

DIDGERIDOO NOTATION

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A THESIS SUBMITTED TO
THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF ARTS

GRADUATE PROGRAM IN MUSIC
YORK UNIVERSITY
TORONTO, ONTARIO
DECEMBER 2018

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Abstract

The didgeridoo is a unique musical instrument considered to be one of the world's oldest instruments. It plays an integral part in Australian Aboriginal history, spirituality, rituals and ceremonies. Didgeridoo playing is solely based on oral tradition with varying techniques and interpretations among Aboriginal communities. For non-Aboriginal musicians and composers, the didgeridoo lacks the status of a “serious” instrument and is often viewed as a novelty instrument. This may be why there is a lack of didgeridoo notation and its misrepresentation in the western notation world. This paper presents a “Didgeridoo Notation Lexicon” which will allow non-didgeridoo composers to understand a readable legend and incorporate the didgeridoo into their compositions. The need for didgeridoo notation will be discussed and analyzed in comparison to previous notation attempts of composers and musicologists such as Sean O’Boyle, Liza Lim, Harold Kacanek and Wulfin Lieske. In the past, the inclusion of the didgeridoo in orchestral contexts has predominately been focussed on its associated Aboriginal imagery regarding dreamtime and spirituality. Conversely, my original composition fully integrates the didgeridoo within the orchestra as an equal instrument, not a focal point to advance a particular theme. I travelled to Cairns, Australia to interview world-renowned didgeridoo player, David Hudson. Hudson’s insight, experience and knowledge of the Aboriginal community supported the creation of a Didgeridoo Notation Lexicon. This paper attempts to educate and inspire composers and musicologists to appreciate the intricacies of the didgeridoo and elevate its role in western composition.

Dedication

I would like to dedicate this paper to my late father, Spiros Koumoulas, for his unconditional love, support and appreciation of music. You are forever my hero.

Acknowledgements

Firstly, I would like to thank my graduate supervisors, Jay Rahn and Michael Coghlan, for their guidance, direction and wealth of knowledge in the writing of my thesis. Secondly, I am indebted to the contributions of Sean O'Boyle, Wulfin Lieske and Harold Kacanek, without whom the discussion of past didgeridoo notation attempts would not have been possible. Most importantly, I would like to thank David Hudson for his mentorship, insight, support and hospitality.

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CHAPTER 1: INTRODUCTION

Origins of the Didgeridoo

According to an Australian Aboriginal creation legend, the universe was dark and cold in the beginning. Boonun, an Aboriginal creation being, was collecting wood to start a fire when he noticed a hollow tree trunk being eaten by termites. He blew inside the trunk to set the termites free. Simultaneously, a divine sound came out, and the termites flew into the heavens and became stars. Then, there was light. This legend reveals the fundamental link between sound and creation in the Aboriginal belief system. The termite-filled, hollowed tree trunk which was instrumental in creating the world is the didgeridoo. The sound of the didgeridoo gave life to the Aboriginals; there would be no universe without the didgeridoo. Thus, it has a prominent place in Aboriginal history. More importantly, the didgeridoo is an integral part of Aboriginal spirituality because of its significant role in Aboriginal rituals and ceremonies (Harris 2017).

The didgeridoo is a unique musical instrument developed by Australian Aboriginals, and is considered to be one of the world's oldest musical instruments. It is a wind instrument originally found in Arnhem Land in Northern coastal Australia. It is a flared wooden tube about 1.5 metres long. The didgeridoo is made from eucalyptus tree branches that have been hollowed out by termites with a mouthpiece made out of beeswax. There are at least forty-five different names for the didgeridoo, some of the most common being yidaki, yirtakki, and djibolu (Harris 2017). The distinguishing sound of a didgeridoo is a low-pitched drone which is played with the technique of circular breathing. Circular breathing is the technique of using air that is stored in one's mouth to keep the instrument's going while breathing in through the nose. The following

paper explores firstly, the creation of a standardized didgeridoo notation and secondly, the use of didgeridoo notation in orchestral contexts.

Rationale for Didgeridoo Notation

Didgeridoo notation is an aspect of composition that I have been interested in for many years. Since learning to play the didgeridoo in my mid-teens, and throughout my musical education, I searched for didgeridoo notation with little success. Eventually my interests led to a focus on composition in my undergraduate studies. A first-year course under Matt Brubeck provided an opportunity to explore didgeridoo notation even further. A task in this course was to help composers, unfamiliar with the didgeridoo, compose for the didgeridoo in an ensemble piece. My search for didgeridoo notation left me dissatisfied and frustrated. This continuous search eventually brought me in contact with a well-known Japanese-Australian didgeridoo player named Yoshitaka “Sanshi” Saegusa. Sanshi is the owner of one of the largest didgeridoo stores in the world in Fremantle, Australia – Didgeridoo Breath. As a result of our detailed discussions, Sanshi devised an approach and manner of notating certain articulations in the didgeridoo (Didgeridoobreath.com).

Although as helpful and fascinating it was to get into the mind of such a world class didgeridoo player, my search was yet to be satisfied. At that time, the didgeridoo was still unrepresented in the western notation world. This can be verified and argued if one were to look at the scores of Australian composers such as Sean O’Boyle and Liza Lim, as well as some attempts at didgeridoo notation by Knopoff and Dunbar-Hall (Neuenfeldt 2000). However, after a deeper investigation, I concluded that most of these attempts were simply not detailed enough and usually featured a desired didgeridoo rhythm along with the instruction of improvisation. As

a player of the didgeridoo, I firmly believe in the freedom of the didgeridoo player to improvise, especially if composers are not familiar with the intricacies of such a unique instrument. In my experience, notation limited to one or two percussion lines is simply inadequate or insufficient, especially if the goal of notation is to attain a high level of specificity. Being specific with didgeridoo notation is extremely difficult, but it can definitely be extended to more than a one- or two-line percussion staff.

As is shown in my notation rationale, there are some techniques of the didgeridoo that are at the discretion of the performer. The didgeridoo has fairly conventional and straightforward techniques for a composer to understand; thus, justifying the necessity for didgeridoo notation. As a composer, my objective is to create notation that would make it accessible for non-didgeridoo playing composers to understand the required techniques by referencing a readable or understandable legend. It is not my expectation for this notation to be universally accepted or to replace the oral traditional method of learning the instrument. It is my intention to help educate composers and musicologists on such a unique and traditional, yet often misunderstood, instrument from a composition perspective. The creation of a lexicon notation for the didgeridoo should exist, while not disrespecting aboriginal oral common practice and tradition. In fact, this could not be further from the truth. My hope and main objective is to inspire composers to appreciate the intricacies of the instrument and to learn more about one of the oldest instruments in human kind, thus experiencing the spiritual attributes of the didgeridoo in Aboriginal culture.

Didgeridoo Notation and Musical Score

For the creation and analysis of my notation, I chose a didgeridoo improvisation excerpt played by Japanese-Australian didgeridoo player, Yoshitaka “Sanshi” Saegusa. I selected this didgeridoo excerpt as a model for notation due to its intricate combination of simplicity and complexity. It is part of a short piece that is easy to follow, yet includes techniques that are challenging to notate. It was my intention to create notation that is similar to standard European-derived notation that has been employed around the world. For example, certain techniques on the didgeridoo, though realized differently, are similar to those of other instruments. For techniques which can be produced on other wind instruments, I used *Behind Bars* by Elaine Gould (2011) and *Music Notation in the Twentieth Century* by Kurt Stone (1980) as my guide and reference. The more similarities I can connect between standard Western orchestral instruments and the didgeridoo, the much easier it will be for non-didgeridoo players to use and understand.


Didgeridoo Notation: Part 1

Below is a portion of the didgeridoo notation I have created and a transcription of a didgeridoo improvisation piece using my notation. This is followed by an analysis of the notation, considerations and decisions made. The symbols and techniques employed in the following notation legend serve as an introduction to my preliminary discussion and are directly applicable to the transcription that follows.

Please note: To access the audio track associated with a particular sound, refer to the accompanying recordings. See attached file. Refer to the Discography for sourcing references. Most recordings are from Didgeridodojo.com and the author’s performances.

Figure 1: Didgeridoo Notation Legend – Part 1

NOTATION LEGEND

 : 'Standard' or 'open' drone (audio track – 1)

 : Open vocalization (audio track – 2)

 : 'Sharp' drone. (audio track - 1)


 : Sharp vocalization (audio track - 3)

-- : Vocalization duration

’ : Breath mark

 : Humming (audio track – 4)

○ : Harmonics (audio track – 5)

 : Direction of harmonics (audio track – 5)



: Flutter tonguing

(audio track – 6)



: Toot

(audio track – 7)



: Bark

(audio track – 8)



: Slur

(audio track – 9)

Figure 2: “Didgeridoo Improvisation” (Saegusa, 2016)

(audio track – 10)

Didgeridoo Improvisation

Performed by Yoshitaka "Sanshi" Saegusa
Transcribed by Marko Koumoulas

*For notation in free time: Note durations aren't exact, but are the recommended or desired length.

As for tempo in free time: Tempo should be fairly slow, with a maximum metronome mark at 100bpm.

*It is also recommended to play rubato; pause and accelerate when desired.

*nv = no vocalization

O -- I --- , O ----- ♩ = 110

3 O - I - nv, I --- , , O --- , I --- , , I --- I -- ,

4 Bounce breathing until end
Mostly slurred -- I -- O

8

12 I O I O I I I O I O O O

16 I O O -

20 Tongue for emphasis

24 ^{8va} ♩ = 130

Explanation of Didgeridoo Notation Symbols

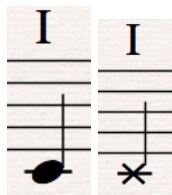
Please note that the explanation of the following symbols, focuses on the production and perception of each individual sound, rather than the acoustical aspects of each.

'Standard'/'open' drone/vocalization:



The first technique is represented by the symbol **O**. This symbol is inspired by the Korean alphabet, or Hangul, where consonants and vowels actually mirror the manner of articulation; in other words, **O** is a visual representation of the shape of the mouth and placement of the tongue. The **O**, in this case, represents the shape of the mouth when producing a drone on the didgeridoo. There are multiple ways of producing a drone, all of which are very important as the shape of the mouth produces different timbres. The **O** drone is a typical didgeridoo drone, the basic and most common didgeridoo sound. Constant pursed lips are required to produce a drone; however, the tenseness of the lips is in a relaxed mode in this case. The **O** can also represent a more 'rounded' or 'open' sound with regards to vocalization. Simply put, one can choose to be precise to a greater or less extent in the score, and indicate whether the vocalization, whether it be a bark or a more tonally focused note, is to be played with a normal drone, or a sharper one. In circumstances where a standard drone is not played in succession with a sharp drone, the **O** symbol above may be omitted.

'Sharp' drone/vocalization:



This symbol is similar to the **O**, as they both represent the shape of the mouth playing the drone. Whereas for the **O**, the lips are pursed somewhat tightly, in a comfortable, relaxed manner, the **I** represents very tight lips, tension being considerably greater than for the **O**. The rationale for using **I** for this symbol is not only that it is a Roman alphabetic symbol like **O**, but when turned sideways **I** is a representation of the lips pressed tightly. Regarding the production of sound, the tighter the lips, the sharper the drone. See above for the utilization of **I** within vocalization contexts.

Vocalization duration:



The dashes, which appear several times within the score excerpt, represent vocalization. See the Analysis section below.

Breath mark:



This is the same standard notation as used for wind instruments. However, note that the player/performer will be circular breathing. Circular breathing is the technique of using air that is stored in one's cheeks and blowing out through the mouth, while breathing in through the nose.

Humming:



Humming can be created through many different techniques. One way is to hum a very low note which is lower or near to the drone of the didgeridoo. The frequencies bounce off each other producing beats and/or roughness, and are about a semitone apart. At this frequency, the dissonance is acutely felt, thus producing a 'wobble' in the drone. Another way of producing humming in a drone is through gargling. Producing a simple drone on the didgeridoo, and then gargling with the throat, or vibrating the soft palate, will create a similar sound. This should not be confused with a growl, as the vocal pitch in a growl is much higher, thus producing a different sound. This technique can also be created through subtle vibrations in the cheeks. All of these techniques produce a very similar outcome. This can create a very special sound as it proves even though the didgeridoo is technically a one-pitch drone, using vocalizations can alter the sound, add multiple pitches and in many ways harmonize.

Harmonics:



This is a symbol for harmonics. This is also the standard notation for harmonics used in stringed instruments such as guitar, violin, viola, cello and double bass. To produce overtone harmonics on the didgeridoo, the lips must be pressed as tight as possible. When producing a sharp drone, the lips are pinched forward and back to control the sound of the harmonics as well as the desired direction. A typical sharp drone, or “I” in this lexicon, can naturally produce harmonics. However, with some extra push or exertion, the harmonics can project much louder and the didgeridoo player is able to have full control. It is important to note that the pitches of

the overtone harmonics cannot be controlled by the player. These harmonics are the natural tones produced from the particular key of the didgeridoo.

Direction of harmonics:



This symbol represents the direction in which the harmonics are played. While playing a drone, this can be controlled by protruding the lips forward or retracting them backward. To play higher pitched harmonics, the lips are retracted backwards, whereas the lips are protruded forward to play lower pitched harmonics.

Flutter tonguing:



Similar to flutter tonguing on the saxophone and flute, flutter tonguing on the didgeridoo is produced through rapid vibration at the front of the tongue.

Toot:



A toot, also known as a trumpet, horn, or overtone¹ is a unique sound produced by overblowing. To produce a drone on the didgeridoo, the lips are basically parallel to each other.

¹ These terms are derived from field experience.

In this position, the player pushes the air from the lips forward into the didgeridoo. However, to produce a toot, the upper lip is slightly pushed forward beyond the bottom lip. The sound is then concentrated more on the upper lip and is pushed downwards, towards the bottom lip, instead of forward toward the didgeridoo. Some call it a ‘trumpet’, perhaps due to the fact the mouth shape is similar in tightness to that used with a trumpet.

Bark:



A bark is often compared to the sound of the dingo, a wild Australian dog.² Several vocalization sounds on the didgeridoo are often attributed to animals in the region such as kookaburra, morepork (Australian owl), kangaroo, bullfrog, crane, etc. Most of these animal sounds would be quite difficult to notate due to the lack of consistency in imitating specific animal sounds from performer to performer. To see an example of how to notate this, see page 44. Not only is this notation used for a bark, but the same symbol is used within this lexicon for instances of vocalization. To differentiate between the two, a prolonged vocalization is normally accompanied by an **O**, **I** or **vocalization duration**.

² David Hudson, interview by author, Cairns Australia, Dec. 29, 2017.

Slur:



Slurring, in didgeridoo terms, is produced when the rhythmic passage is played with the cheeks puffed out. i.e. expanded. This creates a slurred sound while playing the rhythm. The player is, in fact, still tonguing the notes by having the cheeks both expand and contract - the notes easily blending together as if slurring them.

Notating vocalization is a challenging aspect in the creation of the lexicon. There are perhaps an infinite number of sounds the human voice can produce. Inevitably, these sounds can all be incorporated into didgeridoo playing. Thus, it would be inefficient, inaccurate, and even impossible to notate the exact sound the didgeridoo performer intends to convey. The vocals produced while playing a drone can originate from a variety of sources, such as the lips, cheeks, throat and diaphragm. For example, in the lexicon when the vocalization lines appear, it doesn't indicate whether the sound should be produced by the diaphragm, the throat, the lips, or the cheeks. Due to these variables, it would quite daunting to identify such aspects of tone production within the score. Ultimately, central to the playing of the didgeridoo is the freedom to improvise, and rigid notation, by no means, should restrict the performance. If possible, it is advisable to consult with the didgeridoo performer before the performance, or perhaps, in the composer notes one might discuss the different ways in which the vocals can be performed.

Analysis of a Notation of Didgeridoo Improvisation: (Refer to figure 2)

Features of the Notation to consider are:

- The first “bar” of the piece is in free time. The beginning of the excerpt is drones with vocalization, with the use of harmonics. Another important note is that this didgeridoo is in C#.
- This is followed by a 7/4 section, which is not only the first instance of a time signature, but also the first time with a metrical pulse. One interesting note here is the slur marks in the bar. Tonguing with cheeks puffed out produces the slur. The technique of didgeridoo tonguing can be compared to the technique used in wind instruments, such as the saxophone. Tonguing, in this case, gives prominence to individual notes. Tonguing on the didgeridoo is also very similar to wind instruments from a performance perspective. However, due to the girth of the didgeridoo mouthpiece, the performer has the freedom to manipulate the sound in a variety of ways by a simple change of lip positioning, or in this case, the cheeks.
- In the second non-metrical section, there are several examples of vocalizing specific notes, or pitches, over the drone.
- The next section of the improvisation excerpt is notated in 8/8 time. The eighth note rhythm in this section is easily heard in a 3+3+2 subdivision. Thus, the decision to notate it in 8/8 time. Later a 3+2+3 grouping occurs. The technique note in this section states “bounce breathing”. This is an intermediate-expert circular breathing technique. Bounce breathing is a circular breathing technique which doesn’t involve the storage of air in one’s cheeks, but instead uses the diaphragm to create the same result. Bounce breathing involves pulsation of the diaphragm. For example, the performer plays the drone while

contracting the diaphragm; then, in quick succession breathes in through the nose, as the diaphragm relaxes. Bounce breathing's distinctive sound resembles an explosive puff of air. With experience of listening to standard circular breathing and bounce breathing, one can differentiate the two.

- At the end of Bar 5, is the first instance of the flutter tonguing. Actually, in this case, the performer, Sanshi, also adds vocalization.
- From the onset of Bar 12, there are more instances of Sanshi using his voice. Here, vocals are used in a quick rhythm accentuating the pulses. Different from the previous lines, the vocals are now driving the rhythm. In this case, the choice was made not to use the ‘ - ‘ symbol to indicate voice, as in previous parts of the piece. This symbol would give the performer a visible indication of approximately how long to extend the vocalization. For example, it is common for the drone itself to last longer than the voice, so without being too stingy on the exact duration of the voice, the ‘ - ‘ symbol denotes an approximation of the duration. Referring back to Bar 12, these vocalizations are used for the exact same duration as the drone so the ‘ - ‘ have been omitted. To note, the beats are now arranged in 2+3+2 pulse.
- Bar 20 is the first occurrence of the use of a toot. The toot is an extended technique of the didgeridoo, whose notes are often dependent on the type of didgeridoo. An experienced didgeridoo player would also be able to produce multiple toots on the same didgeridoo. In this excerpt, the toot is on G#, a twelfth higher than the drone. However, for sake of notation simplicity, the decision was made to put it a fifth higher, within the octave. Often times, the toot may in fact be the first real break or stop in didgeridoo

music. However, it is also possible to toot and immediately fall back into a drone without stopping. In this case, Sanshi uses the toot as an obvious accent in the rhythm.

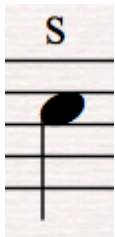
Didgeridoo Notation: Part 2

There are a number of contemporary didgeridoo techniques which aren't found in the transcription highlighted within this chapter. Below are some of the extended techniques, from beginner to advanced, which can be found in many contemporary recordings today.³

Figure 3: Didgeridoo Notation Legend – Part 2

Snare:

(audio track – 11)



Didgeridoo beat boxing is very popular in contemporary circles. The snare, in this case, is the same sound a beat boxer would produce, but played into the didgeridoo. To produce this sound, the lips must be shaped similar to that of playing a toot, except the tongue is more involved in enunciating the syllable 'pss' into the didgeridoo.

³ Observations from field experience.

Toot snare:

(audio track – 12)



A toot snare is a technique which combines the sound of a snare and a toot. One way this sound is produced is by pronouncing “poo-sst” into the didgeridoo, while holding one’s breath inside the mouth.

Rim shot:

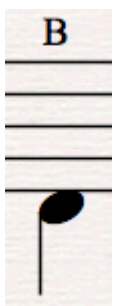
(audio track – 13)



A type of snare technique, a rim shot is a beat box technique on the didgeridoo which is attempting to imitate the sound of a rim shot on a drum set. Interestingly, this is achieved by announcing the syllable 'ka' into the didgeridoo, but inhaling the air, instead of exhaling.

Bass drum:

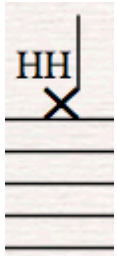
(audio track – 14)



A bass drum sound on the didgeridoo is produced by a short burst of air, resulting in a staccato-like drone. It is also common to simultaneously hum a low note for a greater “bass” emphasis.

High-hat:

(audio track – 15)



A high-hat sound is played by placing the tongue on the roof of the mouth, behind the teeth, and applying a quick burst of pressure through the front teeth. The tongue doesn't leave the roof of the mouth during this technique. It is also very commonly found in beat-boxing.

Drop Jaw:

(audio track – 16)



A drop jaw is the term for when one plays a drone slightly flatter in pitch than the actual key of the didgeridoo. To do this, the player loosens not only the lips, but the jaw, and simply opens the mouth wider as the drone is being played. The resulting sound gives the illusion of a lower pitched drone, but since it can't be played as 'sharply' as the fundamental drone, it is usually utilized to accent a rhythmic pattern.

Jaw Toot:

(audio track – 17)



A jaw toot begins the same way as a drop jaw, by opening the jaw and lowering the pitch of the drone momentarily. However, as the jaw is closed to return to a more standard drone embouchure, it is done so quickly and into the lip shape of a toot. What differentiates the

jaw toot from other toots, is that the motion of the jaw closing back into a drone creates the toot, and not just the result of very tight lips.

Dead note:

(audio track – 18)



This is a note produced by blowing a short puff of air into the didgeridoo, without buzzing the lips.

Zipper:

(audio track – 19)



The zipper is perhaps one of the more uncommon techniques used in contemporary playing. Similar to the rim shot, not only is it one of the few techniques which is produced by inhaling, instead of exhaling, but it is used almost exclusively when beat-boxing with the didgeridoo. To produce a zipper, the mouth must be in the shape of a smile, and the lips only a fraction apart from each other. At this point as mentioned before, the player sucks in air through the lips in short succession. It is the edges of the lips which will in fact, create most of the sound.

Tongue pop:

(audio track – 20)



The tongue pop is produced with the simultaneous buzz of the lips, with a loose jaw, to produce a drone, and have the tongue 'pop' forward towards the lips, as the jaw closes. The tongue in this case is almost creating a burst of air, to push out the drone and make it very staccato-like.

Tongue pop toot:

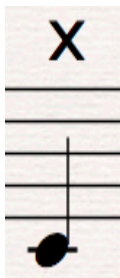
(audio track – 20)



This is very similar to the tongue pop, except the lip shape is changed and tightened to for a toot. The result is a very staccato-like toot.

Tongue click:

(audio track – 21)

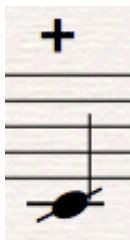


A tongue click is produced by placing the tongue at the roof of the mouth, and sucking it inward, releasing the grip the tongue has on top, and letting it hit the bottom of the

mouth. Another technique one could use to produce a tongue click is by keeping the tongue on the roof of the mouth but applying pressure to the back of the mouth and almost snapping the back of the tongue downwards. Slightly different timbres can be achieved by pronouncing different vowel shapes while tongue clicking. The overall outcome of this particular technique is not very different when played outside the didgeridoo versus into the didgeridoo, but it allows another element during contemporary didgeridoo rhythms.

Lip pop:

(audio track – 22)



This technique is very uncommon and is only utilized in contemporary playing. A lip pop is achieved by pursing the lips tightly together and pushing or 'popping' them outward.

Lip smack:

(audio track – 22)



This technique is usually played in succession with the lip pop. This technique can be described by imagining having lipstick or chapstick on and smacking the lips together after applying it. This naturally brings the air inward, and thus, is the opposite of a lip pop.

Growl:

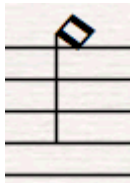
(audio track – 23)



A growl is a technique which is produced by gargling into the didgeridoo while playing a drone. The resulting sound is similar to a flutter tongue, but not as aggressive. However, a growl is almost always played simultaneously with some sort of higher-pitched vocalization.

Blowing air:

(audio track – 24)



This technique is produced when the didgeridoo player blows air, continuously, through the didgeridoo. The resulting sound is that of air blowing, and not of a drone.

Flute:

(audio track – 25)

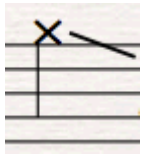


This is a newer technique that has emerged amongst advanced contemporary playing repertoire. This is arguably the most unique sound played on the didgeridoo, as it doesn't involve any instance of a drone. To play a flute sound on the didgeridoo, a player opens his mouth, with his tongue out, and places the mouthpiece of the didgeridoo at the corner of his mouth. At this point, it's important to find the right angle and by blowing gently at the side of the mouth toward the didgeridoo, a 'whistle' or 'flute' sound is achieved. Different pitches can be produced by

blowing harder, pushing the tongue out, and narrowing the mouth closer to the didgeridoo. For example, by doing this a 5th and 8ve above the fundamental flute can be played.

Wail:

(audio track – 26)



A wail can be described as a didgeridoo glissando. The result is very similar to a standard glissando, and is produced by using the voice, descending from a high pitch howl. This can also be likened to a cry.

Shhhoh technique:

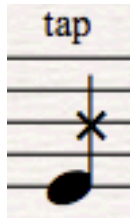
(audio track – 27)



This technique is named after the syllable that is annunciated into the didgeridoo. In other words, 'shhhoh' is said into the didgeridoo. This sound is achieved by placing the tongue at the roof of the mouth and pushing a short burst of air between the tip of the tongue and roof of the mouth. It is almost whistle-like, but resembles the sound of a fast gust of wind.

Tapping on didgeridoo:

(Hudson audio track – 2)



Often utilized in traditional didgeridoo playing, tapping the didgeridoo can be done with a fingernail, or a tapstick. This is historically done to help keep time during rhythmic passages, but can be employed as a percussion technique for contemporary purposes.

Concluding Thoughts and Discussion

There are some instances in the notation where I was quite precise and detailed regarding the transcription. However, considering the uniqueness of the didgeridoo and its subsequent dependence on the interpretation of the performer, detailed notation with regard to every aspect or nuance of notation is a concern worthy of substantial discussion and observation. Balance between the performed sound and its notation is an ongoing and central topic in this paper. A case in point is the notation showing the direction in which the harmonics are being played. It is difficult to find the right balance of when to be specific, and when not to. Furthermore, as I have previously discussed the challenging aspects of notating vocalization, the part of the body that produces the sound is not specifically notated, but the truth of the matter is the specific body part may in fact create a timbral difference. This highlights my on-going deliberation regarding the process of notation versus timbre.

During the initial phases of working on my notation, I was somewhat skeptical, not only about the process, but about demonstrable results. Due to the complexity of the didgeridoo, I was not confident that accurate notation would be attainable. However, through trial and error and most importantly, by accepting the fact that detailed notation is not always possible, I was

able to focus on what is possible, not the limitations of didgeridoo notation. This was the turning point in my thought processes.

It is understandable how the didgeridoo may be perceived as an “unapproachable” instrument for new composers to attempt its implementation in their pieces or compositions. In an attempt to make the didgeridoo more accessible and ‘user-friendly’ to composers, it is essential to use as many common symbols and articulations as possible when constructing didgeridoo notation. Composers will be more motivated to pursue the inclusion of the didgeridoo rather than to be deterred from the complexities of it. More experience, feedback on and further development of the notation will indicate the success of this endeavour. Even if the didgeridoo notation may continue to be intimidating to new composers, hopefully, it will be more comprehensible and approachable.

CHAPTER 2: TRADITIONAL VERSUS CONTEMPORARY DIDGERIDOO

Differences Between Traditional and Contemporary Didgeridoo Styles

A major topic in my research is regarding the difference between traditional and contemporary didgeridoo playing styles. Early in my didgeridoo playing career, I noticed a stark difference between the two playing styles, but it wasn't until recently that I started to analyze *what* is different about them. It was challenging to find commonalities between the two playing styles, as the differences in styles were more discernable. Thus, the question, how does one accurately notate the didgeridoo? How else can one notate an instrument that is, on paper, one note and devoid of any structured notes and key/sound holes? Hence, the exploration of notation versus timbre becomes necessary. Does one notate what the didgeridoo player is physically doing to produce a certain sound, or does one notate the certain sound that the listener hears? For example, in regards to the notation for the direction of harmonics, the arrows simply represent the direction in which the harmonics are played, not a symbol representing how the sound is physically played – a sharp drone. This dichotomy in notation is attributable to the didgeridoo's complexity -- the same complexity which makes the answers to the posed questions challenging. The infinite amount of sounds that could potentially be produced from the didgeridoo is from the fact that all sounds stem from the human voice. Not only does the voice produce an innumerable amount of sounds, timbral differences can be produced with a slight change of the mouth, cheek, tongue, or diaphragm. This simple observation is just one factor which complicates and challenges one to answer the question concerning the accuracy of didgeridoo notation. For this reason, the research presented in this thesis may not produce

answers and conclusions that are absolute and unequivocal. What this thesis will do though is demonstrate the necessity for continual research and discussion.

When analyzing traditional versus contemporary playing styles, it is important to identify each style before analyzing *how* and *why* each differs from the other. This is an example of traditional playing (Hudson audio track - 1). An example of contemporary playing in the previous example of Sanshi performing a didgeridoo improvisation. (audio track – 10)

Yolngu Didgeridoo Playing Style

It is important to note, as David Hudson mentions in our discussion, that traditional didgeridoo playing is a very broad term.⁴ In fact, many different northern Aboriginal communities have completely different playing styles from one another. This stems from their remoteness, and language, which are not mutually-intelligible to each other – a point that many people may not realize. However, traditional didgeridoo playing, no matter where it originates in Australia, has a similar role within traditional Aboriginal music. It is always considered an accompaniment to the singer and even though the rhythms may differ, the song forms follow similar patterns.⁵

The most researched and accessible Aboriginal traditional music comes from Arnhem Land in the Northern Territory. For comparison sake, traditional Arnhem Land didgeridoo playing will be used as a sample of traditional didgeridoo playing style. Note, the techniques of this style are indigenous to Arnhem Land and are not necessarily recognizable in other Northern Australian Aboriginal communities. Also, for the purpose of consistency, when referring to the

⁴ David Hudson, interview by author, Cairns Australia, Dec. 29, 2017.

⁵ For full transcript of interview with David Hudson, refer to Appendix A.

techniques used in traditional didgeridoo playing styles within this chapter, it will solely focus on Arnhem Land, specifically in the north-eastern region. A large exposure to this region's playing style would allow a didgeridoo player and/or musician to be able to identify the certain characteristics that aren't found, or are uncommon, in contemporary playing. The most significant variation is that traditional didgeridoo playing features more tonguing. Tonguing, in didgeridoo terms, refers to not only using the tongue to produce rhythms, but also *how* the player tongues. In traditional didgeridoo playing style, players tongue in a more 'staccato' feel and direct the sound into the cavity of the didgeridoo. This requires a considerable amount of skill, as the lips tend to loosen and have less control, the more pressure is applied to them. Tonguing behind tightly pursed lips is more strenuous, due to the tendency of the tongue to "break through" the seal, causing a disruption in the drone. It is more common for contemporary players to produce rhythms with their cheeks, as it is much easier to control, when continuing a rhythm while circular breathing. Producing a rhythm through the cheeks, naturally causes them to puff in and out, which in turn, makes circular breathing more natural and seamless. However, in terms of traditional didgeridoo playing styles, because it is more "tongue-y" and staccato, the cheeks are naturally concaved, making it much more difficult to circular breath. This is also compounded by the playing of complex rhythms, characteristic of most Northern Aboriginal traditional didgeridoo music. For this reason, traditional players are considered masters of the instrument. Also found in traditional didgeridoo playing styles, is the technique of a constant growl, or hum, which is produced simultaneously with the drone. This sound is a distinctive technique of traditional didgeridoo playing and produces a 'bigger', deeper, and stronger sound. (Mununggurr 2005) Refer to audio track – 28. Moreover, humming and growling into the didgeridoo causes fluctuations in the sound of the drone.

Traditional Didgeridoo Playing & Language

Most importantly, traditional didgeridoo playing primarily focuses on language. Language is prevalent in how traditional rhythms are taught (Mununggurr 2005). Traditional players simply annunciate words, or syllables, into their didgeridoo, thus producing the desired rhythms and timbre. Whereas this is also a common teaching technique found in contemporary schools, it is not the only approach to learning didgeridoo rhythms -- the majority of contemporary didgeridoo artists have little to no knowledge of aboriginal languages. Conversely, rhythms are only taught through language in traditional didgeridoo instruction. Traditional didgeridoo players use traditional languages in the physical production of sounds. Due to the tongue-y and staccato-like nature of traditional didgeridoo playing, the syllables are much more audible and prevalent. Subsequently, these sounds/words which are annunciated into the didgeridoo, would be unfamiliar and thus, quite difficult for many outside of those communities to pronounce and reproduce.

There's a certain characteristic of Aboriginal languages which gives traditional didgeridoo playing a completely different sound. This would be very difficult to replicate on the didgeridoo if one was not presented with the exact syllables to use beforehand. In these examples, the people from North-eastern Arnhem Land are known as the Yolngu. The Yolngu language is an indigenous language, part of the Pama-Nyungan family, which is only found in Australia. Characteristics of this language feature strong and weak consonants, as well as retroflex tonguing - uncommonly found in European languages (Christie 1994).

Figure 4: “Dith-Dhu Dhirrl Dhirrl Improv, Pt. 1” (Mununggurr, 2005) (audio track – 29)

Dith-Dhu Dhirrl Dhirrl Improv, Pt. 1

Example of Yolngu playing style

Performed by Milkay Mununggurr

Transcribed by Marko Koumoulas

During Milkay Mununggurr's tutorial lesson, he mentions that in authentic Yolngu playing style, didgeridoo players constantly use their voice. By humming or singing into the didgeridoo at all times, it creates the "growl" sound that is so unique about traditional north-eastern Arnhem Land didgeridoo playing. Thus, for transcription purposes, any vocal notation will be presented when there is a clear fluctuation of sound between the vocals and the drone of the didgeridoo. Or, when the vocals are of significantly higher pitch than the fundamental drone. This shouldn't be confused with the humming/multiphonics technique first spoken about in the notation legend.

$\text{♩} = 215$ ---

5 Dith-Dhu Dhirrl Lo Dith-Dhu Dhirrl Dith-Dhu Dhirrl Lo Dith-Dhu Dhirrl Dhirrl

9 Dith-Dhu Dhirrl Dhirrl Dith-Dhu Dhirrl Dhirrl Dith-Dhu Dhirrl Dhirrl Dith-Dhu Dhirrl Dhirrl

13 Dith-Dhu Dhirrl Dhirrl Dith-Dhu Dhirrl Dhirrl Dith-Dhu Dhirrl Dhirrl Dith-Dhu Dhirrl Dhirrl

17 Dith-Dhu Dhirrl Dhirrl Dith-Dhu Dhirrl Dhirrl Dith-Dhu Dhirrl Dhirrl Dith-Dhu Dhirrl Dhirrl O - -

19 Dith - Dhu Dhirrl Dhirrl Dith - Dhu Dhirrl Dhirrl O - - O - - O - -

Dup - Pu Dhirrl Dhirrl Dup - Pu Dhirrl Dup

Discussion Excerpts from David Hudson Interview

According to David Hudson (2017), traditional didgeridoo playing is more monotone. Contemporary playing gives freedom to the player to tell a story. Using a variety of techniques, while implementing common Creation being sounds, contemporary playing can create a musical story or landscape on its own. For example, Hudson tells the story of a man who spots a dingo and a kangaroo while walking in the bush and throws his boomerang in their direction: (Hudson audio track – 16). In traditional contexts, the didgeridoo does not have the opportunity to tell stories by itself, as it is simply an accompaniment instrument; it is the song man or dancers who do the story-telling. Likewise, the visual difference in notation clearly illustrates this contrast of traditional and contemporary didgeridoo playing. In traditional-style didgeridoo playing, there is a much greater emphasis on the rhythm and syllables in contrast to the many vocal techniques found in contemporary playing. This is what David Hudson means by “monotone”. Traditional rhythms are quite repetitive and feature very little vocalization and extended techniques. An interesting note is that the Yolngu, in north-eastern Arnhem Land, are known for their tongue-y rhythms and use of toots, which isn’t as common in other parts in Northern Australia.

‘Didge-Friendly’ Notation

During my stay in Far North Queensland, Australia in December 2017, David Hudson and I had multiple discussions of the significance of a potential didgeridoo notation lexicon. When I approached Hudson with my proposal, he suggested the idea of a didge-friendly notation. Though ultimately the notation I have developed is for composers and ethnomusicologists alike, I became very intrigued with Hudson’s idea. Frankly, it was not my intention to create notation for the purpose of teaching beginner didgeridoo players. In my rationale, I have always been

focused on creating didgeridoo notation that would benefit composers and/or ethnomusicologists. However, after multiple discussions with Hudson regarding the creation of didgeridoo notation, I think it may be worthwhile in exploring the concept of a didge-friendly notation. Hudson was especially interested in using didgeridoo notation for teaching purposes within Aboriginal communities. With that in mind, he believed it was important to keep the notation as simple as possible as most didgeridoo players in Aboriginal communities were not familiar with standard western notation.

CHAPTER 3: DIDGERIDOO NOTATION & THE ROLE OF THE DIDGERIDOO IN THE ORCHESTRA

Context for Development of Didgeridoo Notation

Most didgeridoo orchestral performances and attempts at didgeridoo notation have been made by Australian composers including Sean O'Boyle, William Barton and Liza Lim, whose compositions will be further analyzed in this chapter. Notable ethnomusicologists, Steven Knopoff (Neuenfeldt 2000, 55) and Peter Dunbar-Hall (Neuenfeldt 2000, 72) have made attempts at didgeridoo notation. These attempts at notation will be discussed later in this chapter. However, there are very few instances of didgeridoo utilization in orchestras and even fewer attempts to develop a cohesive and comprehensive notation. Prior to introducing a novel notation system of my own, I will attempt to discuss the context in which didgeridoo notation has been developed.

Historical Use of Didgeridoo within Orchestral Contexts

There are many more instances of the didgeridoo used in orchestral and string ensembles than there are attempts at written didgeridoo notation. Ensemble examples include: William Barton and his collaborations with soprano Delmae Barton (*Dreamtime Duet* 2007) and with the Kurilpa String Quartet (*Petrichor from Birdsong at Dusk* 2014), as well as David Hudson with pianist Mark Mannock (*Primal Elegance* 2007), among others. Although the inclusion of the didgeridoo would have been well-planned in such ensembles, very few pieces would have notated the didgeridoo and most scores would contain large improvised sections of didgeridoo

playing. Furthermore, there are a series of examples of traditional and non-traditional didgeridoo players playing contemporary-style didgeridoo alongside other musicians.

There is a notable similarity among composers regarding the integration of the didgeridoo within orchestral situations. For example, *Dreamtime* (Lieske 2013), *The Compass* (Lim 2006) and *Concerto for Didgeridoo* (O'Boyle and Barton 2003) have all utilized the didgeridoo as a focal point. Consequently, a majority of didgeridoo-inspired orchestral pieces contain an Australian Aboriginal story or theme, which is often to the instrument's detriment. Many composers attempt to bind the playing of the didgeridoo to a cultural manifestation of the Australian Aboriginals, as opposed to treating the instrument as it is – a wind instrument that can be played, analyzed and notated in western composition. As a result, an argument can be made that the lack of didgeridoo notation can be tied to the propensity for composers to attempt to invoke a sense of feeling and cultural connection to the piece prior to utilizing the didgeridoo for its unique, quasi-wind instrument properties. Historically, the didgeridoo is represented as a simple one-note drone percussive-like instrument. But in reality, that is simply not the case. This is a topic to be discussed further within my notation rationale.

There are generally two ways in which the didgeridoo has been utilized in orchestral contexts. In the first instance, the didgeridoo plays the role of the drone instrument, which often results in supporting various winds, in the same way that lows are sustained by cellos or double-bases. A prime example of this is *Dawn Mantras* by Ross Edwards (2007). The didgeridoo has the great ability to add texture to orchestral pieces. Through the addition of barks and vocalization, such as accents and 'counterpoint' to the orchestral melodies, the didgeridoo does not

need to be the main 'attraction' in a particular piece. Its acoustic versatility allows it to accompany pieces and blend into many compositions.

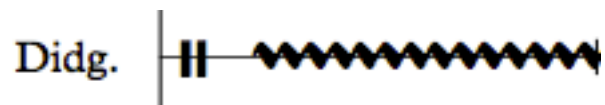
For all its benefits, there are still some issues worth discussing regarding the inclusion of the didgeridoo in orchestral settings. For one, there is the issue of tuning. Many traditional didgeridoos aren't perfectly tuned to a specific pitch, or key. It is not uncommon to have a didgeridoo that is slightly flatter or sharper than the desired pitch. This could, in theory, hinder composers from using it specifically as a drone, or a colour that can support the orchestra, and instead have the orchestra 'accompany' the didgeridoo. By bringing the didgeridoo up to the forefront, it would put the aural emphasis and focus on the didgeridoo, on the extended techniques and vocalizations, and the tuning balance between the didgeridoo and orchestra would not be as noticeable. This idea/technique is the second way, and the most common one used historically by composers who have utilized the didgeridoo within orchestral constructs. The didgeridoo, being an un-common non-western instrument within the orchestra, is predictably a focal point when included in most orchestral pieces. This is also the case in pieces such as Ravi Shankar's *Concerto for Sitar* (1971) and Lou Harrison's *Concerto for Pipa with String Orchestra* (2004).

Wulfin Lieske's *Dreamtime*

One of the more recent and significant attempts at didgeridoo notation was made by Wulfin Lieske, a German composer and guitarist. In 2013, Lieske used a didgeridoo in an orchestral setting to compose *Dreamtime*, which well-known Australian Aboriginal didgeridoo player, Mark Atkins, performed (Lieske 2013).

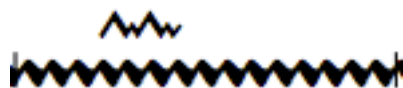
I had the privilege and opportunity to speak with Lieske about his work and his approach to didgeridoo notation.⁶ In the initial stages of Lieske's score, the didgeridoo part is written on a one-line percussion staff. Lieske represents the didgeridoo drone as an elongated trill line, that covers the staff line:

Figure 5: Didgeridoo Staff (Lieske, 2017)



Lieske explains that the trill line subsequently gives the didgeridoo player freedom to create rhythmic variations. To represent vocalization, Lieske adds what is actually a guitar shake symbol over imprecise areas:

Figure 6: Lieske's Example of Didgeridoo Notation

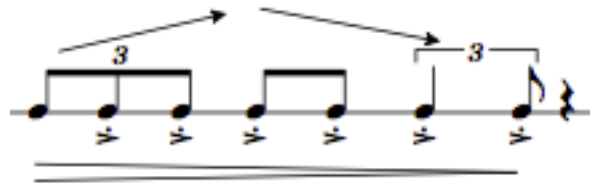


There is no exact rhythmic indication of the particular beat at which the player performs the vocalization technique, nor the duration of the technique itself. Lieske states that in *Dreamtime*, didgeridoo player Mark Atkins listens for specific cues from the orchestra, which prompt him to perform barks and similar vocalization techniques. In addition, there is a lack of instruction concerning the type of vocalization that is to be played in the didgeridoo part. By the third page of the score, the didgeridoo part is realized with many barks and vocalization

⁶ Wulfin Lieske, Skype Interview with author, Aug. 18, 2017.

techniques as earlier in the piece, but the vocalization symbols are no longer shown. Furthermore, Lieske explains that although the symbols utilized for barks/vocalization are employed in specific areas, the didgeridoo performer is not restricted to these specific instances. Lieske uses the symbols sparsely throughout the piece. Other examples of didgeridoo notation appear at "Section R" of the score, where there are notations with direction arrows (pointing up and down) above the rhythm:

Figure 7: Lieske's Use of Vocalization Direction

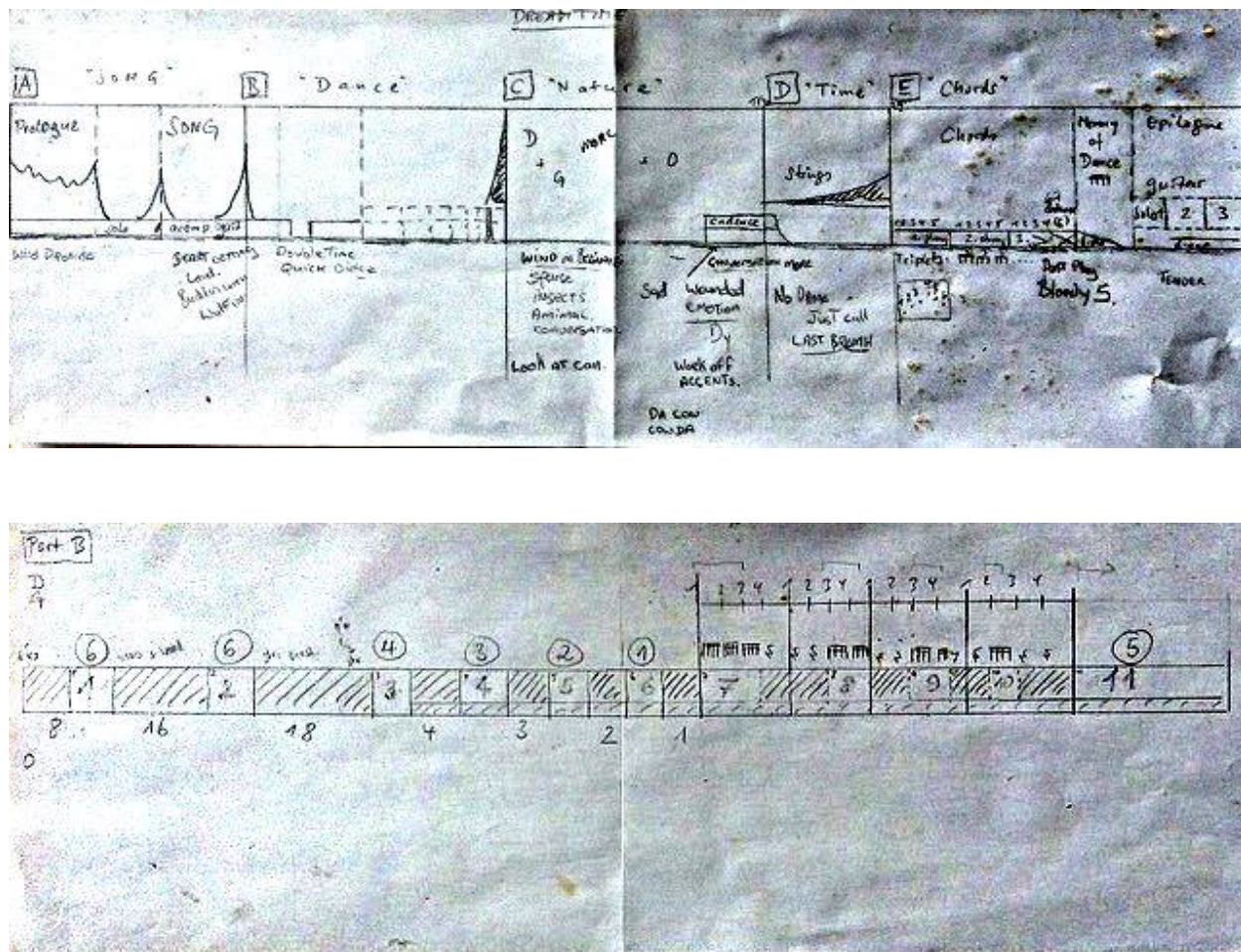


The arrows, which indicate the direction of the pitch of the vocalization (overtone) from the didgeridoo, are Lieske's most precise didgeridoo notation. Lieske also employs simple score instructions, such as "didge solo 2 wild rhythmic [sixteenth]" and "work off accents", as well as describing certain sounds he wishes the didgeridoo to convey. An example of such a sound is "insects" and "conversation".

Although *Dreamtime* did contain didgeridoo notation, the 'didgeridoo map' created by Lieske and Atkins was not included in the orchestral score⁷:

⁷ "Original Map" Notation provided to author by Wulfin Lieske, August 11, 2017.

Figure 8: “Dreamtime” Didgeridoo Map



This map was created for Atkins to follow along with the piece, using diagrams, symbols and further instructions when performing alongside the orchestra. Interestingly, this didgeridoo map lends itself to a personal conversation I had with David Hudson. Hudson indicated in a discussion that didgeridoo notation would only succeed in Aboriginal communities if a strong emphasis was placed upon symbols and representations of nature and Creation beings. Nature and Creation beings, which are integral to Aboriginal music making and spirituality, have been represented culturally for thousands of years. As a result, Hudson has indicated that a 'didge-friendly' notation for Aboriginal players would be an interesting future endeavor. Conversely,

my own attempt to develop didgeridoo notation is specifically meant to educate musicologists, ethnomusicologists and composers about the intricacies of the didgeridoo and thus, is represented in a traditional 5-line staff in western notation. (See David Hudson interview, Appendix A).

Admittedly, Lieske (2017) was not initially concerned with notating the didgeridoo. In particular, it was something of an afterthought and specific notations were used simply used to indicate the introduction of the didgeridoo within the score. Notwithstanding, this is a significant attempt at didgeridoo notation, as there have been few attempts in western notation. Specificity in didgeridoo notation is extremely challenging and ultimately depends on the techniques the composer wishes to convey. As a result, it is recommended to consult with the didgeridoo player before-hand to gain his input on potential score-specific didgeridoo notation. If one does not have this opportunity, it is recommended that detailed composer notes are developed, which would indicate specific techniques in which notation cannot be conclusively conveyed to the player.

Sean O'Boyles's *Concerto for Didgeridoo*

Another piece which utilizes the didgeridoo within its orchestral work is *Concerto for Didgeridoo*, composed by Sean O'Boyle and William Barton (2003). The piece itself was composed through collaboration between both composers, and the didgeridoo parts were sketched out prior to O'Boyle's orchestral accompaniment. The *Concerto for Didgeridoo* liner notes provide a clearer view of how this was achieved:

When William Barton first visited my studio in early 2003, we spent many hours together sketching out a concept for the concerto. The process began as a discussion

of the four elements: Earth, Wind, Water and Fire. This was further developed by recording William's musical thoughts, both vocally and through his didgeridoo. Each of the movements has distinctive rhythmic features, some of which were transcribed from William's original musical sketches, to which I have composed original melodies. The most recognizable of these rhythms is in Fire. The melodies, and fragments of melodies, that William recorded became the foundation of the musical structure throughout the work (O'Boyle 2007, 5).

Concerto for Didgeridoo provides perhaps one of the most extensive and detailed examples of didgeridoo notation. Not available to the public, I was given a copy of the didgeridoo sheet music by Sean O'Boyle himself, which was transcribed by American musicologist, Dr. Harold S. Kacanek. Within his notation, Kacanek puts a lot of emphasis on the vocal syllables used by William Barton:⁸

Figure 9: Kacanek's Example of Vocal Syllables.



In this example, one can see several notation techniques that commonly occur throughout the entire transcription. Firstly, is the technique instructions listed above the staff, "aggressively...closed". In this case, "closed" refers to the mouth shape of the player. The shape of the mouth, as explained in my didgeridoo notation legend, is very important in regards to the timbral changes which can occur. A closed mouth shape, will produce a more staccato-like or 'focused' sound which is directed straight into the didgeridoo, making the sound more

⁸ Copy of Dr. H Kacanek's transcription sent to author via e-mail by Sean O'Boyle, November 17, 2017.

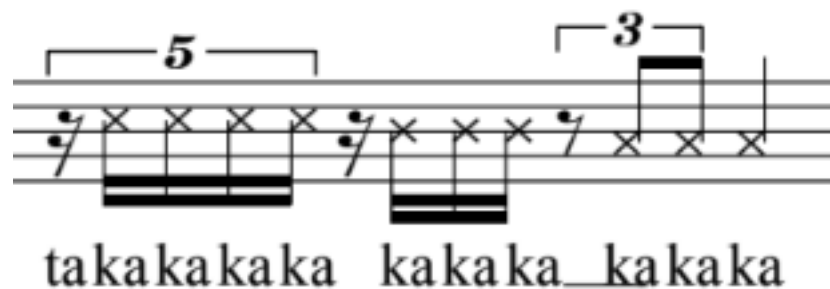
pronounced. Before diving deeper in to the transcription itself, I was able to speak with Dr. Kacanek, regarding his thought-process.⁹ Interestingly, Dr. Kacanek explained the main, and only reason, he put so much work into the transcription and notation was actually because *Concerto for Didgeridoo* was being performed in his hometown of Milwaukee, Wisconsin, and he was asked to perform the didgeridoo part live. He iterated that he would not have put as much effort into the notation, if this wasn't the case, as he felt by making it so specific and detailed allowed him to personally perform the piece much easier.

As shown in our first example, there are a couple 'x' noteheads, which coincidentally is also the symbol Dr. Kacanek uses for barks. Also notable is the use of vocal syllables underneath the noteheads. This previously is indicated in my traditional didgeridoo notation, but not in my contemporary notation. Being a clear example of contemporary playing, I asked Dr. Kacanek why he felt the syllables were necessary to display in his notation. He explained that because he was performing a previously recorded and performed piece, he wanted to be as accurate as possible for his performance. This brings up another interesting topic/discussion regarding whether the notation of a piece should differ, depending if the piece has been previously played or not. For example, in Dr. Kacanek's case, he was clear and detailed at attempting to convey all the little mouth shape nuances and syllables that were used by William Barton, in order to best replicate the required sound. However, in the case of a notation being created or written for a piece that has yet to be performed, it would be unnecessary to put the syllables, especially because this would add an entire level of specificity and knowledge of the didgeridoo that only a didgeridoo player would understand. I personally believe this is an example of 'crossing the line', in regards to attempting the complete control of a didgeridoo

⁹ Harold S. Kacanek, Discussion via Skype with author, January 16, 2018.

sound. It would be much more difficult for the didgeridoo player to read this and play it accurately, without any prior recording as a reference. Perhaps the most interesting method Dr. Kacanek uses is his attempt to notate barks at different pitches: (O'Boyle 2007)

Figure 10: Kacanek's Example of Barks at Different Pitches.



(audio track - 30)

One can see and hear in the audio example how William Barton uses his voice to accomplish different pitches. This is an aspect of pitch differentiation that I had never considered including within my own didgeridoo notation, but Kacanek's notation provided the rationale for the incorporation of this accuracy into my notation. On the other hand, the only 'flaw' or argument against this particular notation decision, is that the notes shown do not represent the exact pitch of the barks, but rather indicate the range of the pitch. Similar to percussion notation, the 'x' noteheads do not denote an exact pitch in relation to its placement on the staff. Other techniques notated include, toots:

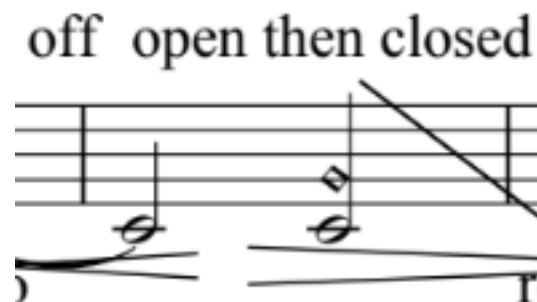
Figure 11: Kacanek's Example of Toots



'Wails' indicated in a diamond-shape notehead, is the standard vocalization symbol

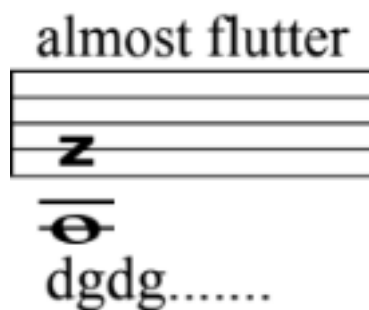
Dr. Kacanek uses, anytime it's held for a half-beat or longer:

Figure 12: Kacanek's Example of Wails



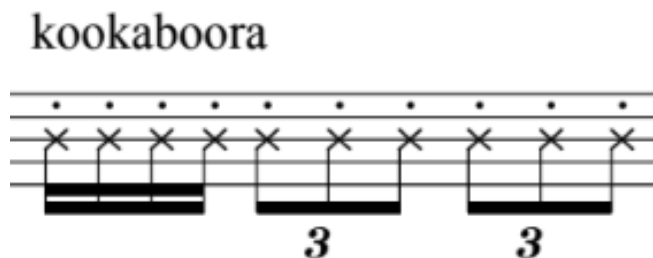
The location of the diamond-shaped notehead, in this example, is an approximation of the note the didgeridoo player begins his vocal wail on, also notated by the downwards diagonal line, similar to a glissando. Once again, instructions regarding the mouth shape, 'open then closed' instruct the player to begin his drone with a more open mouth shape, and then gradually closing the lips tighter, producing a sharper drone. In the second movement of *Didgeridoo for Concerto*, Dr. Kacanek notates what is technically fast double-tonguing, but sounds very similar to a flutter on most instruments, using the symbol 'z':

Figure 13: Kacanek's Example of Flutter Tonguing



The syllables underneath this whole note explain what the didgeridoo is physically doing to produce the sound. The didgeridoo player would be annunciating 'd' and 'g' sounds in quick succession, which naturally causes the tongue to snap back and forth behind the front teeth, producing a 'flutter' sound. Some didgeridoo techniques involving the voice, can be easily instructed by a phrase or word, instead of inventing a new notation for it. Dr. Kacanek and I were in consensus regarding this. When William Barton uses a common 'kookaburra' vocal technique, Dr. Kacanek simply notates it as:

Figure 14: Kacanek's Example of 'Kookaburra' Vocal Technique



A didgeridoo player would understand what to do if presented with the 'kookaboora' instruction. It cannot be stressed enough how the concept of Creation beings is a significant and

integral part of didgeridoo playing; thus, the majority of sounds produced by the didgeridoo can be associated with specific animals – an association universal across Australia, and contemporary players around the world. One important consideration to note is that Dr. Kacanek is a didgeridoo player, and subsequently, the notation used is much more detailed and specific, compared to the original notation O'Boyle used in the full score at the time of its original premiere.

In contrast to Kacanek's transcription notation, O'Boyle's original representation of the didgeridoo within his score is very simplistic.¹⁰

Figure 15: Didgeridoo Staff (O'Boyle, 2007)



There are instances, however, where O'Boyle notates a simple rhythm and adds instructions such as "ad lib". Notation such as this is definitely the norm, as the didgeridoo knowledge amongst composers, as mentioned earlier, is quite basic.

O'Boyle's *Concerto for Didgeridoo*, is also one of the most extensive attempts of the didgeridoo used within an orchestral setting. O'Boyle uses standard modern orchestral instrumentation to play alongside the didgeridoo. Being a concerto, the didgeridoo is considered

¹⁰ Sean O'Boyle, Sent via e-mail to author, November 18, 2017.

the featured instrument within the piece. An analysis of how the didgeridoo is used in this context would facilitate a discussion of the validity of my proposed notation.

The first movement is called *Earth*. The liner notes state:

Starting ominously with the initial theme deep in the orchestra, the music is raised to a thundering climax with the didgeridoo playing a short cadenza. The orchestra returns with the gentle birth of the earth and kookaburras greeting the dawn of the ages. This leads to a wild dance with heavy brass and percussion punctuation. The dance dies away as the earth rests (O'Boyle 2007, 5).

As stated above, this movement begins ominously, setting a musical landscape as the main theme of the movement begins. The didgeridoo, in the key of E-flat, is soon introduced, playing many barks and growls. Following the didgeridoo cadenza, the theme returns within the orchestra. As the theme develops, the didgeridoo imitates sections of the orchestra in a somewhat aggressive manner while featuring extended techniques such as toots and kookaburra. The didgeridoo then moves to the forefront with a driving rhythm featuring other Creation being vocal techniques such as the dingo howl and brolga calls. In this section, percussion instruments are the only part of the orchestra accompanying the didgeridoo. One observation to note is that overall, the movement is not very melodic and instead repeats variations of previous motifs/themes. In theory, this prominence of the didgeridoo enables further control and freedom regarding its techniques, and thus, facilitating the integration of the didgeridoo within the orchestra.

The second movement is called *Wind*. The liner notes state:

The movement begins with rumbles of air from the didgeridoo; low strings hint at the theme whilst flutes and the bass clarinet swirl. The strings stride at the head of the furious gale, the woodwinds scurry and shriek, and the dingo prowls at the edge of the fury. The wind rises and falls with intense wrath. The whirly-wind makes its

presence felt, with the didgeridoo and bullroarer in counterpoint. The wind dies away and the land is again at peace (O'Boyle 2007, 5).

This is the shortest movement of the concerto. After a short introduction by the didgeridoo in the key of C, the orchestra crescendos in with a 'dark' motif. As the orchestration builds, the didgeridoo mimics the rhythm of the theme/motif played by the string section, using a series of barks. This pattern develops as the didgeridoo and strings play almost concurrently, adding an interesting dimension and accent to the rhythm. Personally, I believe this technique is quite successful and the inclusion of the didgeridoo enhances the string section. Also noteworthy is how the didgeridoo utilizes double tonguing and flutter tonguing throughout the movement as a way to help accentuate rhythms.

The third movement is called *Water*. The liner notes state:

A dreamy beginning with murmuring strings, bowed vibraphone and woodwinds that ebb and flow. The horns make a statement – echoed in the oboe and flutes which lead to an aquatic world where water is heard trickling and plopping whilst the didgeridoo weaves the underworld waterscape. String, muted trumpets and woodwinds shimmer in the gloom and the cellos take a poignant place towards the end, leaving the music unresolved (O'Boyle 2007, 5).

This movement is much slower and features more wind orchestration in the introduction. The didgeridoo, in the key of C, first enters quietly with a drone and vocal wails. To the listener, this sounds reminiscent of a 'whale song', which supports the overall theme of the movement. When the didgeridoo is introduced, it alone takes prominence, with little accompaniment from the orchestra. In fact, the main instrument accompanying the didgeridoo at this time is a water gong. Soon after, the didgeridoo begins a much faster-paced and complex rhythm solo followed by a simple drone and wail. Again, the orchestral accompaniment is very sparse, featuring light

percussion and quiet string tremolos. Following the didgeridoo solo, the 'water' theme in the introduction of the movement returns to the orchestra, similar to the first movement. Overall, in the third movement in particular, the didgeridoo and the orchestra play consecutively, not concurrently. The movement ends with the didgeridoo, much more controlled and simpler during the return of the theme. I think O'Boyle's decision to alternate between the orchestra and didgeridoo is quite successful. If we consider the potential challenges the didgeridoo could have in an orchestral setting, such as tuning, then this movement is an excellent example of how associated challenges. Whether this was intentional or not by O'Boyle, or suggested by Barton, the result is effective.

The fourth and final movement is called *Fire*. The liner notes state:

A great destroyer and renewer of life flares up and down, seeming to hide then reappearing with destructive force. Wildly unpredictable, it blazes its way across the landscape until a thundering unison note dies away to reveal a virtuosic cadenza on the didgeridoo. The fire, cleansed, fades away and a solo flute plays a duet with the didgeridoo as the embers die out (O'Boyle 2007, 5).

The fourth movement begins very busily and frantic in the orchestra, without the didgeridoo. As in the second movement, the theme is very chromatic. The didgeridoo becomes part of the rhythm section parallel to the string section playing simple ostinatos. A common orchestration throughout the piece, the didgeridoo and rhythm section counter each other while the didgeridoo and strings mimic the rhythm once again. The didgeridoo barks match the string section, note-by-note. The movement repeats its theme, over and over again, but with variations in the orchestration. Double tonguing and flutter tonguing are yet again recurring techniques of the didgeridoo. During loud orchestral parts, the didgeridoo accents rhythmic figures through barks in the background. Finally, familiar didgeridoo rhythms from earlier in the concerto return as the didgeridoo transitions into a much faster virtuosic cadenza. Following the cadenza, the

orchestra transitions quietly and at a much slower tempo. During this section, the didgeridoo plays a simple drone with wails, similar to the third movement. The movement ends with didgeridoo tonguing and multiple barks, playing call and response with the flutes and oboe, culminating with a big punctuating bark to end the piece.

Closer observation of this piece provides a much clearer picture of how the didgeridoo can be used within orchestral constructs. From solo cadenzas, to rhythmic accenting and playing off melodic motifs, O'Boyle and Barton were successful in showcasing the many ways one can utilize the didgeridoo within their pieces.

Liza Lim's Notation and Approach

Another example of notation used in a compositional context is Liza Lim's *The Compass* (2006). Once again, William Barton performs as the featured didgeridoo player. *The Compass* is an approximately twenty-minute piece for orchestra, flute and didgeridoo, which first premiered in August 2006 by the Sydney Symphony Orchestra. In June 2006, Liza Lim was interviewed by Gordon Kerry, where she discussed her rationale and approach to incorporating the didgeridoo within her piece. Excerpts from the interview are included in the programme notes and on focus Lim's rationale:

Gordon: In some respects, *The Compass* is a double concerto, but what will strike most listeners is of course the use of the didgeridoo played by William Barton. Is the didgeridoo a kind of cipher for Australian-ness? Does the physical sound of the instrument have an effect on the way you generated pitch material in the rest of the orchestra?

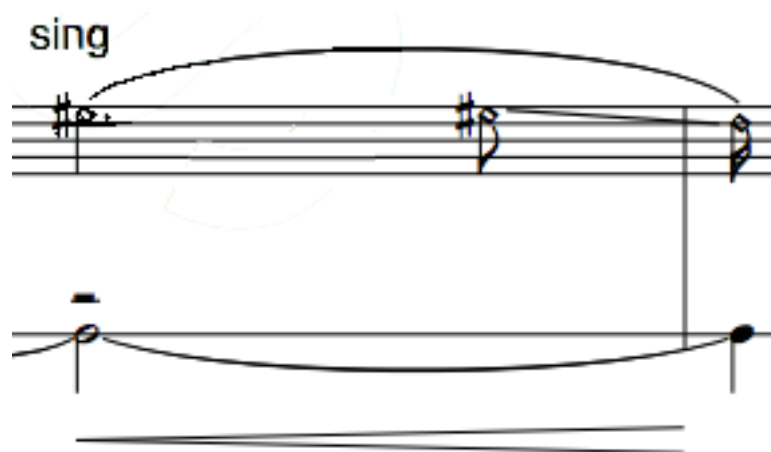
Liza: William plays two didgeridoos in the piece, tuned in A and C. These are the two lowest instruments he owns and are in my mind, the most 'regal' of his didgeridoos. At a basic level, they provide a bass line, they are reference points that generate the fundamental sonorities which resonate throughout the orchestra. The harmony, for instance, uses microtonal intervals which arise as upper partials of the didgeridoo's sound.

The didgeridoo also ‘gathers’ the other low instruments of the orchestra around it – the brass instruments, bassoons and contrabassoon, bass clarinet and double basses so that this grouping has a special prominence in the piece – they become a meta-didgeridoo!

I wanted to transform how the didgeridoo is heard so that it is not just a generic sound that stands for ‘Australian-ness’. When I work with any cultural element (whether Mahler’s orchestration or Korean or Chinese traditional music), I try and look below the aesthetic surface and investigate the sub-structure, the ‘pattern language’ of that thing. (Kerry 2006).

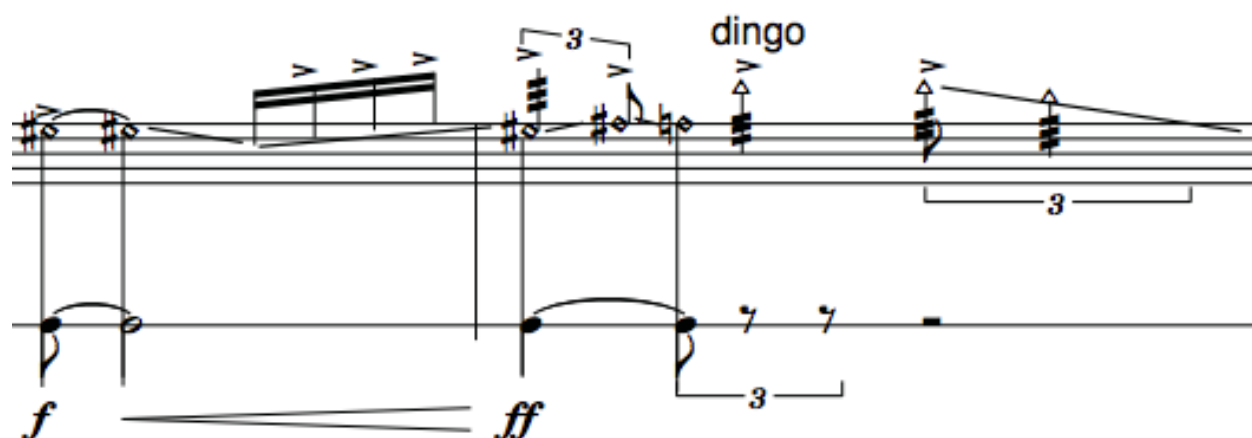
Lim had a clear plan regarding the incorporation of the didgeridoo and its role within the orchestra. Lim uses what might be the most unique didgeridoo notation out of all the songs highlighted in this chapter. In contrast to other attempts at didgeridoo notation, Lim represents the didgeridoo on a grand staff, with a standard 5-line staff in bass clef above, and a one-line percussion staff on the bottom. The upper half of the grand staff is solely for didgeridoo vocalization. In fact, Lim notates the exact notes she wishes the didgeridoo player to sing into the didgeridoo, while producing a drone:

Figure 16: Example of Didgeridoo Staff (Lim, 2006)



Within the first couple minutes of the piece, the didgeridoo vocalization becomes more intricate and rhythmic, the sensation of movement clearly evident:

Figure 17: Lim's Example of Vocalization



Lim's notation of didgeridoo vocalization is somewhat similar to Kacanek's transcription of *Concerto for Didgeridoo*. What is not clear, however, is if Lim notated this as an instruction for what Barton specifically should play prior to the performance. It is not common practice for a didgeridoo player to be instructed to sing exact pitches, such as G#. As there are no key-holes on the didgeridoo, the player would ultimately have to rely on memory to produce the required sound or have perfect pitch. It would be reasonable to conclude that Lin notated the pitch post-performance, not pre-performance. In addition, several observations can be made regarding this one-and-a-half bar excerpt. Initially, in the 5-line staff, used for didgeridoo vocalization, a G# is notated to be sung simultaneously with the drone, which is listed below on the one-line percussion staff. Even though this technique is commonly utilized in didgeridoo practice, Lim's notation of this technique is unique. In any didgeridoo notation discussed thus far, this is the first

occurrence of didgeridoo notation that is separated into two different staves. Also within the excerpt, is notation for a dingo vocalization shout, which can be synonymous with the bark technique in some instances:

Figure 18: Lim's Example of Dingo Vocalization



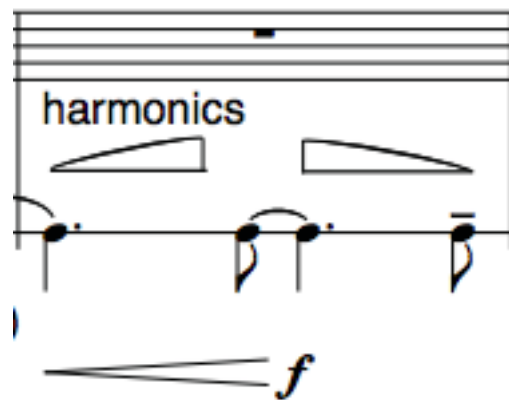
However, for accuracy purposes, there should be a difference between a bark and a dingo howl, as the latter is more of a prolonged vocalization, versus the quick shout of the former. In practice, a dingo technique is often referred to as a bark, but this often translates into a lack of clarity regarding the two separate sounds. Later in the score, Lim's notation for dingo is slightly altered:

Figure 19: Lim's Variation of Dingo Vocalization



The dingo arrow now begins on the bottom drone staff and is extended the entirety of the grand staff. In this instance, the didgeridoo is expressing more of a dingo howl and the lines represent the direction in which to perform the howl. More specifically, the didgeridoo player is producing a howl in the upper vocal range, and then gradually dropping in pitch, as the howl tails off. Finally, Lim also notates directions for didgeridoo harmonics:

Figure 20: Lim's Example of Didgeridoo Harmonics



This notation is quite clear in its intention, as the didgeridoo begins by producing harmonics which build higher in pitch (which inevitably raises the dynamics), and then gradually producing lower harmonics until it ends.

Each of the presented attempts at didgeridoo notation makes a case of representation for western staff notation. However, there is a lack of consistency among the rationales and practicality of these attempts. There is no progressive development in the advancement of didgeridoo notation. Rather, each attempt is somewhat isolated, not incorporating prior notation attempts. In other words, there is no standard lexicon available to composers and ethnomusicologists; each attempt at didgeridoo notation is different and the specific details of

each notation is highly dependent on the individual composer's desires, inclinations and background. The fact that a standard notation is non-existent does not seem to be disconcerting for some of the composers. Some composers believe it is adequate to represent the didgeridoo as a one-or-two-line percussion staff, whereas others, regardless of their didgeridoo playing experience, are more descriptive and creative in how they convey the didgeridoo within their score. These varying approaches provide support for the need of an organized and constructed didgeridoo notation lexicon, a notation that will not overwhelm or intimidate composers from including the didgeridoo in their compositions. The addition of the didgeridoo in orchestral compositions should be a viable choice for the composer, not one that will not be considered due to the lack of standard notation.

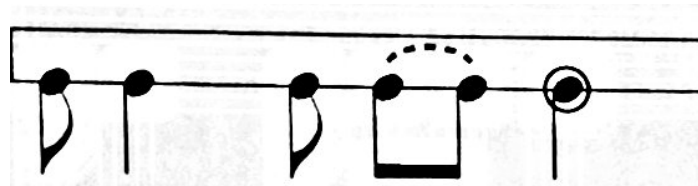
Ethnomusicological Attempts at Notation

Didgeridoo notation, through Aboriginal music transcriptions, has also been explored in the academic field. Authors/ethnomusicologists Steven Knopoff and Peter Dunbar-Hall offer examples of how notation is used in non-compositional contexts. In these cases, the attempts at notation are rather transcriptions of fieldwork recordings for Australian aboriginal music studies, or transcriptions of recorded modern-day aboriginal popular music featuring the didgeridoo.

Nevertheless, these existing notations are important contributions to the accurate representation of didgeridoo techniques and therefore, I have adopted several of these for my lexicon. In fact, many of them have some very useful ideas. The most fascinating and helpful notation Steven Knopoff created is the symbol for didgeridoo slurring. When initially compiling my notation, I decided to notate 'slurring', but was experiencing difficulty in creating the specific

symbol to indicate the ‘slurring’ technique until I came across a short transcription Knopoff created (Neuenfeldt 2000):

Figure 21: “Slurring” Technique (Neuenfeldt, 2000)



Knopoff shows the didgeridoo part on a 2-line percussion staff. The top line is solely for the "blown overtone", which is another term for a toot. The bottom line is for the "blown fundamental" or drone. Knopoff uses circle noteheads for barks or shrieks. Of note is Knopoff's decision to notate the amount of vocal resonance the didgeridoo produces within a particular recording. He uses crescendo and decrescendo markings to represent this. He states, "the more vocal resonance that is used, the richer and buzzier is the resulting tone" (Neuenfeldt 2000, 54).

Figure 22: Knopoff's Example of Vocal Resonance



Peter Dunbar-Hall, an Australian ethnomusicologist, is known for his work with Australian Aboriginal popular music. In his brief transcription of "This Tribal Land" by Ted Egan, Dunbar-Hall uses the following notation for a "pitch slightly sharper than notated" (Neuenfeldt 2000):

Figure 23: Sharp Drone (Neuenfeldt, 2000)



He also creates additional notation symbols for techniques such as, unpitched notes, unpitched growls, glissando and rhythmic pulsation.

CHAPTER 4: ORIGINAL COMPOSITION

Figure 24: “Breath” Original Composition. (Koumoulas, 2018) (audio track – 31)

[illegible]

[illegible]

39 **Lento** poco rit. $\text{♩} = 58$ poco rit. $\text{♩} = 56$

Ob. mp

Pno.

Hp.

Didge.

Lento poco rit. $\text{♩} = 58$ poco rit. $\text{♩} = 56$

Vln. I ppp mf p ap

Vln. II ppp mf p ap

Vla. ppp mf p ap

Vc. ppp mf

Db. ppp mf

57 *poco rit.* **F** *Lento*

Ob. *mp*

Pno.

Hp. *mp*

Dodge.

Vln. I *poco rit.* **F** *Lento*

Vln. II

Vla. *pp*

Vc. *pp*

Db. *pp*

==

63

Ob.

Pno.

Hp.

Dodge.

Vln. I

Vln. II

Vla.

Vc.

Db.

Discussion of Original Composition

Breath is an original piece I composed for this thesis with the intention of showing the didgeridoo as an equal part of an ensemble in orchestral contexts, and not one where it is the focal point, as several attempts have done in the past. The piece itself includes an ensemble featuring solo oboe, piano, harp, string orchestra (violin I, violin II, viola, cello and bass), and didgeridoo. The run length is approximately 5 minutes. The composition can be classified as a through-composed piece, with no melodic or harmonic repetitions of a section. The musical form and overall direction of the piece was not pre-determined or planned out prior to writing; instead the result evolved during the course of writing.

Brief notes and analysis of the piece:

Section A (mm.1-17):

- The piece begins with a syncopated 4-bar piano figure, comprising 2 measures of a Cmaj7 chord followed by 2 measures of Dmaj, with the entire 4 measures repeated immediately.
- The piano rhythms in this section can be described in rhythmic subdivisions such as 2+3+3 and 3+5, and in measures 3-4 as 3+3+3+3+4.
- The repetitious piano figure can be akin to a pedal point. This anticipates the didgeridoo entry later in the piece.
- After 8 bars, the violins enter with a technique employed often during the piece. Sudden crescendo and decrescendo is intended to represent the inhalation and exhalation of a breath. This effect is often used in rock music, where it is known as volume swells (Mueller, 2009). My introduction to this technique in an orchestral context was from

Takashi Yoshimatsu's *And Birds Are Still....* (1998), found within the first 8 measures, which was my inspiration for further exploring this technique in my composition.

Figure 25: Section A, Harmonic Outline (Koumoulas, 2018)

Section A (mm.1-17)												
	1	3	5	7	9	10	11	12	13	14	15	16 17
Piano:	CM7	DM	CM7	DM	CM7		DM		CM7		DM	
Strings:						C6 C6	CM7 DM	DM	D11	C6 CM7	D6	D6 D11

- The figure above shows a more visual representation of the chords played by both the piano and the violins in “Section A”, or measures 1-17. It also shows the rhythmic relationship between the voices. For example, the strings and piano play together on beat one in just measures 11 and 15.

Section B (mm.18-29):

Figure 26: Section B, Harmonic Outline (Koumoulas, 2018)

Section B (mm.18-25)							
	18	19	20	22	23	24	25
Piano:	C6add9	Am11	Em11	C6add9	D6add9	Em11	G6
Strings:	Em11/G	DM/F#	CM9	Em11	DM	Am9	Emadd11

Section B contd. (mm.26-29)				
	26	27	28	29
Didgeridoo:	D	D	D	D
Piano:	C6add9	D6add9	Em11	G6
Strings:	DM Em	DM Em	DM Em	DM Em

- One of the main ‘themes’ of the piece, played by the piano begins at bar 18. The fade-in-and-out of the strings is now extended to the rest of the string orchestra and recurs during much of the piece. This is also the first appearance of the oboe. The oboe is meant to be played very freely, playing a counter-melody to the piano part.
- A recurring musical device for a large part of the piece, starting from this section, is the use of changing tempo -- slowing down and speeding up. This is conveyed by the many *poco ritardando* and *a tempo* markings, along with more precise metronome indications.

Section C (mm.30-47):

Figure 27: Section C, Harmonic Outline (Koumoulas, 2018)

Section C (mm.30-38)

	30	31	32	33	34	35	36	37	38
Didgeridoo:	-	-	-	-		D D	D		
Piano:	CM9	Em7 F#b5	GM	CM9	DM	Em7 G9	CM9	Em7 F#b5	GM
Strings:	-	-	-	-		D6/9	DM Em	DM Em	DM Em

Section C contd. (mm.39-47)

	39	40	41	42	43	44	45	46	47
Didgeridoo:	-	-	-	-		D D	-	-	-
Piano:	CM9	Em7 F#b5	GM	CM9	DM	Em7 GM	Em7	GM C7	GM
Strings:	-	-	G6	Cadd9	DM	D7 GM9	-	-	-

- The gradual change in tempo in Section C is intended to represent someone’s last breaths, or perhaps the calming breath during meditation.
- A 4-measure melodic figure in the piano is repeated in varied rhythms throughout this section.
- As the Section continues and gets gradually slower in tempo, the strings join the piano in playing the melody, in unison, during measures 41-43. Shortly after, in measures 45-47,

the oboe plays a harmonized counter-melody to the piano part, which once again solidifies the motif as Section C ends.

- Due to the lack of rhythmic movement in the string section, I consider the volume swells in this movement to be a crucial element in the piece, especially to create the desired effect.

Section D (mm.48-54)

Figure 28: Section D, Harmonic Outline (Koumoulas, 2018)

Section D (mm.48-54)

	48	49	50	51	52		53	54
Didgeridoo:	D	D	D	D	D		D	D
Harp:	Cm BbM	Gm7	BbM7#9	Cm6add9	-		-	-
Strings:	Cm11	Cm11	Cm11	Cm11	F#aug6 D7 GmM7 F#M	Gm D7	Gm7	Gm7

- Bar 48 begins a new section, where the strings commence with a sustained Cm11 chord.
- It was a deliberate choice on my part to assign a single note to each instrument and avoid many unisons within these chords. This is a common technique found in chamber music, and a common technique throughout the entirety of my piece (Laursen 2016, 6). This can also be described as an avoidance of unison doubling.
- From this section onward, the motivic and rhythmic motifs are mostly presented within the confines of the sections themselves. In other words, the melodic material in section D does not repeat after the conclusion of the section.
- This section also features the first instance of an intentional use of dissonance. This occurs in the harp part, and is mostly used as ‘passing chords.’

Section E (mm.55-59)

Figure 29: Section E, Harmonic Outline (Koumoulas, 2018)

Section E (mm.55-59)						
	55	56	57		58	59
Harp:	CM	Fsus2	E6	CM	Dm9	CM

- This section features solo harp, and is simply a transitional section. The harp, in this case, plays a part similar to a piano, and even has a brief moment of reference to the piano part in Section B.

Section F (mm.60-68)

Figure 30: Section F, Harmonic Outline (Koumoulas, 2018)

Section F (mm.60-68)				
	60	61	62	
Oboe+				
Harp+				
Strings:	Em	Em	DM	G9 FM

Section F contd. (mm.63-68)											
	63		64	65		66	67			68	
Oboe+											
Harp:	GM	Em7	EM9	Gm/Bb	FM7/A	Dm7/A	Am11	Am9	G7sus4	Am11	FM D7add6

- Section F begins with a call and response between the oboe and strings and evolves into a more playful duet between the oboe and harp.
- Though much of the piece is self-contained in separate melodic material within their respective sections, the oboe part highlights familiarity between some of the sections. For example, measures 65-67 in Section F is a motif first presented in measures 19-20 in

Section B, and later in measures 34-35 and 41 in Section C. This consists of a syncopated rhythm between two notes a 5th or 4th apart, usually at the end of a melodic phrase in the orchestra.

The Specific Role of the Didgeridoo

In pieces highlighted in this thesis, such as *Dreamtime*, *Concerto for Didgeridoo*, and *The Compass*, the didgeridoo is treated as the focal point of the composition. As the didgeridoo is an uncommon instrument within the western orchestral tradition, it is understandable why a composer would want to feature it. However, it is my intention to feature the didgeridoo intermittently and not the focal point of a piece. This role mirrors the traditional use of the didgeridoo. The most obvious way to achieve this is to simply use the didgeridoo in its purest form, and that is to use it as a textural drone, or pedal point.

In *Breath*, the didgeridoo, which is in the key of D, first enters in measure 26, following a sustained chord in the strings and a melodic figure in the oboe. This 4-bar, 19 beat didgeridoo phrase is used as a drone, or pedal point, underneath the building passage played by the cellos, as the main piano part continues its repeated figure. I like to think of it as a heartbeat racing faster, or perhaps one who is gasping for air. To take it further, the didgeridoo's kookaburra technique could also be personified as a cry for help. No matter the imagery one sets to the music, the didgeridoo's role in this section is to fill out the sparseness in instrumentation and replace what could have been a bass sustain underneath a double bass's sustained D2. The didgeridoo, in this case, not only continues the "story" of the piece, but the sustained vocalizations provides a distinctive timbre, which cannot be produced by any other orchestral instrument in the piece. Specific techniques featured in this passage include the drop jaw, slurring, sharp and standard

drone vocalizations, humming and the kookaburra. The purpose of beginning the passage with a drop jaw is that it is a useful technique for emphasis.

The second appearance of the didgeridoo is in bar 34, which provides added depth during a sustained D chord by the string section and held over 4 beats. By adding vocalization in the didgeridoo part as the chord is nearing its completion, the didgeridoo's ability to add distinctive timbres within orchestral compositions is highlighted. It was a creative decision to include vocalizations because even though the didgeridoo is used mostly as a supporting instrument, I wanted to draw attention to the timbres it can achieve, which other instruments within this piece cannot. Within the same section, the didgeridoo appears once again in bars 43-44, where the kookaburra is featured once more.

The fourth and final time the didgeridoo appears is in Bar 48, where there is an overall section and key change within the piece. Interestingly, the didgeridoo, still in the key of D, sustains D2 underneath a Cm11 chord, split among several instruments. Even though this is not deliberate, it illustrates the possibility of the didgeridoo playing a pitch that is not the root of a chord, with clarity, as most other western orchestral instruments can, with suitable orchestration techniques.

Additional techniques featured in the didgeridoo part in this passage are humming, harmonics, flutter tonguing, sharp drone vocalization, and standard drone vocalization. Once again, these techniques do not necessarily change the role the didgeridoo is playing. Instead, they are simply used to elaborate the sound, especially because most instruments are without any rhythmic or melodic movement for 19 beats. There is a somewhat role reversal at this point. The didgeridoo takes prominence, while the rest of the instruments play a pedal point.

It should be stressed that I intentionally used the didgeridoo sparingly in my composition to display and confirm the didgeridoo's ability to adapt to orchestral constructs. It was essential for me to use the didgeridoo as an accompanying instrument (intermittently in this case), and not a solo instrument, as it is also used within traditional Australian music. Furthermore, it was a deliberate decision to implement the didgeridoo in an orchestral piece without, a for lack of a better word, exotic Australian Aboriginal background story and related imagery.

Audio Tracks

#1	‘Standard’ drone / Sharp drone
#2	Open vocalization
#3	Sharp vocalization
#4	Humming
#5	Harmonics / Direction
#6	Flutter tonguing
#7	Toot
#8	Bark
#9	Slur
#10	Didgeridoo Improvisation
#11	Snare
#12	Toot snare
#13	Rim shot
#14	Bass drum
#15	High-hat
#16	Drop Jaw
#17	Jaw Toot
#18	Dead note
#19	Zipper
#20	Tongue pop & Tongue pop toot
#21	Tongue click
#22	Lip pop and Lip smack

#23	Growl
#24	Blowing air
#25	Flute
#26	Wail
#27	Shhhoh technique
#28	“Humming” in Traditional didgeridoo playing
#29	Dith-Dhu Dhirrl Dhirrl Improv, Pt. 1
#30	Example of pitched barks
#31	Breath – Original Composition
#32	Breath – Original Composition (Didgeridoo Only)

*Please Note: If no source is indicated for an audio sample or referenced in the Discography, it is performed by the author.

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APPENDIX A

INTERVIEW WITH DAVID HUDSON

CAIRNS, AUSTRALIA

Recorded on DECEMBER 29, 2017

*Interview transcribed on January 10, 2018

Marko: In your experience, what are the main educational techniques that are used to teach the didgeridoo in Aboriginal communities? How are these techniques taught and/or transmitted from generation to generation?

David: Well the didgeridoo, or yigi yigi, that's how we say didgeridoo. Didgeridoo is actually an English word, so the traditional words can be yigi yigi and yidaki. The didgeridoo is one of the world's oldest instruments that's been played for countless generations.

Marko: Is there a number or age on the didgeridoo?

David: There's rock art of a figure playing a stick that comes out of his mouth, which is obviously a yidaki that's been carbon-dated to at least 24 000 years ago. The didgeridoo is a very simplistic instrument, as you know. It doesn't have a reed; it doesn't have finger holes, so it's the length that determines your key. Going back in the traditional days, my folks didn't understand the difference between a C note, an E note or an A note. etc. However, if you did a Brolga dance, which is a large crane, they're a graceful bird so you would play a longer didgeridoo which emits a more graceful sound. If you had to represent a small willie wagtail, which is a small little black and white bird which never sits still and is always moving, you'd play a short didgeridoo, which is more of a high pitch sound. But these days, we're a lot more educated, and we can cut our didgeridoos to a specific key, which is great.

Marko: The main topic I'm looking at within the thesis is the representation of didgeridoo in sheet music, but traditionally and historically, the didgeridoo is taught through oral tradition. What are some techniques that a teacher would use to teach the didgeridoo so that it would be

carried over and remembered for so many thousands of years?

David: When I was taught to play the didgeridoo at a very young age, I was taught to play the traditional way. It was more monotone, so you'd play your specific rhythms and the didgeridoo pieces wouldn't go more than three minutes because you'd be accompanying dances that would last about a minute, and then stop, and start again and so there would be a lot of stopping and starting. You would also have your bilmas, which are your tap sticks, or your wungal, which are your clapsticks, which would accompany your yidaki. So, to play a traditional sound, I was taught to play this way: (Hudson audio track – 1). Then you would add your finger to sound up here *shows general region near the upper half of the didgeridoo*, if you're playing by yourself (Hudson audio track – 2). But in a dance situation, you would have your song man, who is singing vocals, and your bilma person as well as your dancers. So, because there's a lot of noise happening, the didgeridoo player would tap his finger on the didgeridoo to help keep himself in time.

Marko: Is it a rhythm that you would learn? Do you have a collection of rhythms that you would use for certain dances, and certain contexts and that would be passed down and remembered over and over again through generations?

David: Yup, exactly. It's no different to language or art. You're taught to do squiggly lines or circles which represent water or a meeting place; you'd do a boomerang which represents a male and a long stick which represents a female. Then, you may have little dots that represent footprints that are going to the next water hole to sleep there, and squiggly lines could represent the night sky; everything has a story to it.

Marko: In regards to traditional didgeridoo music, it seems that Aboriginal languages are really tied into didgeridoo playing, as if they're speaking the language or syllables into the didgeridoo. What do you think the connection is between language and playing?

David: The connection is what you see is what you play on your didgeridoo. It tells a story. So for instance, if it's a story about a dingo, the dancers would portray the dingo through dance to the audience. The most important thing that's involved here is the didgeridoo man and the tap-stick man; they're the ones that keep it together. (Hudson audio track – 3)

Marko: When I listen to, for example what you just played, versus a contemporary player, it seems like the sound in traditional playing is much more focused and directed to the lips, whereas a contemporary player would be more focused on producing rhythms through their cheeks.

David: That depends on where you come from. If you're from Arnhem Land, you play more tongue-y and directed to the didgeridoo: (Hudson audio track – 4). If you come from my region: (Hudson audio track – 5)

Marko: It kind of goes back to our past conversation where there's still so many communities outside of Arnhem Land that are also traditional didgeridoo playing communities but have a completely different style.

David: My cousins and elders that come from the communities can't play like this: (Hudson audio track – 6)

Marko: What are some differences between those two examples which you just played?

David: (Hudson audio track – 7) Whereas traditional playing is very monotone, so if you're hearing it for the first time you may think, "Okay I've heard it, what else can you do with it?" It's only when I start doing different things and incorporating modern instruments with it, that takes the didgeridoo to a new realm. That's why I've always said the didgeridoo is the ancient voice of the future.

Marko: So, in terms of traditional playing, the didgeridoo wouldn't tell a large and detailed story like we heard from your contemporary playing example?

David: Well, one example is you could tell your story by representing the brolga through your didgeridoo: (Hudson audio track – 8).

Marko: The didgeridoo, from what I understand, is simply just an accompaniment to the singer. So, there wouldn't necessarily be an opportunity to tell a story which would involve boomerangs and different animals all in one, like we heard in your contemporary playing example.

David: No there wouldn't be, because it's your dancers that are doing the story-telling for you. In terms of the brolga, the dancers would show you he's walking in the water, he's now crouching down to catch the fish, and he lifts his head up and now he's flying, for example.

Marko: Would the brolga be an example of a Creation being?

David: All of these creatures come from Dreaming stories. For example, how the kangaroo got his tail, why the emu can't fly. You're telling these stories such as when the brolga went out on the plains and saw his mate dancing, so he thought he could dance better so he started doing some more colourful movements. This is why brolgas show off to their girlfriends.

Marko: How often is the idea of Creation beings implemented through the didgeridoo and dances that are played?

David: Traditionally, it's all the time. Even though it's 2017, it's still played the same way as it always has. If I go: (Hudson audio track – 9). There're heaps of traditional brolga stories, and now in 2017 we might incorporate a brolga story that features a kookaburra to change it up a bit.

Marko: Are these stories mutually intelligible between all northern Aboriginal communities?

David: Absolutely not. We're all from different areas, so it's just like our languages; we don't all speak the same language. In the Cairns region, in a radius of 80km, there's 8 different languages here.

Marko: Does that change the didgeridoo playing style within the region as well?

David: Yes it would, because not everyone plays the didgeridoo. In this region here, they don't play the didgeridoo in Cairns. I play the didgeridoo in Cairns and for those that don't know me they might say, "How come that David Hudson plays the didgeridoo in Cairns? That's not traditional to Cairns." So they might then ask, "Well is he from Cairns? Well, we better check on that.", and they'd realize David Hudson comes from the west, where the didgeridoo is prevalent and played more. If they play the didgeridoo in Cairns now, it's only because we've shared it and they like it.

Marko: Would you say even bordering communities would have different didgeridoo styles, due to their different languages?

David: Yup, absolutely. If you're a didgeridoo player in Cairns, they don't play it here, so they've only learnt the way to play it from, perhaps, me, and how I've learnt to play it. So they've learnt the Ewamian style, or David Hudson style.

Marko: Going back to the topic of language, Djalu (Gurruwiwi) has a CD which I've listened to, where he teaches the didgeridoo and while he's teaching, he puts a very large emphasis on teaching these didgeridoo techniques through syllables such as, 'dith-dhu dhirrl dhirrl'.

David: Yeah, he'd go: (Hudson audio track – 10).

Marko: How would someone in your community teach the didgeridoo, similarly to how Djalu does?

David: They'd go, 'doo waka doo waka doo doo doo waka doo doo', for example: (Hudson audio track – 11). So if you would write it in notation, that's how you would do it: (Hudson audio track – 12).

Marko: There's got to be hundreds of variations of that depending on where you're from.

David: Sure. Different in the Kimberleys, Darwin, Beswick. Mornington Island has their own style. I'm very keen on hearing didgeridoo players from different communities. Also, the bilma's are very different as well. The tap sticks from where I'm from, are higher pitched, whereas if you come from Arnhem Land, the sticks are much longer and lower in sound. This is because of the environment and the timbers that are available. Near Cairns, and west of Cairns, we have a lot of ironwood. Ironwood makes digging sticks and are very hard (Hudson audio track – 13). They're different woods to the desert, because they don't have hardwoods like we do.

The Kimberleys may have hardwoods, but with these here, you would make your woomera's (spear-throwing device), your spears, digging sticks, fighting sticks, shields – it's heavy! That's why they have a crisp sound, and I'm hardly hitting them (Hudson audio track – 14).

Marko: Just like how didgeridoo players historically use memory for the rhythms used in ceremonies, is that also the case with tap stick players as well? How are they used together?

David: Yes. You'd have your bilma, and you'd have your boomerang, tap at the same time. See, the people in Arnhem Land don't play boomerangs. So Djalu, for example, has probably never played the boomerang with the didgeridoo before.

Marko: Going back to another past conversation and what is interesting about all of this is that we have a very isolated Aboriginal community, in Arnhem Land, which is almost solely represented internationally as traditional Australian Aboriginal music.

David: That's the thing about it though, people just start stereotyping and think all Aboriginal people play the didgeridoo – not true. They think that we all throw boomerangs – not true. They think we all speak the same language – not true.

Marko: I think the language topic is a huge deal, in terms of the music and how the language ties into the didgeridoo. So, someone plays the tap sticks and someone else plays the clap sticks, at the same time? That means there's a 4-person ensemble. (Song man, didgeridoo, tap sticks, clap sticks).

David: Yup! (Hudson audio track – 15)

Marko: One thing that I'm curious about is how traditional singing is taught. More than rhythm, you also need to memorize lyrics and tell Dreaming stories. I'm assuming there's hundreds, if not thousands, of these stories.

David: You'd tell a story of brolga, and how he went out to the plains, and jumped in the air. So you're portraying that story: (Hudson audio track – 16).

Marko: Is that just purely based off memory? Was there ever a way to write down these stories?

David: It's just a passed down language, again, just orally. It's a man that's been singing for years, so you learn from him, and then you pass it down to the next person.

Marko: Like you said, it's like language, where these stories just become part of you and are simply memorized and remembered over time.

David: Yup!

Marko: The main reason that I'm here is to talk about representing the didgeridoo within sheet music and written notation. What is your honest opinion on that? On taking an incredibly long history of oral traditional, and now having it written down for others.

David: I think it's important because if I don't pass it down to the next person, then it's lost there. So basically, if yourself has come along and notated it, it's been archived - finally! It's like rock art -- rock art is very different now. The last time people did traditional rock art was in the late 1800s. Nobody paints rock art anymore. You can't because it would be totally inappropriate for me to go and touch up rock art that's 100 years old. If you were to do it now, it's no longer considered traditional rock art, it's just considered modern art.

Marko: To play devil's advocate, what would you say if someone said it's unnecessary for written notation, as these rhythms have lasted for thousands of years, why can't they exist for thousands of more years?

David: Why? Because we live in the modern world these days. My people, they would live a traditional lifestyle, so they would go and eat food off the land. These days, like all people in the world, why go out and hunt when I can just go down to the butcher's and buy some meat? Go out and buy some bread, instead of collecting the grains, crushing it up, and eating it the traditional way. Why bother going out fishing for barramundi when I can just go down to the fish shop and buy crumbed fish? Do you want it crumbed? No, I want it battered. So, you get spoiled.

Marko: So, this change within the culture is slowly visibly happening.

David: It has changed, because unless you're taught to speak our traditional language, it's lost. That has a lot to do with when Aboriginal people were taken from their homeland and taken to a reserve, very similar to Canada, America - doesn't matter where you are in the world. If you were forcibly removed from your traditional homelands and taken elsewhere, of course you're going to lose your culture, and we are no different. That's why it's important, from my perspective, for people like yourself to notate the didgeridoo, so that way it's archived.

Marko: In the past, we had conversations about the notation I'm currently developing, and how it's mostly for musicians, composers, musicologists, etc., who are able to read written notation at a high degree. However, you mentioned that most traditional didgeridoo players do not know how to read music, and thus, if presented with notation such as this would not understand it.

David: Yes, that's exactly right. I'm a professional didgeridoo player, so if you notated it for someone like me, then I would understand it. But if you were to give it to someone like Djal, they may not.

Marko: My main focus coming into the project was coming from a compositional background. As a composer and didgeridoo player, if someone were to ask me, "How do I notate the didgeridoo? I heard you play it and I want to use it in a future piece of mine.", I wouldn't have an answer for them. You could put a simple one-line percussion staff and write in a rhythm, but the didgeridoo is a lot more than that.

David: Yeah, but for someone like Yanni to come along and tell me, "David, I want you to play...": (Hudson audio track 17), for *Niki Nana*, I'm going like "Are you kidding me? Let me show you what I can do on the didgeridoo." because he's never heard the didgeridoo in his life. He's hearing it for the first time going like, "Wow, I like that sound!" I would say, "Yanni, maybe you'd like some of the calls": (Hudson audio track – 18).

Marko: On the topic of Yanni, he would simply just create a rhythm, and then present that to you?

David: He'd create a rhythm like *Niki Nana*, which was around before I ever joined, so I knew it. But for example, I would ask him, "How many bars?" He goes "Wow, you understand bars, David?" I'd go "Yeah, I understand bars." He'd say "Well, the intro is 16 bars." "Okay I understand 16 bars." He goes "Oh okay, why don't you give me 8 bars of just straight didgeridoo, and then after 8 bars, give me some colour!" So if that's what he wants, that's what I give him.

Marko: One of my personal favourite Yanni pieces is, *Rainmaker*. In that case, that was a new song that was made during your time with Yanni. Did you provide him with a rhythm? How do you collaborate with someone like him?

David: Well, he would play something on the keyboards. I would listen to what he's playing, and then we experiment.

Marko: So, you jam, basically.

David: We jam first, that's right.

Marko: Is that a common technique used with other composers you've collaborated with? Are there any different ones you've come across?

David: Well, it's a song called *Solid Rock*, it starts off in A minor. (Hudson audio track – 19).

Marko: In terms of people who hire you to play in their song, whether it's a rock song or maybe even more interestingly, an orchestral piece, is it similar to Yanni where you jam, or do they come to you before and give you some rhythms? Has there ever been a time where someone has given you something that's written down for you to read?

David: No, no one writes music for the didgeridoo.

Marko: You've never even been presented with a written rhythm?

David: Nope. They'll say to me, "David, I got this song. See if you like it and give me your thoughts." "What key is it in?", is always my first question. Eventually it would lead to them

saying, "Oh! I didn't know that didgeridoos came in different keys!" So, the knowledge is very basic.

Marko: That's a big reason why my idea initially came to me in the fact that not many people know about this instrument. They just think, "Oh, it's just a drone."

David: Oh yeah, that's typical. It always happens when I go out to a gig, and someone may ask me, "Hey David, did you bring your didgeridoo? We've got a song we'd love for you to play on." So if the song is in B flat, for example, I'd say "I can't help you". I've only got my didge in E.", and they say "Oh, that's not going to work?" You know what I mean? (laughter).

Marko: In terms of the didgeridoo within orchestral contexts, is there a certain method that the didgeridoo has been used as? For example, have you used it more so as a drone in the background? Have you used it more so as a featured instrument?

David: Before, I'm going back 40 years, the didgeridoo was treated only as a background sound. I mean, many people have recorded with the didgeridoo from Madonna, Kate Bush, Yanni, etc., but the didgeridoo is not a featured instrument. When I was with Yanni, you could argue it was a featured instrument, but it's very different to a violin or a keyboard because you're actually playing structured sounds. If I presented Yanni with 7 didgeridoos in seven different keys, he'd be like "Oh yeah! That's funky let's use something with that."

Marko: Would you say that the didgeridoo, in your experience, has been used more so as a texture?

David: Yeah, it's been used as a texture. It wasn't until the 80s that the didgeridoo was incorporated into rock n' roll.

Marko: Personally, I've heard that lately, whenever a didgeridoo is in a popular song or orchestral piece that they try and put an emphasis on the extended techniques.

David: Yeah, because people these days, especially throughout Europe in countries like Italy, Germany and Austria, don't play it the way I was taught to play it. They now play it in a very hip-hop style, and so when I hear it I go, "I don't like that sound.", that's a European style.

Marko: Does that offend you in any way? Or is it simply just you're not interested in that particular style?

David: I'm not interested in it. It's a very underground rave style. They've been playing it to very bumping electronic music. They're not playing it how the instrument should be played. They've taken it to a new modern realm, and if that's how they want to play it, all right fine. But don't expect me to sit there and go, "Wow, that was great!" (laughter).

Marko: So you're totally open to people using the didgeridoo within whatever context, but obviously it doesn't mean you have to like it.

David: Yeah, absolutely. They also have to understand that it's an instrument that we are happy for people to learn it and play it, and so on. The important thing is that they give back the knowledge that the didgeridoo comes from Australia.

Marko: I think there's some people within the didgeridoo community that have this belief which is opposite to what you just said. Many Australian Aboriginal didgeridoo players only think the didgeridoo should be played within traditional contexts.

David: What upsets me is when you got some German person, for example, that's taken the didgeridoo and instead of supporting the Aboriginal cause, they take the didgeridoo and make a cast of it that's made of fibreglass or hemp. That's when it becomes distasteful.

Marko: Why is that?

David: If you want to play the didgeridoo, play the authentic instrument. Don't make it out of fibreglass or plastic PVC pipe. Support the Aboriginal cause from Australia. Everybody knows the didgeridoo is made from a tree that's been naturally eaten out by termites. But because young Wolfgang who lives in Frankfurt can't access a didgeridoo from Australia, or he can and he's too lousy to pay \$300, "Oh I'm going to go and have this replicated and make it out of fibreglass, and I'm going to start selling these fibreglass tubes." It's not a didgeridoo anymore, it's a didgeridont. That's where it becomes distasteful.

Marko: Going back to notation, we spoke about a 'didge-friendly- notation. You mentioned how it would be interesting to make a notation with certain symbols that may represent certain Creation beings or animals for a traditional player to understand.

David: That's exactly how Yanni works. Yanni is not your traditionalist classical composer, where he does simplistic notation. He has his own style of writing music that we all understand. It's quite simple. He would use symbols, and that's why I said to you at the time, for example, the

symbol of a claw could represent the claw of the kookaburra. So if you put that symbol on the paper and maybe write x6 next to it, then I would understand that, easy. Simplistic.

Marko: It goes back to a debate that I've been having with myself during this whole process, how specific should or can I possibly be?

David: I think you have to keep it as simplistic as possible because nobody has ever done this. Somebody may have, but I've never come across anyone.

Marko: There are so many sounds that you can possibly produce and so many little techniques that change the sound.

David: You've got to keep it simple because if I'm going to the school to teach 30 didgeridoo players, it's got to be done in that fashion where I can go "Okay kids, everyone grab your doo. When you see 5 hands, you wak wak wak wak wak." (Hudson audio track – 20). That means do that sound. So, in that case, a hand could represent the 'wak' technique. We could do that. I think for you, you have to sit down with someone like myself and we're re-writing history here, so you're going, hand is 'wak wak wak wak wak', then a curly line, which could mean one bar, and so two of those equals two bars.

Marko: It would be two completely different notations as the 'didge-friendly' notation would definitely be much better suited for beginners, whereas the notation that I've started to develop is more so for pros, or composers to have a way to write down the rhythms and techniques they desire.

David: Yeah, but sometimes composers have not heard what the didgeridoo can do until I've blown it, and they go, "Wow, I didn't know you could do that on the didgeridoo." I think the way to deal with this, is to make a CD that's got liner notes of your written notation, along with audio examples of those techniques. "Ok class, we're going to play 'wak wak wak wak wak', follow these notations.", so it's easy. I could follow that no problem, and so could my young cousin.

Marko: There's also a debate with how much do you want to tie the didgeridoo player to these techniques and rhythms, because to a point, a lot of it, historically, has been improvised.

David: Yes, but at some point, like with Yanni, he gave me the license to do what I wanted to do, as long as I keep to the bars of the piece. If I were to play two minutes extra...

Marko: When I'm transcribing using my notation, that music has already been created, and I'm simply putting that music to paper. In those cases, I'm thinking I have to be as specific as possible because this has already been performed and recorded. There's a difference between writing it out before someone has played it and seeing how the player interprets the notation, versus if I were to notate one of your solo didgeridoo songs because the techniques you used have already been recorded and already used. Therefore, I have to be as specific as I can within the notation.

David: That's one way of doing it, but if you want to keep it 'didge-friendly' for the beginners, you have to use simplistic symbols that they're familiar with. It's easier for me to send you different symbols, and you interpret it your way.

Marko: Especially if you're talking about the 'didge-friendly' notation, if you already implement something that everyone is going to be interested or familiar with, such as these symbols, then that's already half the battle.

David: And half the battle is going to be easy because if you're doing *Steel Country*, for example, everyone knows that rhythm: (Hudson audio track – 21). So if you wanted to play *Steel Country*, you could hear it through the sound bite, and then you'd have it written down there with your notation. You could even add the piano underneath as well for reference. That would be easy to do. That would be a whole new ball game, if I had a CD that said, 'The Best of David Hudson: Notated.', so people could actually play it and follow along through notation. That's just a whole new marketing point-of-view. That's the way to do because people try and copy *Steel Country* rhythm, and they'd go, "There's something you're doing there, that I can't get!", and that's because I'm doing a double breath. So they could see me do it visually and guess, or in this case, if it's written down, then they would know exactly how to play it. You could use symbols that are regularly painted on didgeridoos, as well. We all know these symbols because we see it on the rock art, so we know the stories associated with them as well.

Marko: And these symbols could represent any didgeridoo technique.

David: I can send you 50 different symbols, for example, and give you the artistic license to take those symbols and make it into something. But I think they could all have meaning to it, depending on what they represent, traditionally. For example, in rock art, a figure upside down means that person has died. Maybe you can find a technique in which that symbol could represent.

Marko: You mentioned to me earlier that someone from Australia would probably never attempt to create detailed didgeridoo notation. What do you mean by that?

David: Everyone considers the guitar and the trumpet an instrument. But to them, this (the didgeridoo), is just a stick.

Marko: That's another underlying topic within my thesis, is that I'm almost calling for instrument equality. Why can't this be notated?

David: It can be notated! People get flustered because they would think, for example, "Oh, it's just a didge cut in E, what can you do with it?" But they forget that you're looking beyond that. You're looking inside this like a kaleidoscope. There's a lot more than all those little twangy sounds and so on. That all comes into being from the termites, but they don't look at it that way. They don't think that way.

Marko: I think that's just due to a lack of education on the instrument.

David: Yeah, absolutely.

Marko: Within my paper, I am arguing that even though there are no sound holes on the didgeridoo, it doesn't mean it can't be notated like an instrument that does. It doesn't mean that there isn't more to it than one note. So with that said, I think you would agree that a didgeridoo notation, is in fact, attainable.

David: I'm all for it! I'm a traditionalist; however, I don't just play the didgeridoo – I'm a multi-instrumentalist. So, to advance the didgeridoo by notating it – sure! Let's do it

David Hudson Interview Audio Track

Hudson Audio #1	Didgeridoo Traditional playing
Hudson Audio #2	Tapping on the didgeridoo
Hudson Audio #3	Didgeridoo and Tap sticks
Hudson Audio #4	Arnhem Land Didgeridoo style
Hudson Audio #5	Ewamian Didgeridoo style
Hudson Audio #6	Traditional vs. Contemporary didgeridoo
Hudson Audio #7	Contemporary Didgeridoo style
Hudson Audio #8	Brolga #1
Hudson Audio #9	Brolga #2
Hudson Audio #10	Djalu Gurruwiwi
Hudson Audio #11	“doo waka” #1
Hudson Audio #12	“doo waka” #2
Hudson Audio #13	Ironwood Tap sticks #1
Hudson Audio #14	Ironwood Tap sticks #2
Hudson Audio #15	Clap sticks
Hudson Audio #16	Didgeridoo Dreaming story
Hudson Audio #17	Yanni’s request to David Hudson
Hudson Audio #18	<i>Niki Nana</i>
Hudson Audio #19	<i>Solid Rock</i>
Hudson Audio #20	“Wak wak”
Hudson Audio #21	<i>Steel Country</i>