of rhythmic activity will gradually lessen over this section until the final bar being held by a fermata pause.

### **3.7.6 Process**

As there are many variables inherent in the work in terms of form, harmonic modality, dynamic contour and textural density, the only real constants are the repeated melodic ostinato on bass guitar, tempo, stylistic rhythmic feel and general harmonic indications. These variables identified above were included to promote a greater level of interactivity between the musicians in performance and support the ethos of Free Jazz, whereby there is no possibility of replicating a performance.

This idea was taken even further in the second live performance of the work (which occurred after the studio recording) where it was decided to add an improvised solo on drumkit between the guitar solo and the trumpet solo. The ensemble continued to repeat Section D with both guitar and the Synthesizer playing the vamped chordal rhythmic hits in unison. The results of this are presented in Video Example 13 below.



Video Example 13 - The improvised drumkit solo added into *Dutch* at Section D in the second live performance.

An intention to create a stark contrast at the trumpet entry after rehearsal marking A by setting this melody in a different key centre to the already established D suspended harmony is present. This process could be considered a type of polytonality or bitonality as the D suspension chord can be interpreted as belonging to more than one key, the fact that the bass guitar melodic ostinato is really centred around the pitch G as the key centre (the suspended fourth in the D suspended chord) and the harmonically dissonant pitches used in the trumpet melody can be thought of as altered extensions or chord tones not in keeping with the suspended harmony at work, as listed in the table below.

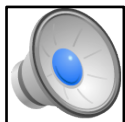
Table 7 - The interpretation of harmonically dissonant pitches used in the trumpet melody at Section A in *Dutch*.

Pitch	Place in Key of D Sus	Place in Key of G Sus
E Flat	Flat 9	Flat 13 or Sharp 5
G Flat	Major 3	Major 7
B Flat	Flat 13 or Sharp 5	Minor 3

An excerpt (bars 19-23) of Section A of the work where all of these harmonically dissonant pitches are used is provided in Figure 92 and also in Audio Example 21 below of the entire Section A of *Dutch*.



Figure 92 - Score excerpt of *Dutch* showing the use of harmonically dissonant pitches.



Audio Example 21 - Trumpet melody at Section A displaying the use of polytonality or harmonically dissonant pitches.

### **3.7.7 Outcome**

*Dutch* has achieved the objectives of being a more free form style of composition and generating a heightened sense of interaction between performers within the ensemble. The use of a synthetic pad sound did evoke the electronic music styles discussed to an extent, but perhaps the integration of a greater range of synthetic sounds including percussive sounds filtered through delay psycho-acoustic effects would achieve this objective more admirably.

I feel the decision to add an improvised drumkit solo for the final version as it appears in the Portfolio and Video Example 13 has had a positive effect on the overall form and flow of the composition. In earlier versions, I did always feel that the change from the end of the improvised guitar solo which was usually by then quite frenzied and highly exciting via the

2:3 polyrhythmic ensemble hits and onwards to the trumpet solo was too sudden and left a feeling of deflation.

### **3.8 Concluding Remarks**

Overall, these compositions provide a collection of music which can easily be identified as examples of the Modern Jazz genre with consistent effective compositional methods of widespread rhythmic invention, less orthodox harmonic systems and incorporate technology based timbral variation. Their creation has extended my compositional language and process considerably to the extent that I now feel there is a definitive compositional style emerging which effectively addresses the key considerations of integrating acoustic, electro-acoustic and synthetic sound sources to create a well blended and balanced set of works for live performance.

## **Chapter 4 - Conclusion**

Undertaking this project has been a journey of self-discovery into my emerging compositional identity, the influences that have helped shape my compositional language, and the specific methods of my archetypal contemporaries. I set out to answer the question of what the key considerations and effective methods are for composing modern jazz music in a live performance context using acoustic, electro-acoustic and synthetic instrumentation to ultimately discover there are only a few commonalities between the various archetypes examined. It appears that there is no definitive comprehensive guide or exact prescription for music creation to discover, only mainly some helpful advice to do with using non-acoustic sound sources, from those with more experience.

Addressing the key considerations first, the need for blending the acoustic sounding instruments and the other electronic instruments and sound elements cohesively is of paramount importance. Also keeping the technology as simple as possible in terms of logistics and operation is a key consideration. These observations support the idea that even though with technology the possibilities are almost limitless in terms of sound manipulation or synthetic sound generation, the practicalities of setup time and control of live sound during a performance far outweigh the creative pursuits in the end.

Reflecting on my own journey, I commenced the project with ambitious ideas of implementing a laptop computer, sound modules and all manner of control devices such as touch screens and MIDI controllers only to realise that the technology was hindering the compositional process. So much time was being spent on integrating the overall setup and working out how best to implement the plethora of equipment, that not much music was actually being composed! Only once I started to delve deeper into my research and learn the pitfalls others have encountered did I manage to focus more on music creation, rather than technology integration.

It also became apparent that as the complexity of the technology increases, the individual performer's level of comfort when performing in a live context decreases. As improvised music requires a certain level of clear-headedness for ideas to flow and make logical musical statements, this could easily result in a sub-standard performance, thereby rendering the compositions themselves inadequate. The fact that the majority of the Questionnaire



participants cited simplicity as an overriding factor in implementing technology shows the importance of this point as a key consideration.

Compounding matters further is the requirement for any non-traditional instruments (such as the Malletkat) be learnt as an additional instrument, rather than transferring existing instrumental technical skills, as they are highly idiosyncratic. This usually results in the composer and the performer being the same individual and therefore blurring the distinctions between the two roles. Furthermore, this individual takes on the role of music technologist to a certain extent. This can also lead to the technology itself becoming a guiding principle in the composition process, whereby a particular synthetic sound's timbre is the catalyst for creativity as stated by Jeremy Barnett in his Questionnaire response.

When considering effective compositional methods, it is the creative use of rhythm and the careful placement of events along the musical timeline that shone through as a guiding principle in the music I researched, and subsequently in my own works. It is this fundamental control of timing in music composition that determines the effectiveness in connecting with the listener and rules over form, harmonic movement and textural density. If the musical statements don't proceed in a logical manner within the temporal framework of the piece, the effectiveness of the employed compositional methods is diminished. The use of sections with heightened rhythmic activity alongside periods of silence and sparseness are triggers for tension and release, thus providing the emotional programming of the music.

By investigating the key considerations and compositional methods for live performance of my contemporaries I revealed a commonality between my compositional style and theirs in terms of rhythmic principles and devices, multi-genre influences and using the myriad of materials and processes that are now part of the present day Modern Jazz harmonic language. This has reassured me and validated that my compositional voice has strong foundations from which to continue to evolve into a more mature artistic statement.

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## Appendix A - HREC Approval Letter for the Questionnaire



**RESEARCH INTEGRITY  
SCM Low Risk Human Research  
Ethics Committee**

Web: <http://sydney.edu.au/ethics/>  
Email: [ro.humanethics@sydney.edu.au](mailto:ro.humanethics@sydney.edu.au)

**Address for all correspondence:**  
Sydney Conservatorium of Music C41  
The University of Sydney  
NSW 2006 AUSTRALIA

Ref: SCM0003

17 December 2012

Mr Daryl Pratt  
Sydney Conservatorium of Music  
The University of Sydney  
Email: [daryl.pratt@sydney.edu.au](mailto:daryl.pratt@sydney.edu.au)

Dear Mr Pratt

Thank you for your correspondence dated 17 December addressing comments made to you by the SCM Low Risk Human Research Ethics Committee (HREC).

On 17 December the Chair of the HREC considered this information and approved your protocol entitled "An investigation of composition approaches and the use of technology in modern jazz music for performance from a jazz vibraphonist's perspective".

Details of the approval are as follows:

**Protocol No.:** SCM0003  
**Approval Date:** 17 December 2012  
**First Annual Report Due:** 16 December 2013  
**Authorised Personnel:** Mr Daryl Pratt  
Mr David Kemp

**Documents Approved:**

Document	Version Number	Date
PIS	5	16/12/12
Email invitation	2	13/10/12
Questionnaire	2	13/10/12

HREC approval is valid for four (4) years from the approval date stated in this letter and is granted pending the following conditions being met:

**Condition/s of Approval**

- Continuing compliance with the National Statement on Ethical Conduct in Research Involving Humans.
- Provision of an annual report on this research to the Human Research Ethics Committee from the approval date and at the completion of the study. Failure to submit reports will result in withdrawal of ethics approval for the project.
- All serious and unexpected adverse events should be reported to the HREC within 72 hours.

SCM Low Risk Human Research Ethics Committee  
Dr Helen Mitchell  
T: +61 2 9351 1250  
E: [helen.mitchell@sydney.edu.au](mailto:helen.mitchell@sydney.edu.au)

ASN 15 211 513 464  
CRICOS 00025A

- All unforeseen events that might affect continued ethical acceptability of the project should be reported to the HREC as soon as possible.
- Any changes to the protocol including changes to research personnel must be approved by the HREC by submitting a Modification Form before the research project can proceed.

**Chief Investigator / Supervisor's responsibilities:**

1. You must retain copies of all signed Consent Forms (if applicable) and provide these to the HREC on request.
2. It is your responsibility to provide a copy of this letter to any internal/external granting agencies if requested.

Please do not hesitate to contact me should you require further information or clarification.

Yours sincerely



**Dr Helen Mitchell**  
Chair  
SCM Low Risk Human Research Ethics Committee

cc: Mr David Kemp  
dkem9893@uni.sydney.edu.au

This HREC is constituted and operates in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2007), NHMRC and Universities Australia Australian Code for the Responsible Conduct of Research (2007) and the CPMP/ICH Note for Guidance on Good Clinical Practice.

## **Appendix B - Invitation Letter for the Questionnaire**

As the questionnaire was conducted via email, the invitation letter itself contained the mechanism for participants to give their consent to take part via a checkbox system embedded in the document. It was also understood that if participants responded by completing the questionnaire and sent it back, that this obviously showed their willingness to take part. There was also a provision for participants to complete the questionnaire but remain anonymous should they wish. The underlined text in the scan of the document below denotes where amendments were made between the previous version of this document and the final version presented here, as is the convention during the ethics approval process.



**Daryl Pratt**

*Chair of Percussion Unit*

*Senior Lecturer in Composition & Music Technology*

Dear .....

This letter is an invitation to consider participating in a study I am conducting as part of my research master's degree in composition at the Sydney Conservatorium of Music (University of Sydney) under the supervision of Daryl Pratt (Chair of Percussion Unit). I would like to provide you with more information about this project and what your involvement would entail if you decide to take part.

My topic of research is composing music for a modern jazz ensemble combining acoustic, electro-acoustic and synthetic instruments and effects for live performance. I am a vibes player who uses pickups and a Malletkat along with other effects such as looping pedals. An aim of my project is to answer the question: When creating new compositions for performance by a modern jazz ensemble of acoustic, electro-acoustic and synthetic instrumentation, what are the key considerations and effective compositional methods to employ?

I am conducting research into practitioners in the field via a questionnaire distributed and returned by email. Your involvement in answering the questions will aid my research project in affording it greater academic integrity and by informing my own musical content creation of a portfolio of compositions.

Participation in this study is voluntary. It will involve a questionnaire consisting of 7 questions for you to answer at your own discretion (these questions are included below for your evaluation). You may decline to answer any of the questions if you so wish. Further, you may decide to withdraw from this study at any time without any negative consequences. With your permission, your responses to the questionnaire will be included as an appendix in my thesis for reference purposes and may be cited in the body of the Analytical Notes section of my thesis. If you prefer to remain anonymous but your responses still be included in the thesis, this is also possible by indicating on the consent checkboxes at the beginning of the questionnaire.

I will forward you a copy of the thesis if any citations to your responses and/or a complete copy of your responses are included for your final approval prior to publication. The thesis will then be held in the Sydney Conservatorium library in the rare books section, which can only be viewed by special request and not be removed from the library.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me by email at [dkem9893@uni.sydney.edu.au](mailto:dkem9893@uni.sydney.edu.au). You can also contact my supervisor, Daryl Pratt by emailing [daryl.pratt@sydney.edu.au](mailto:daryl.pratt@sydney.edu.au)

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours Sincerely,  
David Kemp  
Sydney Conservatorium of Music  
Research Student

**An investigation of composition approaches and the use of technology in modern jazz music for performance from a jazz vibraphonist's perspective.**  
Version 2, 13/10/12

Page 1 of 2



### Questionnaire

☐ I give my consent to be involved in this project (please double-click the box and select the default value to checked in order to agree. Leave blank if you don't agree)

☐ I agree to being named in the thesis to be published in mid 2013 (please double-click the box and select the default value to checked in order to agree. Leave blank if you don't agree)

☐ I agree to my responses to the questionnaire being included in the thesis to be published in mid 2013 (please double-click the box and select the default value to checked in order to agree. Leave blank if you don't agree)

Q1 How and to what extent has the use of music performance technologies such as MIDI control (either via pickup technology on a vibraphone or by using a controller such as a Malletkat) impacted on your approach to composition?

Q2 Do you regularly use any other sound manipulation technology during live performance such as chorus, reverb or looping effects? If so, can you please provide specific details?

Q3 When writing new material, how and to what extent do you consider how the music will work in a live performance context?

Q4 Have you encountered compositions using recording studio technologies such as multi-track recording or post tracking effects not be effective in a live performance? If so, what were the particular challenges encountered and how were they overcome?

Q5 What do you consider to be some key considerations when composing music incorporating technology usage for modern jazz performance?

Q6 Do you have any clearly identifiable compositional methods you employ regularly when incorporating technology into your creative work?

Q7 Have you ever used any computer based software instruments or effects? If so, do you have any comments to make about this experience?

## Appendix C - Personal Information Statement for the Questionnaire

Please note the underlined text in the scan of the document below denotes where amendments were made between the previous version of this document and the final version presented here, as is the convention during the ethics approval process.



ABN 15 211 513 464

**Daryl Pratt**  
Chair of Percussion Unit  
Senior Lecturer in Composition & Music Technology

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### Composition Approaches and Technology Usage in Modern Jazz Vibraphone

#### PARTICIPANT INFORMATION STATEMENT

**(1) What is the study about?**

The study is about researching into the composition approaches and the extent of associated technology usage by modern jazz vibraphonists / composers.

**(2) Who is carrying out the study?**

The study is being conducted by David Kemp and will contribute to the degree of Masters in Music Composition (research) at The University of Sydney under the supervision of Daryl Pratt, Chair of Percussion Unit, Sydney Conservatorium of Music.

**(3) What does the study involve?**

It will involve a questionnaire via email correspondence consisting of 7 questions for you to answer at your own discretion.

**(4) How much time will the study take?**

It is anticipated that it will take no longer than 40 minutes to respond fully to the questions.

**(5) Can I withdraw from the study?**

Being in this study is completely voluntary and you are not under any obligation to consent to complete the questions. Submitting a completed set of questions is an indication of your consent to participate in the study. You can withdraw any time prior to submitting your completed questions or prior to the publication of the thesis in mid 2013.

**(6) Will anyone else know the results?**

All aspects of the study, including results, will be strictly confidential and only the researchers will have access to information on participants until the publication of the thesis in mid 2013. You will not be named in the thesis unless you indicate your consent to be named by placing an X in the corresponding checkbox on the questionnaire.

**(7) Will the study benefit me?**

It is not anticipated that the study will directly benefit you but it will create a greater awareness about and provide further insight into modern jazz composition by vibraphonists.

- (8) Can I tell other people about the study?

*No, for the reason of protecting participant identities and to avoid possible coercion.*

- (9) What if I require further information?

When you have read this information, David Kemp will discuss it with you further and answer any questions you may have. If you would like to know more at any stage, please feel free to contact David Kemp – [dkem9893@uni.sydney.edu.au](mailto:dkem9893@uni.sydney.edu.au) or Daryl Pratt – [daryl.pratt@sydney.edu.au](mailto:daryl.pratt@sydney.edu.au)

- (10) What if I have a complaint or concerns?

Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or <a href="mailto:ro.humanethics@sydney.edu.au">ro.humanethics@sydney.edu.au</a> (Email).
--

## **Appendix D - Questionnaire Transcripts**

The following questionnaires all had the same generic Invitation Letter (please refer to Appendix B) and Personal Information Statement (please refer to Appendix C) included in the document package sent to all participants. What follows are the transcripts of the participant's responses.

### **Daryl Pratt's Questionnaire Responses**

Q1 How and to what extent has the use of music performance technologies such as MIDI control (either via pickup technology on a vibraphone or by using a controller such as a Malletkat) impacted on your approach to composition?

"I was actively involved as a composer with a vibes+K&K interface in the late '90s with my band, Sonic Fiction. The objective was to write music that could be recreated in performance. To that end, the primary impact the synth/vibe interface had was in the crafting of melodic lines. To summarize: the comparatively more complex sound (I combined the vibes natural sound with samples and effects) meant that the melodic writing was simpler, less active in comparison to what I might have composed for an acoustic vibraphone."

Q2 Do you regularly use any other sound manipulation technology during live performance such as chorus, reverb or looping effects? If so, can you please provide specific details?

"Not any more, but when I was using the vibes+K&K interface with Sonic Fiction, AtmaSphere and Chad Wackerman I used chorus, reverb and short loops (generally built into the samples themselves). With Wackerman I used, blended and in various combinations, amplified vibes, 2 synthesizers, samples and FX processing."

Q3 When writing new material, how and to what extent do you consider how the music will work in a live performance context?

“I always compose for live performance. Considerations for studio contexts (recordings) almost always comes 2<sup>nd</sup>.”

Q4 Have you encountered compositions using recording studio technologies such as multi-track recording or post tracking effects not be effective in a live performance? If so, what were the particular challenges encountered and how were they overcome?

“No, because my compositions, as stated above, are initially designed for live performance. I can envisage, on the other hand, that multi-tracking and post tracking effects would present challenges if central to a particular composition.”

Q5 What do you consider to be some key considerations when composing music incorporating technology usage for modern jazz performance?

“I’ll limit my response to experiences with my own instrument:

1. blending with acoustic instruments
2. control of sound in a live performance-the sound engineer is critical
3. flexibility to creatively interact and improvise in an ensemble
4. control of subtlety that is inherent with acoustic instruments. I never felt like I had developed enough control with my vibes+K&K interface set-up. This was partly due to financial considerations (more money meant that I could have developed a more sophisticated instrument-Pat Metheny’s MIDI guitar for example) and partly due to the limitations inherent in MIDI instruments at this time (1990s).”

Q6 Do you have any clearly identifiable compositional methods you employ regularly when incorporating technology into your creative work?

“No.”

Q7 Have you ever used any computer based software instruments or effects? If so, do you have any comments to make about this experience?

“No.”

### **Charles Martin's Questionnaire Responses**

Q1 How and to what extent has the use of music performance technologies such as MIDI control (either via pickup technology on a vibraphone or by using a controller such as a Malletkat) impacted on your approach to composition?

“Quite a lot of my composition has been done at my malletkat! I wasn't particularly involved in percussion composition until I started working with Garageband and Ableton on computer and once I began to work with a malletkat (rather than a little piano keyboard or just the mouse) I was able to combine improvisation and composition in a very fluid way. I think that working with the malletkat, playing notes directly into a DAW gave me a lot of freedom to experiment layering different parts and instruments which in the end gave me the confidence to bring my compositions into live performances. The ability to bring a lot of different sounds to a performance and to plug directly into a PA system also enabled me to create sound designs for a series of theatrical style productions.”

Q2 Do you regularly use any other sound manipulation technology during live performance such as chorus, reverb or looping effects? If so, can you please provide specific details?

“The amount of processing I do depends on the gig - when I'm using a malletkat as a marimba or vibes substitute with a live ensemble (e.g. my ragtime xylophone and marimba duo), I use a little bit of reverb but mostly the dry sound. In ambient/improvisation concerts with other artists performing from laptops I usually use a lot of processing. I usually run some simple sampler instruments in Pure Data, Ableton Live or MainStage. I frequently use big reverbs in MainStage (Space Designer) and various kinds of delays. I usually don't use looping but I often have custom sampled instruments setup in Ableton with sound material from rehearsals/

practicing to create background soundscapes or play percussively with non-percussive sound sources.”

Q3 When writing new material, how and to what extent do you consider how the music will work in a live performance context?

“When I'm writing music for an ensemble I usually don't put a lot of consideration into the live performance context. Usually that kind of decision making has been part of a later collaborative process with my group. I think my biggest consideration when planning for live performance is to keep the technical requirement pretty simple. Different performance situations have different amounts of time for setup, but when I'm working in an ensemble concert situation, my equipment needs to be as simple as possible to setup so that I can focus on playing. In a theatrical situation where setup time isn't an issue I might have much more complex software running for the gig, but it's still important to make sure everything is easy to start up in case everything crashes during the performance.”

Q4 Have you encountered compositions using recording studio technologies such as multi-track recording or post tracking effects not be effective in a live performance? If so, what were the particular challenges encountered and how were they overcome?

“Short answer - not really. I've performed many compositions using studio prepared tape-parts in a classical context. To get the best results here, I would try to amplify the instruments as well so that the tape blends naturally with the live instrument sound. In adapting my own "studio" compositions for live performance, I've sometimes had to find a way to start background soundscapes such as field recordings during the performance. In my experience, the simplest solution for this has been to divide the soundscapes into cues, put them into Ableton Live and trigger each one using keystrokes on a laptop on stage.”

Q5 What do you consider to be some key considerations when composing music incorporating technology usage for modern jazz performance?

“The most important consideration for me is to sound good in live performance. I think the best setup when using technology and live instruments is to use a very high quality PA system, mic all the acoustic instruments and have a great sound guy at the desk. This way the acoustic instruments get to have the same presence in the PA as the electronic instruments. In many situations this isn't practical in which case I usually focus on getting the electronic instruments to blend in with the acoustic by a small powered speaker for each electronic setup positioned directly behind the player on the stage.”

Q6 Do you have any clearly identifiable compositional methods you employ regularly when incorporating technology into your creative work?

“Sure:

1. Layering looped field recordings and sparse improvisations to create non-repeating background soundscapes.
2. Slicing vocal, field recordings or non-percussive instrumental sounds into sampled instruments that can be performed using a malletkat.
3. Create synths that take random snippets from field recordings each time they're triggered to create unpredictable sounds.
4. Creating "scores" with timings that trigger generative computer musical process as backing parts for improvised pieces.
5. Embedding simple computer instruments in iPad and iPhone applications to allow non-expert performers to include various kinds of computer sounds into a percussion setup.”

Q7 Have you ever used any computer based software instruments or effects? If so, do you have any comments to make about this experience?

“Yes - I frequently use instruments and effects in Pure Data, SuperCollider, Ableton Live, MainStage (Logic Studio) and various iPad apps in live performance. I have pretty low expectations of the sample based software instruments available and I have had more success



with creating simple sampled instruments from my own recordings - even if they don't sound "more realistic" at least they're unique. That said I've started performing with some sample based instruments on iPad for straightforward gigs (SampleTank is my favourite). I've found Ableton Live to be a very creative environment for working with effects. One of the great thing about Live is the easy combination of MIDI, Audio, live performance and studio recording - so you can setup a "live" environment, press record while practicing and start capturing something that easily be rolled into the sampled material for the live setup."

### **Gary France's Questionnaire Responses**

Q1 How and to what extent has the use of music performance technologies such as MIDI control (either via pickup technology on a vibraphone or by using a controller such as a Malletkat) impacted on your approach to composition?

"As I do not compose much for vibraphone or MK(*malletkat*) so there has not been much impact on my composition."

Q2 Do you regularly use any other sound manipulation technology during live performance such as chorus, reverb or looping effects? If so, can you please provide specific details?

"Not much in live performance."

Q3 When writing new material, how and to what extent do you consider how the music will work in a live performance context?

"I am very aware of how notes on a score transfer to a live performance and am consider:

Will my instrument require a PA?

Where will the speakers be placed?

Are the opportunities for software problems / crashes?

How stable are the electronic instruments in a live performance situation?"

Q4 Have you encountered compositions using recording studio technologies such as multi-track recording or post tracking effects not be effective in a live performance? If so, what were the particular challenges encountered and how were they overcome?

“Will my instrument require a PA? Where will the speakers be placed? Does my sound blend with the acoustic instruments?”

Q5 What do you consider to be some key considerations when composing music incorporating technology usage for modern jazz performance?

NO ANSWER GIVEN

Q6 Do you have any clearly identifiable compositional methods you employ regularly when incorporating technology into your creative work?

“What is the context of the recorded sounds? Are they dated? Do they evoke a “programmatic” image etc. I always try to record the same instrument that I will play live as in the recording. Ie the Marimba in Fabian Theory.”

Q7 Have you ever used any computer based software instruments or effects? If so, do you have any comments to make about this experience?

“I use Logic, Ableton Live, as well as a Muse Receptor running Kontakt and other various software based and hardware instruments. I am always very careful to balance acoustic and electronic sounds.”

Q1 How and to what extent has the use of music performance technologies such as MIDI control (either via pickup technology on a vibraphone or by using a controller such as a Malletkat) impacted on your approach to composition?

“I’m using a malletkat and it helps me to create playbacks and i can listen how compositions would sound with a whole band, not just my part on the vibraphone.”

Q2 Do you regularly use any other sound manipulation technology during live performance such as chorus, reverb or looping effects? If so, can you please provide specific details?

“No, on some gigs I use the malletkat and the vibraphone.”

Q3 When writing new material, how and to what extent do you consider how the music will work in a live performance context?

NO ANSWER GIVEN

Q4 Have you encountered compositions using recording studio technologies such as multi-track recording or post tracking effects not be effective in a live performance? If so, what were the particular challenges encountered and how were they overcome?

“I only use those technologies at home for recording. In live situations I want to concentrate on playing.”

Q5 What do you consider to be some key considerations when composing music incorporating technology usage for modern jazz performance?

“The use of multi-track recording with different sounds makes me hear for what kind of band and instruments the composition would fit in.”

Q6 Do you have any clearly identifiable compositional methods you employ regularly when incorporating technology into your creative work?

“Usually I have a melody or a chord progression fragment. I play it in the computer, loop it and try to find things that fit in like bass lines etc.”

Q7 Have you ever used any computer based software instruments or effects? If so, do you have any comments to make about this experience?

“When recording I use reverb and other effects all the time. When using computer based instruments as plugins my experience is that they most of the time do not sound very natural. If possible, I prefer natural instruments.”

Completed by Vibraman on Sunday 10 March 2013 at 9:25 (United States Eastern Standard Time).

### **Jeremy Barnett's Questionnaire Responses**

Q1 How and to what extent has the use of music performance technologies such as MIDI control (either via pickup technology on a vibraphone or by using a controller such as a Malletkat) impacted on your approach to composition?

“It depends on the situation. For my pieces there are two types. Either I am playing a solo that ONLY uses electronic controllers (MalletKAT, computer etc) in which case my approach to composition is completely centered around the technology and what it can do. I am limited only by what is possible, both in terms of programming and computer power, and what I can manage as a performer. I am not planning these kinds of solos for anyone else to play! I also have included the MalletKAT in a piece for soloist (me!) with acoustic percussion ensemble. In this case I used it as more of a sound effect generator than a real instrumental voice. I wouldn't say in this case that it impacted my compositional approach at all.”

Q2 Do you regularly use any other sound manipulation technology during live performance such as chorus, reverb or looping effects? If so, can you please provide specific details?

“I use a lot of these things but all run through computer software as plug ins. I used to use a delay pedal (the Line 6 Delay Modeller) and a Boss looping station, but have replaced it all with computer based effects.”

Q3 When writing new material, how and to what extent do you consider how the music will work in a live performance context?

“Completely and always. Everything I have composed so far has been for live performance. It is vital that things will work onstage so there is no point for me not planning for this from the very beginning.”

Q4 Have you encountered compositions using recording studio technologies such as multi-track recording or post tracking effects not be effective in a live performance? If so, what were the particular challenges encountered and how were they overcome?

“No. I have not been in a situation where I am trying to reproduce exactly something from a recording.”

Q5 What do you consider to be some key considerations when composing music incorporating technology usage for modern jazz performance?

“I don’t compose for this situation. But, I think using technology in this scenario needs to be appropriate and suit the needs of the group. A mallet player using effects and a MalletKAT should be no different than an electric guitarist or keyboard player in their approach.”

Q6 Do you have any clearly identifiable compositional methods you employ regularly when incorporating technology into your creative work?

“The technology and what it can do is often my spring board for creativity. I explore its potential and find what I like, what feels expressive to me and I go from there.”

Q7 Have you ever used any computer based software instruments or effects? If so, do you have any comments to make about this experience?

“All my work with electronics is computer based. I use Ableton LIVE and my laptop for everything. The power it affords me and the sheer flexibility of the program lets me do anything I can conceive of. It is an instrument library, sampler, sequencer, looper, pedal board, video player and more all in one. Computers used to be a variable that musicians were scared of but the power and reliability of them now makes them perfect for live performance.”

### **Mario DeCuitis' Questionnaire Responses**

Q1 How and to what extent has the use of music performance technologies such as MIDI control (either via pickup technology on a vibraphone or by using a controller such as a Malletkat) impacted on your approach to composition?

“Using the malletKAT allows the percussionist to add an entirely new gesture set to their performance. Pitch Bend, Vibrato, blending of sounds, etc. All add to the vocabulary of expression.”

Q2 Do you regularly use any other sound manipulation technology during live performance such as chorus, reverb or looping effects? If so, can you please provide specific details?

“The new Roland RC300 is an incredible looper that is designed for live performance. This gives the musician the ability to layer or create entire tunes on the fly. Incorporating loops in a performance is another exciting area. Using a program like Ableton LIVE, one can use loops and change their tempo or key on the fly as well as control things like effects, filtering, by sending out controller info from a malletKAT or drumKAT.”

Q3 When writing new material, how and to what extent do you consider how the music will work in a live performance context?

“It's all about the live performance for me.”

Q4 Have you encountered compositions using recording studio technologies such as multi-track recording or post tracking effects not be effective in a live performance? If so, what were the particular challenges encountered and how were they overcome?

“Not any more. Miking techniques were always a challenge, but with MIDI controllers and sequencers and loopers, live performance does not have the audio challenges of the past.”

Q5 What do you consider to be some key considerations when composing music incorporating technology usage for modern jazz performance?

“When a jazz vibraphonist plays on a malletKAT, the key consideration is to think about the sound they are playing on. The "vibe" technique doesn't work when playing things like flute or guitar. The same is true for voicings. A guitar normally plays open voicings. Vibe players tend to play closed voicings. The instrument that is being emulated teaches the performer what sounds natural or not.”

Q6 Do you have any clearly identifiable compositional methods you employ regularly when incorporating technology into your creative work?

“I let the sound be my teacher!”

Q7 Have you ever used any computer based software instruments or effects? If so, do you have any comments to make about this experience?

“There are amazing software instruments that can have a profound effect on your playing. Omnisphere from Spectrasonics, KONTAKT from Native Instruments, Ableton Live are part of my daily arsenal of playing.”

Completed on Saturday, March 9, 2013 at 13:04 (USA Eastern Standard Time)

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**Tony Miceli's Questionnaire Responses**

Q1 How and to what extent has the use of music performance technologies such as MIDI control (either via pickup technology on a vibraphone or by using a controller such as a Malletkat) impacted on your approach to composition?

“I wish it impacted me more, but it hasn't. I don't even use the Malletkat for composition. The piano keyboard is the BEST note entry tool.”

Q2 Do you regularly use any other sound manipulation technology during live performance such as chorus, reverb or looping effects? If so, can you please provide specific details?

“None except for one band and that band doesn't work much at all any more.”

Q3 When writing new material, how and to what extent do you consider how the music will work in a live performance context?

“I totally think of the sound and how it will work live. I think you have to consider the end result, including the reaction of the audience.”

Q4 Have you encountered compositions using recording studio technologies such as multi-track recording or post tracking effects not be effective in a live performance? If so, what were the particular challenges encountered and how were they overcome?

“Never used tracks live. I wouldn't want to, unless I orchestrated something, which I do want to do!”

Q5 What do you consider to be some key considerations when composing music incorporating technology usage for modern jazz performance?

“Jazz musicians are really in contact with their instrument (acoustic), except for the piano. The electronic instruments are not totally there and neither are the samples. Look how an acoustic vibe changes over time and volume. That's not been recreated yet. The best thing is to use synthesized sounds with or without percussion samples when playing jazz.”

Q6 Do you have any clearly identifiable compositional methods you employ regularly when incorporating technology into your creative work?



“I just play and write.”

Q7 Have you ever used any computer based software instruments or effects? If so, do you have any comments to make about this experience?

“Actually I love synths and love playing them. It's just a big stretch to incorporate that into live jazz playing, at least for me. The instrument has to sound subtle. The malletkat is getting there and is so much further along then it was just a few years ago. It's a necessary tool now for mallet players, partly because it's starting to come into it's own.”

Completed on Saturday, March 9, 2013 at 10:55 (USA Eastern Standard Time)

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