

# Tabla Without Borders:

Toward a Contemporary Model for Tabla Performance and Composition

## Volume I: Written Component

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Audio recordings, scores and written component submitted in fulfilment of the requirements for the degree: Doctor of Philosophy (PhD) in Music Performance

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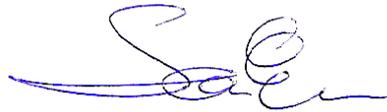
## ABSTRACT

This practice-led research examines the potential for creating new, contemporary repertoire for the tabla in small ensemble settings. The aim of the research is to expand the musical roles, elements, and conventions that are performed on the tabla in the context of contemporary intercultural music. In attempting to broaden the instrument's lexicon, this research asks the following questions: what role can, and does the tabla play, in contemporary music that does not adhere to the musical conventions for which the current repertoire is devised? Which musical elements and conventions, that are not accounted for in the current repertoire, may be brought to and performed on the tabla in such music? The music investigated in this research complements, adds to, differs from, and expands on the vast musical wealth of traditional tabla music. It further extends the existing repertoire of the tabla into a contemporary setting that employs musical elements from diverse origins. In doing so, a set of new compositions has been created to exemplify the alternative methods applied in developing new music for the tabla. These are documented in recording and notation to demonstrate the practical application of the theoretical musical concepts enunciated in the written component of the research. The creation of this new repertoire is both a response to today's intercultural musical environment, as it attempts to answer questions regarding the function and role of the instrument in non-traditional settings, and, at the same time, an attempt to forge new musical realities for the tabla outside the traditional framework. The new repertoire aims to provide an alternative performative resource for tabla players engaged in contemporary music as well as an educational resource for tabla performance in Western educational institutions. The written component of this research provides an articulation of the musical components, compositional elements, and performance techniques that have been applied in creating this new repertoire. It contrasts the new musical approaches in this research with the traditional repertoire, and importantly, argues that this new repertoire complements the traditional repertoire. As academic writing in the field of tabla has thus far focused on the traditional aspects of the music and culture surrounding the instrument, the written component of this research fills a gap in the literature on the contemporary performance practices of the instrument. The performance component of the research concludes that a multiple-pitch tabla configuration can contribute significant new musical functionality to the melodic, harmonic and rhythmic components of contemporary intercultural music.

## STATEMENT OF ORIGINALITY

This thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Signature:

A handwritten signature in blue ink, appearing to read 'Sae', with a long horizontal flourish extending to the left.

Print Name: Sam Evans

Date: 5/5/2018

## COPYRIGHT NOTICE

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I certify that I have made all reasonable efforts to secure copyright permissions for third-party content included in this thesis and have not knowingly added copyright content to my work without the owner's permission.

## ACKNOWLEDGMENTS

This research would not have been possible without the support of the Australian Postgraduate Award and the Sir James McNeill Postgraduate Research Scholarship. In addition, the album *Blueprint* was supported by Arts Victoria with a Contemporary and Live Music Development grant.

I would like to express my gratitude to my primary supervisor Dr. Stuart Grant for his expertise and knowledge in the fields of writing and practice-led research. Also to my associate supervisors Dr. Thomas Reiner for his compositional and scoring expertise and Dr. Andy Sugg for his music performance skills and knowledge. I would also like to thank my initial supervisor Prof. Tony Gould for his positivity and support of both this project and performing musicians in the academy.

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In creating the music for this project, I would like to acknowledge the exceptional creative input and musical contributions of the musicians involved in *The Tabla Project*: Reza Kashi - *tar* and *setar*, Anne Norman - shakuhachi, Ben Roberson – double bass, Stephen Magnusson - guitar, Luke Howard - piano and rhodes, Ria Soemardjo - voice, Helen Mountfort – cello, Damian Evans – double bass and guitar, Robert Burke – saxophone and clarinet, Pandit Debasis Chakroborty – slide guitar.

I would like to offer special thanks and acknowledgment to Helen Mountfort – cello and Ria Soemardjo – voice, in creating the album *Blueprint* and providing the musical context that assisted in developing many of the musical ideas that have been realised in this project. In addition, I would like to thank and acknowledge Lachlan Carrick for his impeccable skills during the mixing and mastering of both albums and Abhishek Samaria for the video-graphic documentation of the recording sessions.

I would like to acknowledge and thank Daniel Calabro for his inspirational approach to composition and Lisa Young for the collaborative work and conversations we have engaged in during both our PhD writing times. Importantly, I would like to acknowledge the hundreds of students who have studied and performed with me at the Melbourne Tabla School for assisting to create a context for the tabla in Melbourne.

To my brother Damien Evans for his feedback and insights during the research process as well as playing bass on Sans Frontières and guitar on Five Trains.

## **DEDICATION**

This work is dedicated to my wife Anna, who's endless love and support provides the breath in my life, and to our daughter Jojo, who was born during the making of this project, in the hope of inspiring the courage to promote change for the better.

## ORTHOGRAPHY

Specific terms related to Indian music are included in this text, most commonly derived from the Hindi language. Transliteration of these terms is according to The Oxford Hindi-English Dictionary (McGregor: 1993) and are italicised throughout. English-style plurals have been employed where required and diacritical marks are not used. Indian musical terms that have been included in the English language, as indicated by their presence in the Oxford English Dictionary, such as *tabla*, *raga*, *tala* and *gharana*, have not been italicised. In addition, the word *bayan* has not been italicised as it is one of the main drums in the *tabla* set that is central to the work and often appears in conjunction with the word *tabla*. The spellings for the mnemonic syllables that define the notes performed on the *tabla*, (*tabla bols*) are defined in the notation indications at the beginning of the scores document of this portfolio.

## KEY TERMS

*Tabla bol* or the pluralised version *tabla bols*, may refer to either a single note performed on the *tabla*, such as *na*, or to standardised groups notes defined by fingering and phrasing conventions such as *terekete*. The latter is the more common usage of the term both in this written document and generally.

*Musical roles*, in this document refers to the particular musical role performed on an instrument in a given musical setting, such as melodic or rhythmic role. *Musical elements*, here refers to the separate components through which music is understood and analysed in Western musicology for example: harmony, melody, rhythm, timbre and dynamics. *Musical parameters* in this document refers to musical roles and musical elements.

The title of one of the CDs in this portfolio is *Blueprint*. Track 1 of this album is also named *Blueprint*. To avoid confusion, the track is referred to track 1, *Blueprint* and all other references are to the album.

## AUDIO AND VIDEO MATERIALS

### Audio Materials Provided on CD, USB Drive and Online Links:

#### *The Tabla Project* by Sam Evans

Performed by: Sam Evans – tabla, Reza Kashi – *tar* and *setar*, Anne Norman – shakuhachi, Ben Roberson – double bass, Stephen Magnusson - guitar, Luke Howard – piano and rhodes, Ria Soemardjo – voice, Helen Mountfort – cello, Damian Evans – double bass and guitar, Robert Burke – saxophone and clarinet, Pandit Debasis Chakroborty – slide guitar.

Track 1. Anushka (5:20)

<https://youtu.be/YBYc-mMIEu0>

Track 2. Tremor (5:55)

<https://youtu.be/LGHiYkmE3Os>

Track 3. Shifter (6:00)

<https://youtu.be/Oaje4opq3Es>

Track 4. The Valley of Vung (5:53)

<https://youtu.be/lxHwM0PNd7k>

Track 5. Sans Frontières (5:52)

<https://youtu.be/Z6xKomJDGsw>

Track 6. Five Trains (3:17)

<https://youtu.be/AmcaaDLY2q0>

Track 7. In a Milky Way (7:16)

<https://youtu.be/SbvwclyEOw>

Track 8. Interlude (1:47)

<https://youtu.be/9x-HMyPGI3s>

Track 9. Ladu (4:03)

<https://youtu.be/okTG5SN1m-U>

Track 10. The Waiter (4:56)

[https://youtu.be/ytKkS24\\_7vI](https://youtu.be/ytKkS24_7vI)

Track 11. Parallel Paths (5:23)

<https://youtu.be/fPpgWPgSU5k>

Track 12. While You Were Sleeping (3:15)

<https://youtu.be/5kA3Fzms2bI>

Track 13. Into the Unknown (4:48)

<https://youtu.be/J6TBcpiV6r8>

### ***Blueprint* by Fine Blue Thread**

Performed by: Sam Evans – tabla, Helen Mountfort – cello, Ria Soemardo – voice.

Track 1. Blueprint (4:13)

<https://youtu.be/ICY-bY3Dxjo>

Track 2. Inside Out (3:40)

<https://youtu.be/6KMQhsaKAz0>

Track 3. The Point (5:42)

<https://youtu.be/agUO7RvGBxE>

Track 4. Estuaries (7:31)

<https://youtu.be/VbRAiET8hKg>

Track 5. The World of Birds (3:39)

[https://youtu.be/\\_U71eavB0M](https://youtu.be/_U71eavB0M)

Track 6. 100 Days (5:05)

<https://youtu.be/ZS358OCEn9w>

Track 7. Molly's Dream (3:31)

<https://youtu.be/eCQ3oNvaz60>

Track 8. The Fall (5:19)

<https://youtu.be/2CWxctenm10>

Track 9. Sweetwater (8:52)

<https://youtu.be/hLpgnm5Tshw>

### ***Jojo* by The Slide Project**

Performed by: Sam Evans – tabla, Stephen Magnusson Guitar, Pandit Debasis Chakroborty – slide guitar. This track is from the album *Trio*, by The Slide Project.

Track 1. Jojo (7:13)

<https://youtu.be/1q3y9ih49d8>

## Video Materials Provided on USB Drive and Online Links

Concert footage of the track Fine Blue Thread. Performed by: Sam Evans – tabla, Helen Mountfort – cello, Ria Soemardjo – voice.

<https://youtu.be/ObnFBhFDLTY>

Studio footage of the track Sans Frontières. Performed by: Sam Evans – tabla, Reza Kashi – *tar* and *setar*, Ben Roberson and Damian Evans – double bass, Stephen Magnusson – guitar, and Pandit Debasis Chakroborty – slide guitar.

<https://youtu.be/DFxmcXmQVFI>

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## FOLIO CONTENT

This research folio contains the following documentation:

- Two CD recordings: *The Tabla Project* and *Blueprint*
- Musical Scores of this recorded music
- A written document

The recorded music is supplied in physical CD format, digital music files on the supplied USB drive and online as clickable links throughout the written component for ease of reference. The intent of the recordings is best heard via the CDs or digital music files on the UBB drive via good quality headphones or speakers. Please note the clickable links are unavoidably in the lower resolution mp3 format.

The musical scores are provided in a separate document so the reader may have both the written component and scores accessible at the same time.

The written document is intended to be read in conjunction with the reader's engagement with the recorded music contained within this research folio.

## **PART I – CONTEXTUALISING THE FIELD**

## CHAPTER ONE: Introduction to the Research

### 1.1 Introduction

This research project examines the potential for creating new, contemporary repertoire for the tabla in small ensemble settings. It is a practice-led research project that focuses on expanding the musical elements and musical conventions that are performed on the tabla in the context of contemporary world music. In attempting to broaden the instrument's lexicon, this research asks the following questions: what role can, and does the tabla play, in contemporary music that does not adhere to the musical conventions for which the current repertoire is devised? Which musical elements and conventions, that are not accounted for in the current repertoire, may be brought to and performed on the tabla in such music?

The music investigated in this research complements, adds to, differs from, and expands on the vast musical wealth of traditional tabla music. It further extends the existing repertoire of the tabla into a contemporary musical setting that employs musical elements from diverse origins. The creation of this new repertoire is both a response to the current musical environment for international tabla players as well as an exploration into new musical territories for the instrument. As such, it is a response to today's mixed-genre musical landscape as it attempts to answer questions regarding the function and role of the instrument in non-traditional settings. At the same time, it attempts to forge new musical realities for the tabla outside the traditional framework.

In today's global musical landscape, as the international popularity of the tabla continues to extend further beyond its original cultural domain, the performative vocabulary of the tabla is accordingly beginning to extend beyond its traditional framework. The presence of tabla in non-Indian musics such as world music and jazz over much of the latter half of the twentieth century warrants an examination and documentation of contemporary tabla in performance and composition. To date, there is almost no written documentation or notation of this music and there are no models in place that outline new musical elements and roles that may be performed on the instrument in this setting.

While there is little literature that considers the contemporary intercultural performance practice of the tabla, there is a substantial body of recorded and performed music in this field

over the last sixty years. The full account of the ways in which tabla is performed in contemporary intercultural music would form the subject material for many potential PhDs. While research of this nature would certainly be a valuable asset to the field, it is not the subject of the research presented here. Instead, this thesis outlines the key elements of this practice, important players, techniques and, approaches in providing an overview of the field. The aim of this research is to develop a system of contemporary intercultural tabla performance that outlines some of the many possible applications for the way in which the tabla part may relate to melodic, rhythmic and harmonic elements of contemporary intercultural music. The work presented here has been developed in a systematic knowing way as a piece of practice-led research.

Originating in India, the tabla is heir to a percussion tradition and lineage that has consistently evolved through the cultures and drums of South Asia over thousands of years. As the influence of the instrument begins to extend beyond the sub-continent and into an international landscape, its own repertoire is in turn being influenced and broadened by the musical elements with which it interacts today. This progression of the repertoire into what we may currently term a ‘non-traditional’ aspect of the repertoire, may in fact be the next step in this sequence of constant evolution for the instrument.

The repertoire for the tabla is today expanding and evolving by virtue of the instrument’s popularity, just as other instruments, through their own popularity, have expanded their repertoire to include non-traditional music. For example, the jazz and rock repertoires that are now played on what was originally the Spanish guitar, and the Indian repertoire that is now performed on the violin and slide guitar. In turn, it is my intention that the expanded repertoire presented in this research serves to enhance the overall growing popularity of the instrument. In my professional experience, this process of extending the repertoire of the instrument in turn leads to an increased interest in the traditional repertoire; many of my students studying traditional repertoire at the Melbourne Tabla School<sup>1</sup> originally began their

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<sup>1</sup> Melbourne Tabla School was established in 2007 by the author of this work. It functions as a traditional training centre for Indian tabla with two venues, multiple teaching staff, regular lessons, workshops and programs of Indian music in Melbourne. Further information is available on the website: [www.MelbourneTablaSchool.com](http://www.MelbourneTablaSchool.com)

study through an interest in contemporary tabla performance. In this way, the development of a contemporary repertoire for the instrument may serve to generate further recognition of the traditional repertoire as well.

As a Western tabla player, educator, and ambassador for the instrument in the West over the past two decades, the need for additional repertoire has been evident to me for many years. Investigating a model for new work that explores the extremities of the musical capabilities on the instrument and, negotiates musical elements and roles which are not present in Indian music, such as harmony, is critical for the growth in influence of the instrument in the West. This practice-led research begins the process of identifying, theorising, and documenting new performative approaches to the instrument in contemporary music. The research conducted here is a new contribution to Australia's contemporary, intercultural musical heritage, and to the body of knowledge on the subjects of tabla and world music.

I argue here, that given the right circumstances, the tabla has the potential to become India's internationalised instrument, if it is not already. Nuttall notes that 'Increasingly tabla is becoming an international phenomenon' (Nuttall: 2011:17). This potential is due to the fact that the musical possibilities for the instrument beyond the traditional music are immense and the limitations few. Due to its construction and performance techniques, the instrument can function in a variety of musical roles; rhythmic, melodic, and harmonic. In addition, and, most importantly in a Western musical context, the tabla is not limited to a single key as is the case for many other pitched Indian instruments. This internationalisation of the tabla is evidenced by the instrument's growing prevalence in non-South Asian countries and inclusion in a range of musical genres throughout the world. According to Nuttall, 'Today a tabla player could just as easily be German, Italian, Australian, Canadian, American, Japanese, South African or Indian (not to mention the possible multiplicity of hyphenated identities arising from those localities)' (Ibid: 17).

Despite this international popularity and involvement in a variety of genres, the only recognised and established repertoire for the instrument is designed for, and pertains to, the

traditional music of India<sup>2</sup>. This traditional repertoire is a vast and distinct body of known and recognisable works that constitutes the performative and pedagogical music for the instrument. The repertoire has been created specifically for Indian music and the musical conventions of this tradition<sup>3</sup>. Accordingly, it contains materials and resources to negotiate the musical elements present within the conventions of Indian music. As a consequence, new information and repertoire is required for tabla parts to appropriately navigate the wide variety of musical elements in contemporary world music that do not exist in Indian music, such as harmony, chords, changing keys, and music that does not include Indian rhythmic structures such as tala<sup>4</sup>. The practice-led research model has been employed in this project to examine the viability of a variety of new musical elements and roles performed on the tabla in negotiating this context, such as multiple pitch melodic adaptations, a range of harmonic roles and a variety of new rhythmic approaches<sup>5</sup>.

I argue in this work that sustained growth and integration of the tabla in the West is dependent on a process of normalising and internationalising the instrument within the musical culture of the West. Through my established research and endeavours in this repertoire, along with the new hybridised staff notation system for the tabla created during my Masters research at Monash University, the tabla has now been adopted in the V.C.E.<sup>6</sup> syllabus as an instrument of study in formal education in the state of Victoria. I also have tabla students undertaking studies in associate, bachelor, and honours degrees at Universities in the state of Victoria. In each of these settings, contemporary tabla repertoire, in addition to the traditional repertoire, would assist in integrating the instrument in the current global musical context in which it is located today. In Western musical settings, staff notations of tabla music may assist in legitimising and integrating the instrument in the musical culture of

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<sup>2</sup> The traditional music of India in which the tabla is performed is diverse and contains a variety of styles such as classical, devotional, folk and popular. The tabla repertoire performed in these diverse settings is contained in the traditional tabla repertoire of North India. Detailed information on that repertoire and the different musical categories in which is applied is contained in Chapter 3. It should also be noted that the tabla is present in a variety of music in South Asia. While there are stylistic differences in these regions, the traditional repertoire predates some of these regional divisions and as a general rule, the role, functions and repertoire is consistent with the musical conventions of North Indian music. Lybarger (2003) details this in relation to tabla repertoire performed in Pakistan. For tabla performance in Sri Lankan music see Amaradeva (2014).

<sup>3</sup> Though there are certainly differences in the musical conventions within the many different genres and styles of Indian music, conventions such as raga, tala and drone are consistently present in Indian music. It is the way in which tabla repertoire has been shaped by these conventions that is of primary importance in this research.

<sup>4</sup> Tala is the system of rhythmic organisation in Indian music.

<sup>5</sup> The specific elements and roles employed in this research are detailed in Part II of this written component.

<sup>6</sup> The Victorian Certificate of Education (VCE) is the certificate that the majority of students in the Australian state of Victoria receive on completion of secondary education.

the West. This research, including the hybridised staff notations, assists in furthering the recognition and value of the instrument in Australia such as those mentioned above.

The recorded, scored, and theorised resources included in this research may be accessed as an alternative performative and educational resource for tabla players and may also serve as a model for other musicians and composers wishing to create contemporary music with tabla. It is intended that the combined theoretical and practical aspects of this research may act as a bridge for musicians and audiences to the broader musical capabilities of the tabla.

In assessing the efficacy of the new musical roles and functions of the tabla examined in this research, a portion of musical analysis is included in Part II of this thesis. Rather than considering the role of the instrument from the point of view of Indian musical concepts, the musical analysis considers the role and function of the tabla in ensemble settings from a Western analytical point of view. While many Western musical concepts, such as the broad categories of melody and rhythm, share commonalities with Indian musical concepts, such as raga and tala, it is important to note they are not the same. To avoid confusion, the distinction needs to be made that the actual music created in this project includes musical elements from a variety of cultures, but the broader context in which the music is situated is culturally Western. Therefore, in order to assess the functionality of the instrument in the Western context of this project, the analysis is divided into three Western musical concepts of melody, harmony, and rhythm. For the same reason, it also makes extensive use of the Western musical approach of staff notation. Situating the tabla in this way, in Western musical concepts and language<sup>7</sup> immediately places the instrument in an intercultural conceptual context.

The most important finding of this research is the musical efficacy of new roles and musical elements that may be performed on the tabla in contemporary music. This finding is part of an intercultural musical process that situates the tabla in contemporary world music, and is considered here in the context of Western academia and musical analysis. While the harmonic, melodic, and rhythmic ideas for the tabla have been documented in this research in the genre of world music, they may be applied within a variety of genres and ensemble settings. The results and research outcomes of this project are the recordings that are

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<sup>7</sup> (such as rhythm, from the Latin root, *rhythmus*)

presented within the folio. They represent the documented findings of the musical experiments conducted in this research. These research outcomes contribute significant new musical components to the repertoire for the tabla; primary examples of these are: the ability to play in music with shifting tonics, changing chords, and changing keys as well as the application of pitch on the tabla in melodic and harmonic roles.

With these outcomes in mind, I have intentionally placed the performed music at the centre of this study. Accordingly, the majority of the allocated written space is dedicated to the specific details of the actual performed music. In order to fulfil the aims of the project, and in the hope of presenting a work with a quantity of accurate, detailed musical content, the written component explicates the theoretical musical ideas presented in the recorded compositions in the context and continuum of tabla performance. The activity of music-making necessarily occurs within a cultural, historical, and intellectual context and, the consideration of these contexts is no doubt important in the field of academia. However, within the scope of this practice-led research there is not sufficient room to discuss the nuances of these contexts in detail. Nevertheless, I have sought to provide the necessary background of these contexts to provide a sufficiently balanced account for this work to be adequately contextualised.

This project seeks to establish a framework for tabla performance that navigates the demands and musical elements of contemporary intercultural music. In order to do this, a set of musical works have been created to exemplify the alternative musical methods applied in creating new music for the tabla. The compositions are documented in the form of audio recordings and notation to demonstrate the practical application of the theoretical musical concepts enunciated in the written component. The complete research folio contains CD recordings, scores of the recorded music, and a written component. The two CD's are commercially released albums titled: *The Tabla Project* and *Blueprint*. The recorded music presents the new repertoire in a practical musical application. The scores are provided for the purpose of correlating and analysing the theoretical musical concepts discussed in the written component with the recorded music provided in the CDs. The written document outlines the current context for tabla performance within the traditional music and contemporary settings, argues the need for contemporary tabla repertoire, details the theoretical musical basis for the new model and provides analysis of the recorded music in substantiating the theoretical concepts outlined in the written document.

## 1.2 Description of Chapters

*Part I: Contextualising the Field* outlines the context in which this research is situated. It contains chapters one, two and three.

*Chapter One: Introduction to the Research* provides a broad outline and rationale for the research and next identifies the questions and aims of the research that are focused on the investigation of the potential of new performative approaches to the tabla. The chapter is concluded with a discussion of intercultural considerations related to the research.

*Chapter Two: Literature, Notation and Recordings Reviews* contextualises this research within the current literature related to the tabla, contemporary recordings with tabla, and tabla notation. The literature review examines the most significant, relevant texts on the tabla to date and is organised according to the relevant conceptual lineages. The review of recordings presents an outline of contemporary audio recordings with tabla and is followed by a review of the current notation systems for the tabla.

In order to contextualise the new repertoire presented in this research *Chapter Three: Current Tabla Repertoire* details the existing repertoire and the performance practice settings in which the repertoire is presented as well as defines the traditional role and musical functions of the instrument.

*Part II – Tabla Without Borders* details the research completed in this project, it contains chapters four, five, six and seven.

*Chapter Four: Introduction* details the methodological, theoretical, and compositional foundations of the new repertoire presented in this research. It introduces and describes the musical analysis of the practical application of these foundations that is included in Part II.

*Chapter Five: Research Design and Method of Enquiry* defines the methodology of the research within the practice-led research tradition. It defines the research design in terms of compositional approaches and intentions, genre, and common musical practices. It also outlines the international context of contemporary tabla performance and details the new performative techniques, configuration of the instrument and construction innovations

applied in this project.

*Chapter Six: Melody* describes the melodic capabilities of the new multiple-pitch configuration and the resultant compositional approaches in contemporary ensemble settings. It presents musical analysis of the melodic approaches for the tabla from the recorded music in this project including tabla performance of entire melodies, melodic ostinatos, and melodic fragments.

*Chapter Seven: Harmony* describes the way in which the research attempts to establish a method of tabla performance that relates to, and functions within, harmonic settings. It defines multiple harmonic approaches for the instrument such as tabla pitches sounding within the pitch structure and function of chords, a variety of scales degrees, and pedal points and analyses their practical application in the recorded and notated music within the research portfolio.

*Chapter Eight: Rhythm* documents, examines, and analyses the new rhythmic approaches and rhythmic roles generated as part of the contemporary intercultural music performance in this research. The chapter defines contemporary rhythmic organisation on the tabla, tala, and vibharg alternatives, contemporary internal rhythmic organisation, polyrhythmic approaches, and changing time signatures in tabla performance. The impact of melodic and harmonic roles on the rhythmic role of the tabla is also discussed in this chapter.

### **1.3 Research Aims and Questions**

#### *Research Aims*

The primary aim of this study is to investigate the potential of new performative approaches for the tabla in contemporary intercultural music through recorded, scored, and written mediums. More specifically, the aim of the research is to define a framework of these new roles and musical elements for the tabla in contemporary, small ensemble composition and performance within the categories of melody, harmony, and rhythm. The ultimate goal of this research is to lay the foundations for an alternative repertoire for the instrument that complements and adds to the existing traditional repertoire that originates in India.

The aim of the performance component is to provide a set of new works that exemplify the practical application of new roles and musical elements performed on the tabla in a variety of ensemble settings. The aim of these musical works is to substantiate the functionality and serviceability of the new musical elements proposed in this research.

The aim of the written component is to provide an articulation of the musical components, compositional elements, and performance techniques that have been used in creating this new repertoire. In establishing the new knowledge presented in this study, the written component contrasts the new musical approaches in this research with the existing repertoire, and importantly, argues that this new repertoire complements the traditional repertoire. Additional aims of the written component include demonstrating the need and rationale for the new repertoire, contributing to the body of knowledge on contemporary tabla and filling a gap in the literature regarding contemporary tabla performance.

#### *Research Questions*

The major question that defines this research is: what roles might the tabla play, and which musical elements may be performed on the tabla in music that does not adhere to the musical conventions for which the current repertoire is devised, and instead, contains musical elements and conventions that are not accounted for in the current repertoire? In order to answer this question, the research investigates the following specific musical questions: In what way might the tabla relate to the melodic and harmonic content of contemporary music? What are the melodic and harmonic implications and potentials of multiple pitched tabla drums in an ensemble setting? What rhythmic roles may be played on the tabla in music without tala?

#### **1.4 Interculturality in Contemporary Tabla Performance**

As a contemporary Australian musician, I consider my job to be to reflect on and express the culture of our time and place through my chosen artistic medium: music. Therefore, this project is ultimately the product of the musical culture in contemporary Australian society; a musical culture that reflects the current state of a society that is today made up of a diverse range of cultures, peoples, and musics. Today, Australia has one of the most culturally and linguistically diverse populations in the world, with over a quarter of Australians born overseas, in close to 200 different countries, there are now over 300 languages spoken in Australia (Australian Bureau of Statistics 2016). Furthermore, our cultural ties with Asia are

increasing rapidly, today, 40% of Australia's migrants are born in Asia (Ibid). Australia's positive approach to musico-cultural diversity has been central in developing my career, and is evidenced by the fact that I have received state, federal, and university funding over the past two decades to study the traditional music of India, in India, with great masters of the art. Further, the support I have received from the music industry and music community in Australia to integrate this knowledge within the existing musical culture is testament to the openness of the contemporary Australian musical culture of which this project is a product. While this interculturality is certainly not present in all aspects of Australian society, this project seeks to reflect and enhance the progressive intercultural aspects of Australian musical culture through integration of the tabla.

This research stands in a tradition of musicians, both Indian and Western, who have sought to find ways in which to combine the artistic and cultural practices of India and the West in the form of musical collaboration. This tradition was led by highly regarded musicians of both cultures, Ravi Shankar and The Beatles in the 1960's and continues today in both musical and academic fields as evidenced in the recordings and literature reviews that follow this section. In Australia specifically, this research sits among a number of recent Australian PhD projects that focus on elements of Indian music in intercultural settings in Australia (Evans (Sandy): 2014, Strazzullo: 2014, Young: 2015, Wren: 2015). My position in this research, as a musician from multicultural Australia and culture bearer from my years spent in India, is ultimately to continue and progress this intercultural tradition in a respectful, egalitarian and collaborative method.

While the hybridity and interculturality present in this field are inevitable repercussions of globalisation, the overarching assessment in traditional ethnomusicology is that hybridity reinforces hegemonic power. This is certainly a valid concern, but one that fails to consider the many different reasons for, and ways in which, hybrid and intercultural projects are enacted. There is much evidence to support the concern that the power differential present in both colonialism and today's global market has disproportionately benefited the West in much of the uncritical hybridity that is produced in today's global culture (Said: 1978, Bhabha: 1994, Bohlman: 2002). Generalised perceptions of intercultural projects are poorly served by a long-standing practice in corporate multiculturalism in which non-western cultures are left out of the economics and attributions of musical projects. This practice is often critiqued to be a direct continuation of colonialism (Bohlman: 2002). Uncritical

hybridity of this nature has certainly been damaging to the necessary growth of positive intercultural projects in what is an inevitably globalised world.

While concerns regarding uncritical hybridity are well founded, it is also true that there is a “...scarcity of ethnomusicological research that examines the positive effects of hybridity” (Wren 2015: 31). It must be acknowledged that the negative aspects of hybridity are not ubiquitous (Kraidy: 2005), and that a respectful and nuanced approach can assist in navigating the inevitable path of hybridity established by globalisation. A detailed examination may consider that hybridity is not new, instead, it is the way in which many cultures have evolved. The notion of a culture unaffected by other cultures in the 21<sup>st</sup> century does not exist; ‘all cultures are involved in one-another; none is single and pure, all are hybrid, heterogeneous, extraordinarily differentiated and unmonolithic’ (Said 1994: 15, in Wren 2015: 37). This is certainly true in the case of Australia and India, especially so in North India where the tabla originates. Evidence of this intercultural exchange is found in the many different cultures within the Indian tradition; today, most tabla players learn and perform repertoire from a variety of tabla gharanas rather than maintaining strict adherence to the gharana in which they are based<sup>8</sup>. This process of exchange and interaction between different parts of the one culture, or nation, may be considered in the sub-category of intracultural (Lo and Gilbert: 2002). Interculturalism involving Indian instruments, such as this research, is certainly bi-directional; non-Indian instruments have readily been adopted into traditional Indian music. Violin, slide guitar, and harmonium are Western instruments that have been embraced in this way<sup>9</sup>. In the same way that these instruments are now presented outside their traditional music, in the traditional music of another culture, this study presents the tabla outside its traditional music, in a new cultural and musical setting<sup>10</sup>.

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<sup>8</sup> Tabla gharanas are stylistic schools, originating in family lineages in which tabla players train in the Indian musical system.

<sup>9</sup> Violin was introduced in South Indian music in the late 1700’s (Swift: 1989). It is most common in South Indian music though it is also performed in north Indian music, eg. Kala Ramnath. The slide guitar was first introduced in traditional Indian music in the 1960’s by Brij Bhushan Kabra. The harmonium has been played as an accompanying instrument in many forms of Indian music since the 1900’s.

<sup>10</sup> With the tabla now heard in such a multiplicity of musical genres and settings around the world, listeners who hear the tabla in these settings may well be unaware of the instrument’s origins. This point to the possibility of the tabla becoming a ‘supra-cultural’ instrument in the future. Supra-cultural instruments are played in numerous contexts around the world, take on new meanings in each cultural setting and therefore no longer have singular cultural identities, such as the piano, violin, and guitar.

Engaging the musics of India and the West in a process that involves both tradition and interculturality is a practice that spans over sixty years and began with Ravi Shankar (Farrell: 1997, Lavezzoli: 2006). It is evident through his career that Shankar's model included the proliferation of both tradition and interculturality at the same time. The expansion of Indian music and Indian instruments in the West has proven his model effective. Much of the popularity of Indian music and its instruments in the West is in part due to the intercultural music that has been a hallmark of its rise in the West<sup>11</sup>. Today, it is commonplace for many of the most respected performers of Indian music to be involved in both traditional and intercultural music<sup>12</sup>. Many of these artists divide their careers between Indian and Western musical cultures and are engaged in creative exploration to situate their skills in the given cultural setting, routinely shifting between tradition and innovation. Evidence of this intercultural musical activity is readily available on discographies of these artists, such as the prolific work of tabla master Zakir Hussain. Hussain may today be considered the most prominent Indian musician of this time, and his discography consistently shifts between intercultural collaboration and tradition<sup>13</sup>. My career has also included this dual approach, as an example, on a particular day during the creation of this research my timetable included presenting a morning lecture on traditional Indian Rhythm at Melbourne University, a lunchtime concert of intercultural music with cello, Indonesian vocal, and tabla, afternoon rehearsal at Monash University for the World Music Orchestra and evening teaching traditional tabla in the oral method at the Melbourne Tabla School. No doubt the tabla lineage that I pass onto students in Melbourne, that is a direct line from tabla master Anindo Chatterjee, (student of the revered Gyan Prakash Ghosh), will inevitably include both traditional and intercultural aspects.

The intercultural aspects of these endeavours have long assisted the interest in traditional Indian music in the West and routinely acts as a bridge for audience members to the

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<sup>11</sup> See Lavezzoli (2006), Farrell (1997). In addition, Ravi Shakar, Ali Akbar Khan and Yehudi Menuhin's musical relationships as well as Tauffiq Qureshi, Harihar Rao, Zakir Hussian, Trilok Gurtu and George Harrison with The Beatles (1967 - *The Lonely Hearts Club Band* album was the first of many to feature songs with strong Indian musical influences).

<sup>12</sup> Leaders of Indian music involved in intercultural music include Ravi Shankar, Allah Rakah, Zakir Hussian, Trilok Gurtu, Hariprasad Chaurasia, Anindo Chatterjee, Tauffiq Qureshi, Asha Bhosle, Anoushka Shankar, Vishwa Mohan Bhat, Lakshmi Subramaniam, Vikku Vinayakram.

<sup>13</sup> See Hussain, Zakir in the discography of this document.

traditional music<sup>14</sup>. Western interest in traditional Indian music flourished after the inclusion of Indian instruments in Western pop music in the 1960's such as The Beatles (Farrell: 1997, Lavezzoli: 2006). For example, the first appearance of a sitar in Western pop music was in the track Norwegian Wood on The Beatles album, Rubber Soul in 1965 and the Ali Akbar College of Music began training Westerners in traditional Indian music in San Francisco in 1968, and is still open today<sup>15</sup>.

With hybridity and globalisation advancing at a rapid rate, their growth will in-turn expediate the expansion of interculturality. With this in mind, the question is not if hybrid intercultural projects should proceed, rather, how they are to take place. The historical context requires intercultural projects to be sufficiently problematised and duly considered; not only on the merit of each individual project, but also in the way a particular project is located within a larger cultural endeavour, or a person's career.

This project in particular is situated within a career dedicated to establishing the tabla in Australia through both traditional and intercultural practices. The premise of this project is to better integrate the tabla in Australia's hybrid intercultural society through the creation of a repertoire that reflects this new globalised culture. The PhD research presented in this project is the next stage in my career that has followed this model of tradition and interculturality and has been dedicated to integrating Indian music and Indian instruments in Australia. Founded in Hood's notion of 'bi-musicality' (Hood: 1960) in which the music of both cultures is understood and practiced at a high level, this project is an ethical intercultural work of mutual benefit. My position in this project is the same as it has been throughout my career, one that implements my privileged position as a white, Western male to benefit the music and instruments of India in Australia. I have done this in Australia for over two decades in Shankar's model by performing traditional music in both India and Australia as well as assisting to establish the traditional music in Australia through teaching hundreds of students traditional tabla at the Melbourne Tabla School. I have also used my privileged position as a Westerner to have the tabla accepted in Australia's formal education

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<sup>14</sup>In addition, in my own experience, many of the three hundred plus students that have attended the Melbourne Tabla School over the past decade developed initial interest in the tabla through attending non-traditional music performances (pers. comm). I have witnessed the same progression in the two hundred plus students that have been in the world music ensembles I have run at Monash University over the past decade. The students gain an interest in traditional music through listening to contemporary intercultural music with Indian influences.

<sup>15</sup> The Ali Akbar College of Music is now headed by Ali Akbar Khan's son, Alam Khan.

system at secondary and tertiary levels<sup>16</sup>. Likewise, I have attempted to maintain and further Australian musical culture through engaging Australian musicians from diverse musical backgrounds with the tabla in professional performing contexts. Far from the corporate model of appropriating aspects of minority cultures exclusively for financial benefit, this project is part of a career dedicated to the study and proliferation of Indian music, in its many forms. It seeks to embed an instrument of Indian origin in the type of hybrid interculturated society that is represented well by Australia.

While the music presented in this research is intercultural, as it is ‘a hybrid derived from an intentional encounter between cultures and performing traditions.’ (Lo and Gilbert 2002: 36), the study here is predominantly of the music rather than the cultural or political implications of the music. This is not to suggest there are no cultural and political aspects or implications of this music; there always is. Nor have these aspects been ignored in the process of completing this research. This is a study that includes intercultural musical aspects and focuses on the specific musical details and repertoire, rather than the broader cultural implications of the work. The purpose of this project centres on filling a gap I have identified in both the written and recorded fields of contemporary intercultural tabla performance. That is, the way in which the tabla is performed in relation to the notes, melodies, harmonies and rhythms of contemporary intercultural music. It follows on from recent Australian research that includes ethnomusicological studies of Australian and Indian intercultural collaborations (Wren: 2015); practice-led studies of Indian and Australian musical collaborations (Evans, Sandy: 2014) as well as those that situate Indian musical practices within Western musical forms (Young: 2015) and international anthropological studies of global tabla such as Nuttall (1998, 2011). As this research centres on filling a gap regarding the actual performed music of the tabla in contemporary intercultural settings it may be considered to have aspects of transculturality, as it may be considered to be ‘aiming to transcend culture-specific codification in order to reach a more universal human condition’ (Lo and Gilbert 2002: 37). Given the breadth of the topic of interculturality, that has almost innumerable permutations and little consensus as regards definitions<sup>17</sup>, a detailed study of the cultural aspects of the music and research process would leave little space to consider the

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<sup>16</sup> The details of this are outlined on page 4 of this document.

<sup>17</sup> See: *The Intercultural Performance Reader*: 1996

actual performed music in depth<sup>18</sup>. The study centres on the performed music in the hope of presenting a work with a depth of practical musical integrity. The attempt here is to avoid what Taylor describes in world music literature as ‘...scholars who too often talk about music without talking about music.’ (Taylor 1997: xvii). Accordingly, and in order to fulfil the aims of the project, most of remaining written space, both within the body of the work and the following literature review, is dedicated to the actual performed music<sup>19</sup>.

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<sup>18</sup> A detailed study of the cultural and intercultural aspects of this research would consider every aspect of the research and its cultural origins; from the musicians who perform the music, to the medium used to transmit the music to the musicians, to the setting it was recorded in, to the perceived origins of each musical parameter, to the funding body that enabled the research and many more components.

<sup>19</sup> Other cultural topics that may be considered relevant to this study including acculturation, signification, synchronicity, and hybridity are covered in relation to world music and globalisation in: Hood 1960, Nettle 1978, Bennett 1986, Frith 1989, Hall 1991, Erlmann 1996, Taylor 1997, Reimer 2002, Solís 2004, Campbell 2004, Sam and Berry 2006 and Miller 2006. The well-established conceptual lineage in intercultural and cross-cultural music studies includes: Nettle 1978, Kartomi 1981, 1994, Marcus 2004 and Bailey 2008.

## CHAPTER TWO: Literature, Notation and Audio Reviews

The following chapter contextualises this research within the current body of literature, notations, and contemporary audio recordings of the tabla. The literature review examines relevant written works on the tabla to date and identifies the gap in the literature this research seeks to fill. The tabla notation review considers the range of notation systems currently in publication and rationalises the system applied in this research. The audio review and supplementary discography present an outline of contemporary audio recordings with tabla over the past sixty years and situates the recordings in this work within that field.

### 2.1 Literature Review

At present, the vast majority of literature on the tabla deals with the traditional aspects of the music and culture surrounding the instrument. To date, there are only a handful of pages within publications on traditional tabla repertoire that discuss contemporary, intercultural music for tabla, the focus of this research. There are no publications dedicated exclusively to this contemporary repertoire. As a consequence, this work contributes to the body of knowledge on the contemporary performance practices of the instrument. To illustrate this gap in the literature and, for the sake of perspective, this literature review examines the most significant, relevant texts on the tabla to date.

The review provides contextual information on the main themes pertinent to this research and is organised according to the relevant conceptual lineages. The current body of literature on the tabla is divided here between ethnographic studies and repertoire-based publications. Following this, the limited references to contemporary approaches to Indian rhythm and the tabla are considered. The review is concluded with a discussion of the current gap in the literature that this research attempts to address.

#### 2.1.1 Ethnographic Studies

A significant proportion of literature on the tabla is focused on the ethnographic and sociological aspects of tabla players of North India. These works provide insights into the lives and musico-social organisation of the musicians documented. Many works in this field are primarily concerned with the traditional musico-social division of tabla players into stylistic schools known as *gharanas* (Bhowmick: 1981, Gottlieb: 1977, Mainkar: 2008, Roach: 1972). While others document the

broader sociological background for tabla players in India (Kippen: 1989, 1998). There are also works in this field that concentrate on the educational practices within the tabla tradition of *guru-shishya*<sup>20</sup> and traditional training via oral transmission (Booth: 1986, Mulgaokar: 1994, Nuttall: 1998). Finally, there are works that focus on the historical and ethnological aspects of the tabla and its predecessor, the *pakhavaj*<sup>21</sup> (Kippen: 2006, Mistry: 1999). These works sit alongside numerous articles concerning the construction of the instrument and the musico-cultural aspects of the maker's lives (Alam: 2008, Roda: 2014, 2015(2)).

These ethnographic works provide valuable insights into the complex social organisation of Indian musical society and the lives of tabla players. They focus on the cultural and social aspects of music-making, and as a consequence, include minimal documentation of the performed music. Publications that document the performed music and technical aspects of the repertoire are considered next.

### 2.1.2 Traditional Tabla Repertoire Studies

Tabla repertoire publications are divided into descriptive: those that describe the music as it is played at the time of the study and, prescriptive: those that prescribe the repertoire and how it is to be played.

#### *Descriptive Repertoire Studies*

Gottlieb (1977), Stewart (1974), and Shepard's (1976) works are examples of studies that centre on documenting the traditional performed repertoire in the descriptive model. Stewart's study focuses on the accompaniment repertoire and the historical origins of the tabla, and Shepard draws attention to the solo repertoire of the *Banaras gharana*. Gottlieb's work stands as the most substantial and influential descriptive work on the tradition of tabla playing in North India. The work consists of recordings, transcriptions, and commentary of tabla *lehar*<sup>22</sup> performances by the *khalifa*<sup>23</sup> of each of the six, main tabla gharanas of North India. Central to the success of the work is the time in which it was undertaken. If Gottlieb had attempted the work much before 1977 he may have found the players unwilling to have their work documented in such a way, due to musical

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<sup>20</sup> *Guru-shishya* is the traditional master and disciple relationship between teacher and student.

<sup>21</sup> The *pakhavaj* is a traditional barrel drum that is commonly considered to be the predecessor to the tabla.

<sup>22</sup> Tabla *lehar* is the traditional solo repertoire of the instrument which is accompanied by a repeated melody known as a *lehar*.

<sup>23</sup> The *khalifa* is the hereditary head of each gharana (stylistic school).

secrecy observed by many tabla players at the time (Shepard 1976:72). Conversely, if Gottlieb's work were completed later, some of the distinctiveness of each tradition may have begun to diminish as recordings proliferated and musical practices of each gharana were adopted into the other over the past forty years.

These descriptive works serve well to define the tradition of tabla playing at the time and provide valuable historical documentation. While their contribution in recording a largely undocumented tradition at the time is profound, the practical application of these works for tabla players is limited. This is largely due to the theoretical focus of the writing, the layout of the works and the notation systems employed<sup>24</sup>. Further, the accuracy of Gottlieb's transcriptions has also readily been criticised (Kippen: 1998 and Stewart: 1999). The approximate, hand-written transcriptions do not convey the technical complexity of the performed repertoire with enough specificity to be employed in performative or pedagogical setting. For that purpose, works written in a prescriptive method, that include accurate and detailed notations of tabla repertoire, are considered next.

#### *Prescriptive Repertoire Studies*

Prescriptive works that document the traditional repertoire for practical applications form the largest category of literature on the instrument (Dutta: 1984, Leake: 1993, Courtney: 2001, 2003, Wegner: 2004, Chatterjee: 2006). Between them, the books detail the many aspects of the complex and vast tabla repertoire including compositions in the traditional semi-improvising theme and variation forms of *peshkar*, *kaida*, *rela*, *chalan*, *laggi*, and *theke* as well as the fixed compositional forms of *tukra*, *gat*, *paran*, *mukhra*, *dupodi*, *tripodi*, *uthan*, *tripali*, and *chakradar*<sup>25</sup>. While some of these works briefly reference instrumental, vocal or dance accompaniment (Chatterjee: 550-557 and Leake: 229-231), they are primarily dedicated to the tabla solo portion of repertoire. As far as my research has uncovered, there are no books in publication that are dedicated to any other aspect of the traditional repertoire, such as classical instrumental accompaniment, dance accompaniment or devotional music accompaniment. The publications listed above document the traditional repertoire of the tabla. References to non-traditional approaches to tabla music are considered below.

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<sup>24</sup> Issues relating to the notation of tabla music are covered in detail at the conclusion of the literature review.

<sup>25</sup> Each of these compositional forms are defined in the glossary of this document.

### 2.1.3 Contemporary Approaches to Tabla Repertoire

While the global interest in tabla has led to many recordings over the past sixty years that document contemporary, intercultural tabla performance and adaptations of tabla repertoire, there are few written publications that document this component of the repertoire. There are three main areas in this field. First, publications that document the globalisation of Indian music and Indian instruments. Second, publications about the adaptation of tabla repertoire on non-traditional percussion instruments. Third, publications that discuss contemporary intercultural tabla repertoire; the focus of this research.

#### *Globalisation of Indian Music and Indian Instruments*

There are a number of works that map the globalisation of Indian music and Indian musical instruments from an ethnomusicological and anthropological perspective (Lavezzoli: 2006, Farrell: 2005, Nuttall: 1998:150, 2011). Lavezzoli and Farrell cover the history of Indian music in the West, the international careers of important figures and the interactions between Indian musicians and the musical culture of the West. Nuttall's work specifically considers the tabla and the international community of tabla players. Her works include mapping the globalisation of the instrument and the transnational crossings of tabla players. These important works evidence the expanding global context of the tabla. They identify the many musical genres in which the tabla is performed and the history that has led to the current global context of the instrument. These works focus on the ethnomusicological aspects of the field, works that centre on the contemporary repertoire and performed music are considered next.

#### *Tabla Repertoire Adaptations*

Contemporary approaches to tabla repertoire include the few publications and theses that apply traditional tabla compositions and Indian rhythmic theory to the Western drum-kit (Leake: 1989, Diethrich: 1995, Whitman: 2011, Weiss: 2005 [audio recording]). Using a variety of approaches to adapt traditional tabla pieces to the drum-kit these works create direct or associative correlations of each note played on the tabla to notes on the drum set and transfer broad Indian rhythmic concepts such as *tibai* and *tala* to the repertoire of the drum-kit. These approaches outline the potential for enhancing the current drum-kit repertoire with aspects from Indian rhythmic theory. As with the publications in the previous sections, these works are focused on traditional tabla repertoire, the contemporary component being the adaptation of it onto another instrument.

### *Contemporary Tabla Repertoire*

Contemporary intercultural tabla performance is briefly referenced in two publications that primarily focus on traditional tabla repertoire<sup>26</sup>. Leake (1993: 232) includes two pages that reference intercultural music titled ‘contemporary approaches to improvisation’ within his traditional repertoire publication. The section discusses broad concepts of improvisation that are based on traditional tabla repertoire forms which may be adapted in non-traditional settings. These are followed by a further two pages of photos of alternative tabla and percussion configurations.

Chatterjee’s (2006: 555) traditional repertoire text includes a two-page reference regarding contemporary tabla repertoire that serves as a good example of the current state of written information about contemporary tabla practice. Chatterjee suggests that non-traditional playing (that he refers to as part of a band) is a topic that tabla teachers should not be expected to teach. He instead outlines some basic ideas for performers in these settings. In reference to the choice of pitched tabla he acknowledges that ‘Since most of this music is based on changing chord patterns, it can become a hard decision to make...’ and goes on to suggest that ‘generally a C tabla works fine.’ There is no discussion of the musical role of the tabla in contemporary music. The two pages dedicated to the topic in these works do not discuss the role of the tabla player in contemporary music in detail. Neither do they provide repertoire or pieces for performance.

### **Conclusion**

The works considered in this review include those that address important aspects of tabla performance from ethnographic, sociological and anthropological fields of study. Other works listed here cover the substantial traditional repertoire of the instrument documented in descriptive and prescriptive methods. Contemporary works considered here cover the history of Indian music in the West and finally, the limited writing on the contemporary performance practice of the instrument.

Among these contemporary works are those that point to the growing globalisation of the tabla and document the presence of the instrument in intercultural music over the past sixty years. Despite this presence, there is yet to be in-depth written documentation of how the instrument

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<sup>26</sup> Lindsay’s M.A. thesis (2013) claims to document new repertoire for the tabla. It has been omitted here as his research documents new traditional repertoire in traditional forms such as *kaida*. This is distinct from the new, non-traditional repertoire discussed here.

has been or might be, used or of the musical parameters or conventions that may be applied on the instrument in contemporary intercultural music. In the existent publications, there are only a handful of pages that detail non-traditional performance techniques for the tabla and as it stands, there is no written or noted contemporary repertoire for the instrument. As a consequence, there remains a gap in the literature that this research seeks to address, in which compositional concepts and musical roles for the tabla in contemporary, intercultural music are discussed, defined and notated. In order to fill this gap, this research provides an articulation of the musical components and performance techniques that have been applied in integrating the tabla in contemporary, intercultural settings. In addition, as there is currently no written documentation of the melodic possibilities or harmonic implications of the tabla in contemporary settings, this research seeks to create a model of tabla performance that includes a multiple-pitch configuration, functioning within harmonic settings and expands the melodic capabilities of the instrument.

## 2.2 **Tabla Notations Review**

Most of the publications in this literature review include notations of tabla repertoire. Many of them are primarily dedicated to this purpose. As there is no standardised system for the notation of tabla music, a variety of notation systems are in use in these publications. The tabla notations presented in this project differs from those in current publications. With this in mind, the following section briefly outlines current issues regarding the notation of tabla music, reviews the most prominent notation systems in publication, and provides the rationale for the notation system implemented in this research.

Contrary to the generalised perception of the tabla as an instrument from an improvising and oral tradition that is free of notation, Indian musical culture has included notation since the *Samaveda* (between 1000-500 BC). While it is true tabla players do not read music during traditional performance, Shepard (1976: 303) reminds us that ‘tabla players have been notating their compositions for generations, hence there are numerous systems of notation secretly in use by tabla players’. She details tabla notation publications from the first in 1864 through a variety of systems until today, in which three main categories remain: the *Bhatkhande* system, individualised symbol-based systems, and Western staff notation adaptations. The design, layout, and readability of these approaches vary widely.

The *Bhatkhande* system is the most common form of notation written in the Hindi language<sup>27</sup>. In this system, Hindi characters indicate the performed note in tabla *bol*s<sup>28</sup> and the rhythm is defined by the spacing of the characters as well as horizontal and vertical lines as shown below.

धा धा <u>तिर</u> <u>किट</u> X ता ता <u>तिर</u> <u>किट</u> ०		धा धा तिं ना २ धा धा धिं ना ३
(दुगुन)		
<u>धाधा</u> <u>तिरकिट</u> <u>धाधा</u> <u>तिंना</u> X <u>धाधा</u> <u>तिरकिट</u> <u>धाधा</u> <u>तिंना</u> ०		<u>ताता</u> <u>तिर</u> <u>किट</u> <u>धाधा</u> <u>धिंना</u> २ <u>ताता</u> <u>तिर</u> <u>किट</u> <u>धाधा</u> <u>धिंना</u> ३

Figure 1. Mishra (1981:52)

Today, many authors apply the *Bhatkhande* system in the English language (Courtney, Chatterjee, Misra, Nainpalli and Dutta). Courtney's notations include both Hindi and English in long lines of tabla *bol*s that lack rhythmic punctuation or pitch indication as shown below.

धा त्र क धे के ट घि न धा ति गि न धा त्र क धे के ट घि न धा ति गि न  
 Dha Tra Ka Dhe Ke Ta Ghi Na Dha Ti Gi Na Dha Tra Ka Dhe Ke Ta Ghi Na Dha Ti Gi Na

धा त्र क धे के ट घि न धा ति गि न धा त्र क धे के ट घि न ति न कि न  
 Dha Tra Ka Dhe Ke Ta Ghi Na Dha Ti Gi Na Dha Tra Ka Dhe Ke Ta Ghi Na Tin Na Ki Na

Figure 2. Courtney (2003: 247)

While the *Bhatkhande* system has been widely adopted in both Hindi and English it lacks the capability of indicating a high level of rhythmic specificity and pitch-based aspects such as melody and harmony. The limitations of this system have led to a range of individualised systems in publication today that vary widely in their representation of the music to be played in the tabla.

<sup>27</sup> Invented in the early 1900's by Vishnu Narayan Bhatkhande.

<sup>28</sup> Tabla *bol*s are mnemonic syllables representing the notes performed on the tabla.



A 7.

Bandh

(Kriuk take tina kriuk) (Kriuk take tina Kriuk) (Kriuk take tina)

Bandh

2 Kriuk (Kriuk take Dhina Kriuk) kriuk take tina Kriuk na-te te

BP- →

0 gang take Dhina gang na-te te gang take Dhina gang na-te te

BP- →

3 gang take Dhina gang na-te te gang take Dhina gang na-

Figure 5. Gottlieb (1977: 150)

In many of the current notation systems it is unclear exactly what is to be played on tabla, partly due to the system design. The system in place in this research attempts to address four fundamental aspects of notation to effectively represent the tabla music: the performed note, rhythmic indication, relative pulse beat, and pitch. As music pedagogy and performance in the West commonly employ notation presented in the established writing convention of staff notation, this research implements a hybridised form that incorporates tabla *bols* and Western staff notation. The format builds on Gottlieb's approach and is part of an overall attempt to contribute to the integration of tabla in the West. The system applied here was initially devised as part of my Masters research in 2010 (Monash University) and has since been adopted by the Victorian Curriculum and Assessment Authority (VCAA) for use as part of Victorian Certificate of Education (VCE) studies in formal education in the State of Victoria. The design features of the notation system in place in this research are covered in detail in Chapter Four of this document.

### 2.3 Contemporary Tabla Recordings Review

The following section is a review of audio recordings of tabla performance in contemporary, intercultural music. The primary concern of the review is to provide a brief survey of the musical approaches applied in contemporary tabla music to date in order to contextualise and differentiate the research presented in this project. While it is beyond the scope of this research to include a comprehensive review of all intercultural tabla music, as indicated in the introduction, the review and discography that follows presents a basic outline of the field as well as identifying important players, common techniques, and musical roles performed. The review highlights an emerging culture of the tabla performed in contemporary intercultural music over the past sixty years in which this research is positioned.

There are many recorded examples of tabla performance in a variety of contemporary musical settings over the past sixty years. In this performance context, the traditional tabla set configuration consisting of two drums, with a single tabla pitch sustaining throughout the music, remains the standard configuration for the instrument to date.

There is a great deal of tabla music in non-traditional ensembles that perform music predominantly from the South Asian region, such as contemporary devotional music (Krishna Das: 2008, 2010, 2011, Dave Stringer: 2015, Nusrat Fateh Ali Khan: 1990), Hindi and Bollywood Films (Samta Prasad: 1963, 1975, Taufiq Qureshi: 1993, 2007), music that combines the traditions of North and South India (Shakti: 1975, 1976, 1977, Shankar: 2000) and the South Asia region (Amaradeva: 2014). As much of this music incorporates conventions of Indian music which pertain to the tabla, such as *tala*, *theke*, *bistar*, *tibai*, and *chakradar*, the musical role of the tabla in these ensembles is similar to that of the traditional music. The single pitch of the tabla in this music serves to reinforce the tonic pitch of the drone, as is its role in traditional music that is discussed in detail in Chapter Three.

The tabla is also heard today in many Western musical genres that do not conventionally include the tabla, such as jazz (Miles Davis: 1972, 1974, Pharoh Sanders: 1999, Oregon: 1987, Charles Lloyd: 2006), pop (The Beatles: 1966, 1967, Sting: 2003, Shiela Chandra: 1982) rock (Tool: 2000, 2001, 2006), heavy metal (BAK: 2012, 2011, Twelve Foot Ninja: 2016), soul and R'n'B (Shawn Lee's Incredible Tabla Band: 2011), drum n' bass (Nitin Sawhney: 1999, 2005, Lamb: 1996), EDM and electronica (U-Zhaan: 2011a, 2011b, 2014, Suphela: 2007, 2011, Talvin Singh: 2008, 2011) and Western classical music (Shawn Mativetsky: 2011, 2014, Bela Fleck: 2009, Zakir Hussain: 2016). The role of the tabla in these ensembles often replaces or replicates that of other Western percussion instruments, such as the timekeeping role of the drum-kit and at times includes referent material to the traditional repertoire, such as *theke*. In the absence of a drone, the pitch of the tabla is commonly tuned to the tonic, and otherwise disregards the chord and key changes that are common in Western music (Dan Weiss: 2008, Badal Roy: 1970, Mukti: 2013). Chatterjee indicates his preference to this approach of disregarding the pitch of the tabla within the tonality in a Western music setting: 'as much Western music changes keys...generally a C tabla works fine.' (Chatterjee 2006: 556)

While there are many examples of tabla players performing in non-traditional ensembles, such as those mentioned above, there are fewer examples of non-traditional tabla parts performed in these

settings. In many cases, the tabla parts played in non-traditional settings are drawn from the traditional repertoire. This presence of traditional repertoire in non-traditional music is noted by Farrell: ‘The sitar plays lines that are idiomatic to Indian classical music, while the jazz musicians stick to jazz phraseology.’ (Farrell 1997: 192).

Performing traditional repertoire in a non-traditional ensemble is common method for producing music in an intercultural setting. Due to the depth and breadth of the traditional tabla repertoire this approach is employed to some extent in almost all non-traditional tabla music, including this research. The distinction between traditional and non-traditional repertoire in this context is certainly a grey area. For instance, it is difficult to label improvising forms such as *rela*, which have innumerable variations and permutations, as strictly traditional or non-traditional. However, there are many aspects of the traditional repertoire and musical conventions of North Indian music which are readily identifiable in non-traditional music. The most common of these is the performance of traditional tala cycle patterns known as *theke* (Shaukat Hussain: 1994<sup>29</sup>, The Beatles: 1966, 1967<sup>30</sup>). Due to the short, repeated patterns, traditional *theke* is commonly performed in pop ensembles, rock groups, and electronic music.

Traditional tabla *lehar* repertoire is also regularly performed in much non-traditional music, such as *kaida* (Zakir Hussain: 1991, 2006, Autorickshaw: 2004, 2006, Pete Lockett: 2010) and *rela* (Tabla Beat Science: 2000, Anindo Chatterjee: 2007, Shakti: 1975, 1976, 1977, Bikram Ghosh: 2003). Other traditional forms performed in non-traditional settings include *laggi* (Aneesh Pradhan: 1995), *chalan* (Autorickshaw: 2006), *peshkar* (Benji Wertheimer: 2003, Tabla Matrix: 2000), *tukra* and *chakeradar* (Bikram Ghosh: 2003, Pete Lockett: 2010), and *sawal jawab* (Anindo Chatterjee: 2007).

Given the culture in which many players study and train in the vast traditional repertoire for many years, it is not surprising to hear this repertoire in non-traditional ensembles. In my experience, it is indeed quite difficult not to play traditional repertoire, due in part to the deeply ingrained habituality of the practice. Importantly, in many cases, traditional repertoire such as *theke* performs an effective musical function in non-traditional settings. While the combination of repertoires from different traditions can, in some cases, produce compelling music, the concept is multicultural, that is, combined groups of diverse backgrounds maintaining their cultural

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<sup>29</sup> The performed *theke* is *keharva theke*.

<sup>30</sup> These pieces include *tintal theke* and *jhaptal theke*.

distinctiveness (Sam and Berry 2006: 20), rather than intercultural, which is a more collaborative interaction among multiple cultural entities (Ross in Burnard, Mickinlay and Powell 2016: 431)<sup>31</sup>. An intercultural approach may assist in developing new tabla repertoire that better integrates the instrument in other genres, which in turn may extend the international influence of the instrument.

Today, there is an emerging culture of tabla music that extends the musical vocabulary of the instrument beyond the conventions of Indian music. World music ensembles that combine musical aspects of a variety of genres and cultures have been influential in creating new music for the tabla that extends the repertoire of the instrument (Oregon, Tabla Beat Science, Autorickshaw, Fine Blue Thread, U-Zhaan, Prabhu Edouard with Nguyễn Lê, Ty Burhoe with Bill Douglas, Zakir Hussain with Bela Fleck, Shawn Mativetsky). This contemporary music variously employs a range of non-traditional approaches to tabla performance, such as unconventional forms, non-tala based rhythmic cycles, unusual time structures (slowing down and unmetred free-time), unaccompanied solos and electronic modifications to the sound of the tabla. The music presented in this research project is positioned in this field.

Among these performers there is a growing movement of tabla players performing with multiple tabla pitch configurations similar to that utilised in this research (Badal Roy, Zakir Hussain, U-Zhaan). To date, the role and function of the additional pitches in these settings has been melodic colour. With the drums tuned to relevant notes of the compositions, the pitches act as melodic embellishments. In attempting to further this developing field of tabla performance, this research project presents works in which the additional pitches are compositionally integrated into the harmonic and melodic framework of the music. That is, in contrast to the current practice for multiple tabla pitches, the pitches of the tabla in this research play the melodies and outline the harmonic structures of the music. It is important to note that while the tabla has been performed for many years in Western music which includes harmonic movement, the repertoire for the pitched tabla is yet to include harmonic materials and approaches for the instrument itself. As it stands, the vast majority is performed with a single tabla pitch that sounds throughout the piece regardless of the harmonic movement. This research attempts to create new methods of tabla performance in a manner in which the pitch of the tabla performs a compositional role in relation to the pitch and harmony of the music.

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<sup>31</sup> Interculturality and multiculturalism are covered in more detail in relation this research in Section 1.4.

This research continues and expands the developing lineage of contemporary tabla music discussed here in this recordings review. As there is yet to be an articulation of the musical concepts and functions of contemporary tabla performance in the literature to date, the research presented here seeks to document and define the new approaches discussed in this review as well as other new approaches to contemporary tabla performance. Primary examples include materials and resources relating to harmonic and melodic roles for tabla performance in which the configuration of the tabla set includes multiple pitches that are compositionally integrated into each piece<sup>32</sup>.

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<sup>32</sup> Part II of the written component covers the new approaches in detail.

## CHAPTER THREE: Current Tabla Repertoire

In order to contextualise the new approaches to performance repertoire proposed here, the following chapter outlines the main categories and sub-categories of the existing traditional repertoire as well as the performance practice settings in which it is presented. The chapter also covers the fundamental role and musical functions of the instrument in a traditional setting and concludes with a discussion of the current state of contemporary tabla performance practice.

The traditional repertoire for the tabla is a vast and constantly changing body of works and as such, there is no conclusive way to define it, nor is it necessary for the purpose of this research.<sup>33</sup> Rather, this section identifies the key aspects of the repertoire that pertain to this research. The section draws on the substantial body of written repertoire texts in English and Hindi, my fieldwork research in India through the period 1997 – 2013 and almost two decades of professional practice in the field<sup>34</sup>.

Currently, the only formalised repertoire for the tabla comes from the traditional music of North India. The performance practice of this repertoire, that is, the contexts in which this repertoire is presented, may be considered in two different categories: solo and accompaniment. The solo repertoire is referred to as *tabla lebara* and the main forms of accompaniment are: classical accompaniment (instrumental, vocal and dance) and non-classical accompaniment (light-classical, devotional and folk music)<sup>35</sup>. Additionally, the performance practices of this repertoire have many variations among the different regions and styles present in the diverse musical culture of India. It is beyond the scope of this research to details these here, though it would be a worthy field of research, instead, a brief outline of these practices is included in this section.

### 3.1 Solo Tabla

The largest portion of the repertoire pertains to solo tabla performance, known as *tabla lebara*. This part of the repertoire is a distinct body of known and recognisable works traditionally transmitted

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<sup>33</sup> Additionally, the performance practices of this repertoire have many variations among the different regions and styles present in the diverse musical culture of India. It is beyond the scope of this research to details these here, though it would be a worthy field of research, instead, a brief outline of these practices is included in this section.

<sup>34</sup> There are many books dedicated to the tabla repertoire in Hindi and English that cover the theoretical foundations as well as specific notations. These are outlined in the literature review of this document.

<sup>35</sup> It should be noted that the term 'tabla repertoire' is sometimes used to refer to the solo repertoire, known specifically as *tabla lebara*.

via an oral tradition. The repertoire includes a vast number of works divided into different compositional forms. These include fixed, non-improvising compositional forms such as *tukera*, theme and variation forms that are improvised within precisely defined rules such as *kaida*, lesser defined rules such as *rela* and open motives for improvisation such as *peshkar*. It also includes the short, time-cycle patterns for each tala known as *theke* that are the most important aspect of the accompaniment performance practice. Tabla *lebara* performance is accompanied by a drone and a short, repeated melody.

### 3.2 Accompaniment

Due to the improvisatory nature of the accompaniment performance practice, clear definitions of the tabla part are less conclusive than those within the solo repertoire. The main role of the tabla in accompaniment is to outline the time-cycle through the defined tabla *theke* for each particular tala. These *theke*s are clearly defined within the repertoire. In performance, they contain a great deal of improvisation and embellishment at the discretion of the performer. There are also solo sections performed during accompaniment. These are either compositions from the solo portion of the repertoire (Saxena: 2006), improvisations based on themes from the solo portion of the repertoire (Chatterjee: 2009) or improvisations based on traditional *bol* combinations (Anindo Chatterjee pers. com. India, 2012). The performance practice in dance accompaniment includes parts from the solo component of the repertoire as well as dance compositions that are most commonly approximated by the tabla player into tabla *bols* during performance (Saxena 2006:67).

Pitch is not indicated in the extensive pedagogical and written repertoire for the tabla and none of the compositions are written for a particular tabla pitch or mode. The role of the single pitch on the tabla is dronal in the traditional repertoire, that is, it reinforces the tonic pitch of the drone<sup>36</sup>. Therefore, the instrument is not required to perform a melodic role in the traditional repertoire. The specific pitch performed on the tabla varies according to the instrument or vocalist; commonly C# or D for *sitar* accompaniment, B or C for *sarod* and E for *bansuri*.

### 3.3 Traditional Performance Practices

While the material played in the performance practice settings of solo and accompaniment are drawn from the same repertoire, different performance conventions are applied according to the

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<sup>36</sup> In order to enhance this dronal quality, performers are instructed in traditional tabla training to play with even and consistent striking velocities so the drum constantly sounds the tonic pitch.

setting. The conventions applied to the performance of a *rela*, for instance, are different (in the case of *rela*, stricter) in *tabla lebara* performance compared to what they are in accompaniment performance. As in all musical traditions, there are too many musical conventions applied in each setting to list. Instead, those that are relevant to this research are explained individually when referred to in this document.

While the bulk of traditional tabla performance is within the accompaniment performance practice, the bulk of the repertoire, and repertoire texts concern the solo aspects of the repertoire. Due to the substantial improvisation that exists in the performance practice of accompaniment, there is little documentation about, or specific notations of, this aspect of tabla performance. Instead, tabla repertoire texts provide substantial documentation of the lesser heard solo aspects of the repertoire. The same focus on the solo aspects of the repertoire exists in tabla pedagogy. Tabla teachers, (myself included), tend to focus on the solo portion as it is methodical, progressive, and pedagogical in construction.

The traditional pedagogical and written tabla repertoire described above includes tabla parts in isolation, without the inclusion of specific instrumental or vocal parts. While the musical parts are ultimately performed together, they are conceived and composed individually. In this traditional repertoire, the broad constraints of raga and tala underpin the musical connection for performers in each piece, rather than detailed, pre-composed interconnected musical parts. For instance, in *tabla lebara*, the repeated, one bar melody that accompanies the tabla part, is chosen by the accompanist prior to hearing the tabla music to be performed. In the accompaniment performance practice, short instrumental or vocal parts provide the framework and themes for improvisations by both musicians that are played within the larger structures of raga and tala. These parts are devised for the broad tala cycle, rather than for specific tabla parts. This system ‘allows the tabla player to enter into a spontaneous and unrehearsed dialog with just about any performer of Hindustani music’ (Pradhan 2011:8).

Due to the quantity, complexity, and musical excellence of material present in the traditional repertoire, tabla players spend much of their playing time mastering the traditional repertoire. It is little surprise that material from this repertoire is present in contemporary intercultural music as

well. Compositional forms from the traditional repertoire that are commonly present in intercultural music include *theka* and *rela*<sup>37</sup>.

### 3.4 Contemporary Performance Practice

While the musical settings for tabla performance have changed substantially over the past sixty years in-line with the growing international interest in the instrument, the performance conventions for the instrument remain largely unchanged. That is not to say there does not exist a contemporary intercultural performance practice for the tabla. There certainly is and practitioners of this music are outlined in the contemporary recordings review in section 2.2. In this thesis I argue that in most contemporary intercultural settings, the repertoire and performance conventions followed by tabla players are the same as outlined above in a traditional setting (as discussed in detail the recordings review). As there is yet to be an alternative definition of the roles, repertoire, and musical parameters for contemporary tabla playing, and, there is currently only one source of tabla repertoire, it is understandable that tabla performance in contemporary music is largely derived from the traditional repertoire.

Today, it is clear that there is a growing number of contemporary tabla players that may ultimately build an alternative repertoire for the instrument. The music performed on the tabla in this category of alternative approaches to the instrument is presently a varied collection of approaches in a wide variety of genres. It currently lacks a cohesive and defined understanding of the musical elements and musical roles that may be performed on the instrument in other genres and contemporary settings. However, the ongoing progress of these musical endeavours may eventually develop into a set of musical principles that function as an alternative repertoire for the instrument. This research seeks to define aspects of this contemporary, intercultural performance practice in order to contribute to the establishment and recognition an alternative repertoire for the tabla.

Access to pedagogical materials is a significant consideration in this endeavour of establishing an alternative tabla repertoire. Contemporary tabla approaches are yet to be defined, notated or documented in a pedagogical format, and as such, are not taught or performed by other tabla players. Without consistent theoretical musical foundations and resultant pedagogical practices, the music may remain as isolated examples of tabla performance.

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<sup>37</sup> Details of this practice along with examples and references are included in the recordings review section 2.3.

As discussed in the introduction, this research seeks to address this circumstance through the creation of a new contemporary tabla repertoire, in a variety of ensemble settings, that is defined, theorised, notated, and recorded.

## **PART II – TABLA WITHOUT BORDERS**

## CHAPTER FOUR: Introduction

This chapter introduces Part II of the written component in which the practice-led research in this project is presented. Part II is comprised of four chapters: Research Design and Method of Enquiry, Melody, Harmony and Rhythm. The first of these, Chapter Five: Research Design and Method of Enquiry, defines the methodology of the research in the practice-led tradition. It defines the research design in terms of compositional approaches and intentions, genre, and common musical practices. It also outlines the international context of contemporary tabla performance and details the new performative techniques, configuration of the instrument and construction innovations applied in this project.

The three chapters that follow delineate the way in which the tabla relates to and functions within the melodic, harmonic, and rhythmic components in the new contemporary tabla repertoire investigated in this research. The first of these, Chapter Six: Melody, considers the melodic potential of the multiple-pitch tabla set in contemporary music. The chapter discusses the effect of the resonance and clarity of the pitch of the tabla on the musical context in which it is played, followed by the melodic capabilities and compositional approaches for the new multiple-pitch configuration. It includes musical analysis that considers tabla performance in contemporary world music ensemble settings of entire melodies, melodic ostinatos, and melodic fragments. Following this, Chapter Seven: Harmony, describes and analyses the way in which this research attempts to establish a method of tabla performance that relates to, and functions within, harmonic settings. It describes and analyses various harmonic functions for the pitch of the instrument in ensemble settings including pedal points, root-based harmony, and triadic harmony. The harmonic function of the instrument within an ensemble setting is considered as well as innovations in which multiple tabla create an entire harmonic framework. The last of these three chapters, Chapter Eight: Rhythm, examines additional roles and elements that may expand the rhythmic repertoire of the tabla. It considers numerous contemporary rhythmic roles for the tabla and the way in which the addition of melodic and harmonic roles affects the rhythmic role of the instrument. The chapter also covers contemporary rhythmic organisation for the tabla including alternatives to the traditional rhythmic organisational system of tala.

There are two broad intentions for these three chapters: firstly, to describe the compositional foundations of the new repertoire as they relate to melody, harmony, and rhythm, and secondly, to provide musical analysis of the practical application of these foundations within the compositions and recordings of this project. Each of these three chapters is divided into sub-sections that detail various performance methods and compositional approaches for tabla performance as related to these musical elements. Each sub-section contains musical analysis of the recordings in the project to provide a detailed inspection and evaluation of the practical application of the theoretical foundations described in each section. The aim of the analysis is to consider the efficacy of the new performance approaches for the instrument within both the individual examples and the overall theoretical foundation of each section.

The presence of musical analysis in these chapters is in accordance with the methodological approach for practice-led research as outlined by Nelson and Andrews (2003). There currently is no standardised system for world music analysis and no consensus on the methodology that should be undertaken to do so. In their attempts to formally analyse world music, Arom and Martin suggest 'World music thus seems to be different from most other genres of commercial contemporary music in that it cannot be characterized formally other than by its heterogeneity' (Arom and Martin in Tenzer and Roeder 2011: 402). With this in mind, this section analyses the new repertoire for the tabla as it relates to the most relevant, fundamental elements from the various intercultural musics that constitute the music in this project. Given the diversity of musical elements prevalent in the chosen genre of world music, the broad categories of melody, harmony, and rhythm were considered best suited to cover the analysis of the new repertoire. Given the intercultural setting, the analysis references and contrasts the new musical approaches applied on the tabla with Western musical approaches such as chordal harmonic function, Eastern approaches such as description of modes and traditional Indian approaches related to the existing repertoire.

As this research centres on contemporary tabla repertoire performance, the analysis does not include discourse on entire compositions or matters that do not relate directly to the performance of contemporary tabla repertoire. Given the limited space, this method was considered the most effective way to communicate as much of the new repertoire and ideas presented in this project as possible. In this approach, each of the new components of the repertoire are theorised and the practical application of these is examined through

musical analysis of the supplied recordings. Conversely, in the given space, an analysis of complete works would contain much information that is not directly relevant to the new repertoire for the tabla at the expense of important information and examples that pertain directly to the focus of the research. Consequently, this section includes the theoretical foundations for the new repertoire alongside musical analysis of its application in contemporary world music ensemble settings<sup>38</sup>.

The analysis includes musical notations in the standardised form of Western staff notation. In order to assist this analysis and in attempting to integrate the tabla within this intercultural setting the tabla parts are notated in a hybridised form that includes both Western staff notation and tabla *bol*s. As previously indicated in the review of tabla notation systems, this notation system includes a number of specific elements that assist in generating a more effective notation system for the tabla. Many of these were originally designed during my Masters research and have been modified here to suit this particular application. Excerpts of the notations are included throughout the written component and the complete notations are provided in the scores component of the research portfolio.

The particular design features of this system are as follows: pitch and harmonies are indicated in standardised Western staff notation. Rhythm is also indicated in staff notation in order to establish a higher level of rhythmic specificity than is offered in any of the alternative systems. The notes to be played on the tabla are indicated by the standardised system of tabla *bol*s. Contrary to the notation system for lyrics which are located beneath the staff, the tabla *bol*s here are located above the staff. This is intended to reflect the importance of the *bol*s in the notation and to assist in more fluent reading. Further to this, the beams in the tabla notations are always downward facing to assist in visual focus on the *bol*s. The specific font (Kabel) is used to assist in differentiation of the particular *bol*s used in tabla notations, such as the ‘*ā*’ and the ‘*ē*’ appearing clearly different. A specific spelling system clarifies the *bol*s in the repertoire that have more than one possible note. Maintaining the tradition of the spoken *bol*, the spellings are designed so that the pronunciation of the note remains the same while the spelling differentiates the note to be performed. For example: *dhin*, *dhiin*, and *din*. Each *bol* is defined in a legend prior to the

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<sup>38</sup> As Nelson suggests: ‘The purpose of critical reflection in a PaR context is to better understand and articulate – by whatever specific means best meet the needs in a particular project – what is at stake in the praxis in respect of substantial new insights.’ Nelson (2003: 60)

notations that includes photographs and descriptions to clarify inconsistencies of *bol* pronunciations and spellings. Bracketed lines underneath the notations have been employed to indicate *bol* inversions<sup>39</sup>. Where the tabla *bol*s are vocalised, they are indicated on a separate staff as sometimes they are vocalised only without playing, other times simultaneously while playing the same *bol*, and other times they are vocalised while playing different *bol*s. The remote hi-hat that is played by the tabla player with the knee in this music is also represented on a different staff to avoid any confusion.

As a medium for documenting music, any written form, including Western staff notation, has many inherent limitations. Nelson suggests representing his South Indian percussion music in this way would be ‘at best culturally dissonant and at worst misleading’ (Nelson: 2008: 8). While I do not consider staff notation a perfect medium for notating tabla music, or music of any kind, written notation is a standard component in most Western musical settings and the hybridised system implemented here presents accurate tabla notations in the standardised notation of the West where the impact of this research is intended. The hybridised staff notation presented here is intended to assist the fluent interpretation and analysis of the melodic, harmonic, and rhythmic aspects of the music as well as reflecting the intercultural approach employed in this project.

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<sup>39</sup> *Bol* inversions are discussed in detail in Chapter Eight: Rhythm.

## CHAPTER FIVE: Research Design and Method of Enquiry

### 5.1 Practice-led Research

This practice research employs a methodology identified by Smith and Dean (2010) as a cyclic web of practice-led research and research-led practice. There are a range of contested terms in this field that describe the type of research presented here: practice-based research, practice-led research, practice-as research, and artistic research. Throughout the written component, I preference the term ‘practice-led research’, as I feel it best describes the hierarchy in place here. I consider this project to be largely practice-led because the premise of the research is borne of the performance context I am engaged in as a contemporary tabla player in Australia. Further to this, the foundational rationale of the research, the musical experimentation, and musical requirements of the tabla in contemporary music, have been *led* by my professional *practice* over the past two decades.

Smith and Dean’s model describes a process where creative activity and academic research work together in mutually informing ways, producing knowledges in both areas in turn, in an iterative cycle web (ibid: 19). As per Smith and Dean’s model, neither of these processes take preference in terms of sequence or priority. In this research, it is an interplay of elements of: improvising music (creative activity), new compositions (practice-led research), reflection on compositions in relation to current tabla repertoire and published research (academic research) and new compositional ideas informed by the academic research (research-led practice). At any stage of the process, these elements led to different points of the web; for instance, at times creative activity led to the creation of new compositions, at other times it led to academic research on the musical elements engaged during creative activity. Each of these stages in turn led to different points in the process. In this way, the research methodology undertaken in this project was both cyclical, and different each time, as represented in Smith and Dean’s model below.



Figure 6. Practice-led Research and Research-led Practice Model (Smith and Dean: 2009)

Despite the mutually informing nature of the project, it was necessary at specific moments in the research to conceive the final compositions as either practice-led research or research-led practice. Works composed to exhibit a specific musical outcome on the tabla, such as the performance of an entire melody, were constructed in the research-led practice method. Other works that were borne of creative practice and later analysed for the musical elements performed on the tabla in relation to the current repertoire, are better identified with the practice-led research model. As an interesting example, two compositions that ultimately convey the melodic potential of the tabla engaged different research methods. The composition *Sans Frontières* engaged research-led practice specifically to create a composition in which the tabla performed the entire melody. While the composition *Shifter* engaged practice-led research in that it was composed during creative activity and later analysed to have achieved the same research outcome. Each of these methods ultimately informed and benefited the other in the ongoing, cyclical research process.

The compositions were composed with varying degrees of improvisation, including three completely improvised works (*Jojo*, *100 Days* and *Sweetwater*). The improvisational parameters used in performance that directly relate to this research are discussed in the analysis section. All of the works were recorded in recording studios by professional musicians. Half of the works were

recorded live in the studio by ensembles, while the other half were separately tracked by each individual musician with guide tracks.

The research-led component of this methodology identifies the musical conventions applied within the traditional repertoire in order to contextualise the new performance parameters investigated in this research. As this aspect of the research pertains to the oral Indian tradition, I have drawn on my fieldwork research and musical training in India with tabla master Pandit Anindo Chatterjee through the period 1997 – 2013. This training included literally hundreds of hours spent with my teacher studying and learning both the practical aspects and the theoretical components of the music in the oral tradition. While it is not possible to directly quote the information and understanding of the traditional music received in this manner, it has a profound impact in the way it which it informs the project. In addition, my performance experience in Australia, India, and abroad is referenced, as well as published recordings, books, and theses on the role of the tabla in a traditional context.

The practice-led method applied here assists in establishing the conceptual framework of new musical possibilities for the tabla, and ultimately substantiates the feasibility of the approach through practical examples. It provides a multifaceted research project that employs recorded music in conjunction with explication and critical commentary in a written component. The combination of practical experiments, analysis, and commentary provides a more rigorous approach to this project than may have been provided by purely written research. In this method, clear results are presented in the form of recorded music. The music demonstrates new avenues for the expansion of tabla repertoire functioning effectively in a musical ensemble in an international context. In line with Herndon's suggestion, the practical component provided here represents a fundamental aspect of music research which ensures that outcomes include 'music music' as well as 'speech music' (Herndon 1974: 246).

An important component of this research-led methodology examines a range of unconventional performance elements on the tabla in a variety of musical settings. To this end, the works were composed for a range of different instrumentations, employing a variety of musical elements from diverse musical cultures. The purpose of this method is to convey the adaptability of the instrument for application in a range of contemporary musical settings. If the compositions were created for a fixed instrumentation, in a single genre, the research would prove the suitability of

the instrument in that ensemble and genre. The method applied here instead intends to convey the adaptability of the instrument within the diverse musical settings in which it is engaged today. Many musical settings such as those presented in the recordings have arisen as part of my professional career as a tabla player, largely performing outside South Asia. In that role, I regularly play in musical settings that, due to the nature of the music, require the performance of unconventional musical elements to appropriately navigate the music. In many ways, this research project may be considered a necessary reaction to the musical environments in which the tabla is performed outside South Asia today. While the research outcomes presented here have been created within this particular research environment, many of the initial ideas and insights into contemporary tabla performance have been informed and tested in a range of ensembles and musical settings over the past two decades. This method of applying unconventional elements in the tabla parts in a variety of ensembles and genres over many years of performance has proven highly informative in refining the ideas presented in this research.

While the practice-led methodology applied here necessarily involves myself as a creative practitioner, the primary focus of this research concerns the repertoire of the instrument. The most valuable contribution and reach of this research is the documentation of new musical elements and roles performed on the tabla in contemporary world music ensembles. The project has been conducted through my eyes, or ears as it were, and through my own creative process, for the stated purpose of expanding beyond the traditional lexicon of the instrument.

While many practice-led research projects are auto-ethnographic in nature, focusing on the creative process of an individual, this research instead attempts to focus on expanding the repertoire of the instrument. This goal is necessarily achieved through the experience, creativity, and music of a performer. Yet, the main focus of this research is beyond the endeavours and story of my own artistic practice. The primary concern here is the larger implications for the instrument and its repertoire, that are ultimately borne of this practice. Accordingly, the written component concentrates on the instrument and its repertoire above the performer.

The next section provides specific details regarding important aspects of the research design and methodology, including the specific compositional approaches, the particular performance techniques, configuration of the instrument, and construction innovations employed to enhance the outcome of the performed music and, the musical influences that have informed the project

## 5.2 Creating Tabla Without Borders

In order to clarify the intent of the music in this project, the following section identifies and discusses the musical genre applied within the compositions, the terminology associated with the genre, and a rationalisation of this genre choice in a Western context. The section also outlines the musical influences that have assisted in the creative development of this project and describes the musical and artistic intention of the work. The section is concluded with a detailed examination of the techniques performed on the tabla in this project along with explanations of modifications made to the configuration and construction of the instrument.

### 5.2.1 Stylistic Identification and Terminology

The following section identifies the genre in which the music in this research is presented in order to assist the listener to contextualise the recorded music in this study. This research concerns the role and musical functions of the tabla in a contemporary, intercultural musical context. Accordingly, the music created to exemplify this context has been composed with a heterogeneous collection of musical elements derived from diverse musical cultures. While there exists a plethora of terms to describe this type of music, and no shortage of debate on the topic<sup>40</sup>, the term *world music* is still today the most widely recognized and accepted term in the music industry to denote the genre of music presented in this research, that incorporates musical devices, themes, and ideas from diverse musical traditions of the world.

There is a current debate regarding the definition and limitations of the term ‘world music’, much of which is based in the miss-perception that the term was coined in the 1980s as a marketing tool<sup>41</sup>. The term was in fact originally applied in the 1950s in the university system by ethnomusicologists<sup>42</sup> and it was only later adopted by the music industry in 1987 as the standard classification for mixed cultural and non-Western music<sup>43</sup>. The subsequent popular recognition of the term is evidenced by specific world music charts and awards added in the 1990s<sup>44</sup> and the fact that ‘By 1991 the market share of world music was equal to classical music and jazz’ (Brooke: 1991:

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<sup>40</sup> Byrne: 1999, Farrell 1997: 201, Connell and Gibson: 2004

<sup>41</sup> Nuttall 2011: 28 also addresses this issue.

<sup>42</sup> Specifically, by Mantle Hood at UCLA (Solis 2004: 48). Further evidence of the term in academia prior to the 1980’s is provided in book titles such as ‘*Some Aspects of the History of World Music in the Twentieth Century: Questions, Problems, and Concepts.*’ (Nettl: 1978).

<sup>43</sup> The term was formally adopted by record companies, concert promoters and broadcasters in 1987 to assist sales of non-Western music in Europe. (Sweeny 1991: ix)

<sup>44</sup> Billboard magazine first released a world music chart in 1990, the Grammy Awards added a world music award in 1991 and the ARIAs in 1995.

22). Today, there is no other term as widely accepted and recognised in the music industry to reference music with a heterogeneous collection of musical elements derived from diverse musical cultures. The term is employed here as the music in this research incorporates musical elements and devises derived from Indian, Middle Eastern, Asian, and Western music.

Originally, the term referred to traditional eastern music such as Indian or Iranian music. As societies and music have progressively globalised, the term world music now often references cross-cultural music. Today, in educational settings and much of the music industry, Indian music is referred to as Indian music, Iranian music as Iranian music. Consequently, the term world music currently addresses the idea of an international, or internationalising music; a music that is constantly in the state of challenging borders and breaking down barriers and boundaries. Amid the political and social issues in a globalising world, what is happening musically is a blurring of those barriers in the creation and evolution of a music of the world in which we live, without borders.

### **5.2.2 Contemporary International Context of the Tabla**

While it may have been possible to complete this project in a number of different musical styles, world music was considered the most appropriate and effective genre for contextualising the new modalities for the tabla explored here. The diversity of musical elements prevalent in world music allows for a broad examination of the role that may be played on the tabla, and the musical elements that may be performed on the tabla, in integrating the instrument in a diverse variety of genres.

In India, the musical context for tabla players is largely situated within the musical conventions of the many vibrant traditions in which the tabla is traditionally performed<sup>45</sup>. While it may be possible for a tabla player in India to dedicate their career to performing and teaching the traditional repertoire of the tabla, performers outside the South Asian region are inevitably involved in diverse musico-cultural settings. As Nuttall notes, ‘Classical Indian music enjoys a limited but faithful audience world wide. As such tabla players (South Asian and others) actively search out alternative musical contexts. It is these newly formed alternative spaces where tabla is being re-invented as a “tradition with a language which is more universal” (Nuttall 2011: 27).

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<sup>45</sup> Bollywood music, which draws its influence from a variety of Western and eastern musical influences is an exception to the rule in this case.

### 5.2.3 Musical Influences

The following section identifies the musicians, genres, and musical settings that have influenced the artistic outcome of the recorded music in this project. The music composed in this research has been informed by almost two decades of intercultural musical collaborations, largely in Australia, with musicians from a range of genres. This includes tours, concerts, and recordings with jazz, pop, rock, orchestral, heavy metal, and world music ensembles<sup>46</sup>. In formulating and applying contemporary approaches to the tabla in an ensemble setting, my trio ensemble Fine Blue Thread, has provided the most enduring and generative setting<sup>47</sup>. The ensemble has been performing and recording as a cello, voice, and tabla trio since 2007. The performed music is situated in the genre of world music and has notable Indian, Indonesian, and Western influences<sup>48</sup>. The ensemble has attempted to create an integrated world music sound through creating music that is an amalgamation of each individual's diverse Western and Eastern musical influences, while intentionally avoiding idiomatic musical devices and repertoire that is traditional to each instrument. My research has been further informed by over a decade of running the World Music Orchestra and the World Music Ensemble at Monash University. These ensembles combine Eastern and Western instrumentation in a creative and contemporary setting that employs a diverse range of non-Western music.

Along with these professional musical projects, my approach to the tabla has been informed and influenced by my *guru* in India, Pandit Anindo Chatterjee, with whom I have studied traditional tabla repertoire since 2005. The traditional training I received in the many years I lived in India was a rigorous discipline that included much time dedicated to the virtuosic aspects of the traditional repertoire. This study has deeply influenced my playing through an extended exposure to the technical virtuosity required of tabla performers and the musical possibilities that are borne of those abilities. My creative tabla work has also been influenced by over twenty years of listening to tabla players Ustad Zakir Hussain, Trilok Gurtu, Pandit Swapan Chaurduri, Ustad Ahmedjan Thirakwa, Ustad Sabir Khan, and many other great tabla players. These musicians have increased

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<sup>46</sup> For instance: Jazz influences may be found in the chord progressions and solos in the recordings (*In a Milky Way*), pop influences in some of the shorter pieces with verse - chorus forms (*Blueprint*), rock and heavy metal influences in the riffs and ostinatos performed on instruments that do not usual play riffs, such as the cello (*The World of Birds*).

<sup>47</sup> The instrumentation and members of Fine Blue Thread are Sam Evans (tabla and percussion), Helen Mountfort (cello) and Ria Soemardjo (voice and viola). Biographical data, discography, and concert documentation can be sourced from [www.finebluethread.com](http://www.finebluethread.com)

<sup>48</sup> Fine Blue Thread's music was in 2010 featured as an example of modern Indian music in a BBC compilation CD alongside many traditional masters of Indian music (Ravi Shankar, Ali Akbar Khan, Hari Prasad Chaurasi, Zakir Hussain): *A Beginners Guide to India: CD 1 – India NOW*, Nascence Records (2010).

my understanding of the technical potential of the instrument, the vast repertoire to which it is heir, and the extensive musical capabilities of tabla drumming.

World music artists such as Dhafer Youssef, Rabih Abou-Khalil, Stephan Micus, Anouar Brahem, Antonio Forcione, Erkan Ogur, Jonas Helborg, Paco De Lucia, Renaud Garcia-Fons among others in the world music genre have had an influential effect on my creative approach to the value and importance of space, texture, rhythm, and diverse instrumentation.

#### **5.2.4 Compositional Approaches, Intentions, and Aims of the Work**

The following section outlines the compositional approaches, intentions, and aims of the music developed in this research in order to assist the listener to evaluate the efficacy of the music as the medium of that research. It identifies the compositional approaches applied to maintain a focus on the tabla and to create contemporary world music, outlines a common set of musical practices applied in the compositions as well as describing the performance techniques and new configuration of the instrument.

##### **5.2.4.1 Tabla Centred Music**

The music created for this research project is intended to serve the purpose of highlighting new roles and musical elements performed on the tabla in contemporary music. These ensemble-based compositions have been specifically designed to reflect, underpin, and assist the expression of the new musical parameters, such as melodic and harmonic roles, as well as the artistic and stylistic considerations of the tabla parts conceived in this research. As such, the melodic, harmonic, and rhythmic aspects of the ensemble pieces are composed according to the part to be played on the tabla. Contrary to both traditional and standard contemporary practice, the mode and tonic in the compositions are defined by the pitches of the tabla. Consequently, many melodies in the works contain only the three or four pitches available on the tabla. Likewise, the harmony in the compositions is designed to be integrated with the specific tabla pitches performed in each piece. The rhythmic phrasing and overall rhythmic structures in the music have also been composed to serve the specific needs of the tabla parts to ask the research questions they instantiate.

Throughout the creative process of writing music for this purpose I consistently found that music that was rhythmically dense, harmonically complex or melodically detailed detracted from the purpose of this research. Providing listeners with the opportunity to focus on the tabla in the

music requires a particular compositional approach: that is, music that provides rhythmic, harmonic, and melodic space for the tabla. Given the limitations of pitch in performing melodic tabla parts, I discovered that music composed with complex melodic structures distracted listeners' attention from the tabla parts that are the focus of the research. While it may make enjoyable music for a listener, this is not the purpose of the project. The purpose of those pieces is to highlight the melodic capabilities of the tabla. The most effective method to this end has proven to be decreasing the melodic and harmonic density of the music to allow space for the tonal aspects of the tabla. Harmonically complex passages in the musical experiments conducted during the research had the same effect. The harmonic role of the tabla that is the focus of those pieces is commonly lost to the listener due to complex referent material. That is not to say the tabla cannot function in harmonically complex environments, it certainly can, but in this case, to foreground the research imperative, it was necessary that the desired focus on the tabla not be lost in complex harmony.

Listeners may also note a distinct difference to the standard relative volume of the tabla in the recordings, referred to by musicians as 'the mix'. In the majority of recorded environments, percussion instruments are mixed lower than melodic and harmonic instruments. As the tabla is performed melodically in my work, and is also the focus of the research, it was considered appropriate to have the tabla placed higher in the mix in these recordings even though it is conventionally part of the rhythm section.

#### 5.2.4.2 Contemporary World Music

Historically, early world music collaborations tended to include much traditional referent material, and it was common practice to combine diverse traditional musical repertoires. Performers commonly played their own traditional repertoire, phrases, and musical elements, together with musicians from diverse cultures doing the same. As Farrell details, 'The sitar plays lines idiomatic to Indian classical music, while the jazz musicians stick to jazz phraseology' (Farrell 1997: 192). Today, openings exist in musical practices within the current generation of world music performers where traditional repertoire and idiomatic musical devices are not included in the music. Much of the world music I have played during my career has utilised this approach as an aesthetic preference. In this project, I have intentionally avoided culturally iconic musical references in an attempt to create a coherent contemporary sound with music that includes instrumentation and elements from a diverse variety of musical settings. I consider swing tunes, II-V-I chord progressions, standard Indian *thekas*, *kaidas*, and *tibais* examples of culturally iconic musical

elements. I have tended to avoid complex and functional harmony as a musical tool for the same reason in these compositions. I have also avoided strict adherence to a rigid form of raga or similar modal framework for the above reasons. Similarly, I have avoided repeated culturally specific forms such as the *alap-vilambit-drut* form from Hindustani music or the head-solo-head jazz forms or verse-chorus forms of Western pop music.

#### 5.2.4.3 Common Set of Musical Practices

The foundation of the music in this research may be considered to contain a common set of musical practices, detailed below. The music commonly includes diverse Eastern and Western instrumentation: tabla, *tar*, slide guitar, oud, electric guitar, bass, piano, cello, voice, clarinet, sax, flute, shakuhachi, and a variety of Eastern and Western percussion. Drawing on my extended experience in Eastern music, a significant level of importance has been placed on ornamental phrasing, texture as an expressive device in the music and modal improvisations. The compositions allow for different elements of improvisation, most commonly during solo sections, but also in the accompanying parts of the main body of the music where appropriate. I am indebted to the performers for this aspect of the music as in many cases, the improvisations have a substantial effect on the final work. The music commonly includes both modal and chordal elements with chordal structures that tend to follow after unison melodies. The music also includes an emphasis on providing melodic, rhythmic, and harmonic space to allow a focus on the tabla parts. The tabla parts have melodic and harmonic elements and also include moments of virtuosic tabla playing. However, instead of focusing on technical virtuosity, the creative focus of my music in this project has been on expanding the musicality of the performance practice of the instrument. After many years of performing the complex and virtuosic repertoire of traditional solo tabla in India and Australia, the creative process involved with this research has been a distinct creative change. It has required creating music with more space and fewer notes. Decreasing the number of notes performed on the tabla has allowed for a longer sustain, which has in turn increased the instrument's melodic and harmonic effectiveness in the music.

#### 5.2.5 Performative Techniques and Configuration of the Instrument

The following section makes important technical distinctions regarding performative approaches to the tabla. It clarifies the technical differences between the tabla playing in this research, traditional tabla playing, and other related Indian percussion instruments.

Rather than changing the fundamental performing techniques in order to produce new tabla music, such as playing with sticks or modifying the fingerings, this research seeks to expand the musical possibilities for the instrument while maintaining the standardised technique. That is, the main innovation presented in this research is the development of new musical elements and roles in tabla playing and does not concern new techniques. In the standardised technique, the instrument is played with independent hands, most commonly with the left hand on the bayan and the right hand on the tabla<sup>49</sup>. The fingerings and technique are entirely different for each drum. Tabla players learn the complex and detailed repertoire for the instrument in this format, with the hands divided between the two drums. This independent hands technique is shared by many other instruments, particularly stringed instruments. Professional tabla players, myself included, spend many years of their lives refining and perfecting the specific techniques performed by each hand.

Further to the traditional technique of the hands, the tabla parts in this research are performed using tabla *bols*: the performative foundation of tabla playing. In the system of tabla *bols*, each consecutive note is built on the fingering of the previous and subsequent notes to allow for speed and fluent phrasing. Tabla *bols* are constructed with sets of individual notes and combined with other *bols* to create phrasing, just as words within language are comprised of letters and combined with other words to create sentences and phrases. Tabla *bols* are critical to flow and phrasing on the instrument, and consequently, tabla performance is not conceived in individual notes, it is conceived in *bols*. There are literally hundreds of tabla *bols*, each created with the division of the two hands on separate drums. It is important to note that tabla *bols* are specific to the instrument rather than specific to the traditional or contemporary repertoire. It is how the *bols* are employed that defines the vocabulary, musical language, and ultimately the repertoire.

As part of this research, the melodic and harmonic potential of the instrument is examined in detail and to facilitate the development of new capabilities in this field, the configuration of the instrument has been modified. The traditional set of two drums has been expanded to comprise up to four drums, each tuned to a different pitch. The new configuration of the instrument is played with traditional standardised fingerings and technique, that is, bayan drum played with the left hand and one of the tabla drums played with the right hand. This integral design element assists the potential reach of the research among existing tabla players by expanding the serviceability of standardised skills. It is the premise upon which this research into new repertoire is founded. In

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<sup>49</sup> In the case of left handed musicians, the drums are switched: tabla to the left, bayan to the right.

order to clarify the new configuration of the instrument along with the particular performance techniques that have been applied in this research, definitions of the instrument and its terminology are provided below.

In a traditional setting, the tabla is defined by a single, treble pitched drum referred to as a tabla and a bass register drum known as a bayan<sup>50</sup>. While the set includes two drums: a tabla and a bayan, it is collectively referred to as 'tabla' in all terms of reference<sup>51</sup>. The traditional tabla, or tabla set, appears below with the tabla drum on the left and bayan drum to the right.



Figure 7. *Traditional Tabla Set*

The new configuration of the instrument applied in this research incorporates multiple pitched tabla and a single bayan. In performance, up to four tabla drums are placed to the right of the performer and played with the right hand. The left hand is dedicated to the bayan. In this way,

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<sup>50</sup> The tabla is also known as a *daya* or *dayan*. The bayan is also known as a *duggi* or *bia*.

<sup>51</sup> Both drums are of equal importance in the performance of tabla playing, even though the instrument is known by the name of only one of the drums.

while the configuration of the instrument has changed, the standard independent techniques for each hand are maintained in performance. Configuration examples are pictured below.



*Figure 8. Tabla Set with Two Tabla and a Bayan*



Figure 9. *Tabla Set with Three Tabla and a Bayan*Figure 10. *Tabla Set with Four Tabla and a Bayan*

There is a growing tradition of contemporary tabla performance using this configuration. Badel Roy, Zakir Hussian, and U-Zhaan have performed with additional pitched tabla in similar configurations in a variety of intercultural musical settings. The additional pitches fulfil a variety of roles in these settings such as reinforcing the tonic, dominant and other important pitches of the pieces or as sound effects. This research attempts to further this development through integrating the pitches in the melodies and harmonic progressions of the music. This role is detailed in full in the following chapters<sup>52</sup>.

### 5.2.6 Construction Innovations

As part of this research, the tuning system in the instrument's construction has been modified. The following section details the research, changes, and improvements made in this endeavour. Tuning on the tabla is a complex and time-consuming task that increases with the number of drums. Unlike a guitar in which each string is tuned from a single point, to tune the skin on the tabla requires equal tension applied via a ten-meter length of strap to sixteen points on the head of the skin. Unfortunately, the traditional construction system for tuning the tabla does not create

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<sup>52</sup> It may be tempting for some to compare the melodic drumming approach in this research to the relatively rare north Indian instrument known as tabla *tarang*. It should be noted that tabla *tarang* omits the important bayan drum, is performed with an entirely different technique that excludes the majority of strokes on the tabla, and does not employ tabla *bols*; the foundation of phrasing on the instrument. While this research and tabla *tarang* both employ melodic drumming approaches they are only related in the way the guitar is to the harp; that is, they share the same construction materials and some techniques, yet they are fundamentally different instruments.

a consistently stable pitch. Once in tune, the instrument may slip out of tune very quickly and it is common for tabla players to re-tune while performing. Just as Indian sitars are still tuned with wooden pegs rather than machine heads as on most contemporary string instruments, the strapping on traditional tabla is still constructed with camel or buffalo hide to maintain the tension on the drum head. As an organic product, the ten meters of hide continually stretches over the life of the instrument. As it stretches, the amount of tension on the drum head decreases and the pitch of the drum descends. The hide is also affected by humidity and temperature, which also in turn affects the tuning.

As this research incorporates multiple tabla in performance, which would require constant and lengthy re-tuning with the traditional construction system, a more stable tuning system was investigated. Instead of the traditional hide straps, a variety of custom-made polyester strapping systems were investigated for the instrument. As part of these experiments, the bottom ring on the tabla set, which is also traditionally made from hide, was replaced with a custom-made metal ring. This ensured a greater consistency and stability to the overall tuning. I am not the first to try to modernise the tuning systems for the tabla, there have been many attempts to create similar systems with a range of materials, including nylon, cotton, polyester, and kevlar strapping variants over the past decade<sup>53</sup>. However, none of these have yet been widely adopted or standardised. The system implemented in this research is another attempt in this developing field. The particular system used here was developed with a polyester material custom-made through an industrial webbing supplier in Melbourne. Experiments with numerous sizes, thicknesses, and colours were conducted over a three-year period in an attempt to find a solution that created a more stable tuning, required less and easier maintenance than the laborious camel strap, and that maintained as much of the aesthetic appeal of the instrument as possible. These changes to the tuning system of the drum did not have an effect on the sound, timbre or sustain of the drum. The new strapping system compared to the original hide strapping is pictured below.

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<sup>53</sup> Roda (2015: 331). For other examples of modernised strapping systems see: [www.transtabla.us](http://www.transtabla.us) and [www.tabla-vermont.com](http://www.tabla-vermont.com)



Figure 11. Construction Innovations: Polyester Strapping (left) and Traditional Strapping (right)

As well as being utilised on my own instruments during the research period, this system has been trailed and refined on over two hundred drums through the Melbourne Tabla School. It is beyond the scope of this research to include a documented formal research and evaluation of the system. Nonetheless, through my experience, this system undoubtedly maintains the tuning more consistently and requires less maintenance than the traditional hide. Most importantly, the instrument requires re-tuning about half as often as the traditional hide tuning system. The new strapping also, on average, takes half the time to change the skin with a pre-made skin and requires complete re-tension once every two to three years as opposed to once a year with the traditional system. The new strapping system meets the criteria for reducing tuning time without additional cost and without sacrificing the tone, sustain or visual aesthetic of the instrument. These improvements to the consistency of tuning on the instrument greatly assist the practical useability and performance of the multiple tabla configuration in this research. Formal research and documentation into this topic would be a valuable resource for tabla players in the future.

## CHAPTER SIX: Melody

This chapter examines the melodic potential of multiple pitched tabla in a contemporary ensemble setting. As discussed in detail in Chapter Three, the traditional tabla set includes a single pitched tabla drum. The function of this pitch in the existent repertoire is dronal, underlying and reinforcing the tonic. Intercultural music of the last sixty years includes examples of tabla performance in which the pitched component of the instrument has occasionally been expanded to include additional pitches<sup>54</sup>. This configuration is applied in this project in order to navigate the variety of musical conventions in this intercultural setting. This chapter describes the way in which this research attempts to further this melodic expansion of the tabla by establishing a method of tabla performance in which the multiple-pitch instrument is integrated within and contributes to the melodic content of contemporary music. The video of the composition *Sans Frontières*, from the album *The Tabla Project*, created in this project provides an example of melodic tabla performance in the multiple-pitch configuration<sup>55</sup>.

In order to provide a thorough investigation of the musical outcomes attempted here this section presents musical analysis of the melodic approaches for the tabla from the relevant sections of recorded music in this project. The chapter is organised as follows: first, the nature of tuning and sustained pitch on the instrument are detailed in exploring the relative value of pitch on the tabla in ensemble settings. Second, the melodic capabilities of the new multiple-pitch configuration and the resultant compositional approaches in contemporary ensemble settings are considered. Third, compositional examples that include entire melodies, melodic ostinatos, and melodic fragments played on the tabla are detailed with a case study in an improvised recording setting.

### 6.1 Pitch and Tuning on Tabla

The tabla is a tuneable instrument of absolute pitch and one of the few membranophones in the instrumental category of pitched percussion. The instrument has a long sustaining pitch of definitive clarity made possible by a black paste, known as a *syahi*, that is applied on the top of the tightly stretched goat skin during construction (Roda: 2015, Rossing: 2000). For many tabla players, the sustain of the note is of primary importance in their sound production, unlike many other drums where the percussive effect of the note is the primary focus. This quality of the tabla to

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<sup>54</sup> These are discussed in more detail in the contemporary tabla recordings review in Section 2.3.

<sup>55</sup> Watch: <https://youtu.be/DFxmcXmQVFI>

produce a definitive, sustaining pitch is an important component of the musical and aesthetic appeal of the instrument. It is a rare asset for membranophones and is an important aspect of research in this project. These two distinctions; the inherent, clear and sustaining pitch of the tabla and the addition of multiple pitches, has expanded the melodic capabilities of the instrument and enabled a detailed examination of its pitched-based potential in an ensemble setting during this research.

## 6.2 The Melodic Tabla Set

The pitched capacity of the tabla enables great potential for the creation of a form of melodic drumming. In a contemporary setting, it may be possible to utilise the instrument in both melodic and percussive roles. While the inherent limitations of pitch quantities and articulation on the instrument constrain the melodic potential to the extent that it may not be possible to play a complex, broad palette of melodic expression, this research nevertheless successfully employs a range of melodic approaches. These approaches may be considered in three categories: the performance of entire melodies, melodic ostinatos, and melodic fragments. Each of these approaches have been applied in a range of musical settings during this research and are detailed below with musical examples.

One of the founding conditions here is the use of standardised traditional technique in the context of contemporary tabla performance<sup>56</sup>. In this method, the left hand is dedicated to the lower register bayan drum, the right to the higher register tabla. In this investigation, I found that melodic content on multiple tabla drums was more effective than that on multiple bayan drums for a variety of reasons. When required, the pitch and sound of the bayan may be adjusted during performance and in most cases, this alone negates the use of multiple bayans. Also, in practical application, the bayan is most often played with sustain. The register of the bayan is between one and a half, and two octaves below middle C, the same register as the lowest notes on an electric bass. Multiple sustaining pitches in this register creates an incoherent lower register in the music. Finally, during the research process I discovered traditional tabla technique easily adapted to playing multiple tabla drums but multiple bayans always felt very awkward. I suggest this is mainly due to the nature of the playing technique on the bayan that requires constant contact between the palm of the performer and the skin of the drum to continually adjust the sound. Breaking that contact also

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<sup>56</sup> Detailed reasons for this choice are outlined in Section 5.2.5.

broke the flow of the playing in my experience. For these reasons, I have not included the bayan drum as part of the melodic investigations in this research.

In order to play the tabla with the standardised technique for the instrument, the number of tabla drums in the multiple-pitch set has been limited to four in this research<sup>57</sup>. Any more than this number negates the use of standardised technique due to the size and layout out of the instrument. This constraint limited the number of pitches available for melodic contribution on the tabla to four. In turn, this generated a new compositional environment that is detailed in the following section.

### 6.3 Melodic Approaches for Tabla in Ensemble Music

A drummer that contributes to the melodic framework in a small ensemble setting is not only a new innovation for tabla, it is also a rarely achieved component of small ensembles in any form of music. While the vast majority of ensemble music throughout the world includes pitch organisation and melody, very few ensembles include drummers that contribute to this framework<sup>58</sup>. The musical potential for this innovation may well be profound. For instance, an ensemble with bubbling and driving drumming parts that also underpins the chord progression may be a possibility with a multiple-pitch tabla set. While there are many examples of pitched percussion in ensembles, including marimba, vibraphone, steel pans, and the many *gamelan* instruments of Indonesia, the aesthetic effect of these instruments is vastly different from that of a drum. The rhythmic motion provided to the music through drumming supplies an entirely different musical effect. This research investigates the possibility of a musical role that contains the functionality and percussive effect of drumming combined with melodic and harmonic contribution. There are a multitude of research possibilities in the field of melodic tabla drumming. Due to the constraints of time and space, this aspect of the research has been limited to the three areas mentioned above: entire melodies, melodic ostinatos, and melodic fragments. The harmonic implications of the melodic content applied here are discussed in the Chapter Seven: Harmony.

### 6.4 Challenges in Melodic Tabla Drumming

In attempting to perform melodic tabla drumming, the practical component of this research has uncovered a variety of technical challenges that have influenced the final outcome. The main

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<sup>57</sup> The standard performing technique of the instrument is detailed in Section 5.2.5.

<sup>58</sup> While other drums, such as congas, bongos, and tom-toms, have fundamental pitches, they are not ordinarily tuned to the key of each piece, nor do they reference specific notes within the melody or harmony. In-so, their pitched contribution may be considered timbral rather than melodic.

challenge is in maintaining the groove<sup>59</sup>, feel<sup>60</sup>, and motion<sup>61</sup> of a drumming role whilst moving the hands across different drums to play the notes of the melody. This difficulty is partly due to learning the instrument in the traditional model of one hand per drum. It is also a function of primary training in a rhythmic role rather than a melodic role. In many cases it is possible to perform part of the groove with the left hand on the bayan drum while playing the melody notes with the right hand. In other cases, it is possible to play small parts of the groove on both drums between melody notes. Learning this new approach has taken time and is ongoing.

The overall coherency of the compositions has benefited from the alternation of the tabla between the role of playing entire melodies, and another more rhythmically orientated role. For this reason, the tabla part performs entire melodies in only some sections of the music and is elsewhere dedicated to other musical functions. While the compositional approach of the tabla performing melodies in the music proved successful in most cases, in some it was not. The melody in the composition *Into the Unknown* (track 13, *The Tabla Project*)<sup>62</sup> was composed with a specific set of pitches to be performed on the tabla in unison with the guitar. During the creative rehearsal process, the guitar part was performed with effects and sustain that generated a flowing and spacious sound during the melody with minimal attack on the notes. During the mixing process, the sharp attack of the tabla pitches did not assist the melodic intention of the work. The tabla melody was ultimately removed from the piece. This instance assisted in defining some of the limitations of the instrument's melodic capabilities in compositions that require a soft and slow attack of the note.

The tempo of the melodies performed on the tabla also presents challenges in performance. The main pitched notes played on the tabla to produce melodies (referred to as *tin* and *na*) require the ring finger of the right hand to be held down on the inner skin (*sur*) while the index finger strikes the outer skin (*kinar*)<sup>63</sup>. Maintaining the sustaining pitch of these notes when quickly moving from

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<sup>59</sup> Groove in this research refers to rhythmic patterns played on the tabla in order to outline the rhythmic structure of the music. They may be specific short repeated patterns or part of the long rhythmic organisation that is embellished in the tabla part.

<sup>60</sup> Feel in this research refers to overall rhythmic coherency.

<sup>61</sup> Motion in this context refers to the role of the tabla in providing a sense of movement in the music through consistent rhythmic content.

<sup>62</sup> Listen: <https://youtu.be/J6TBcpiV6r8>

<sup>63</sup> This action is similar to fretting and striking a guitar string with one hand, it is difficult to reproduce at high speed. Pictures and explanations of playing techniques are provided in Section 5.2.5.

one drum to another restricts the tempo of melodies to be performed on a multiple tabla set, and in this way, influences the melodic content of the compositions.

Regarding the register of the tabla drums in the recordings, the research revealed that lower pitched tabla drums have a longer, clearer sustain than high pitched drums. The lower pitched tabla are also larger in diameter and have less tension on the drum head and therefore are slower to respond when struck during note production. The lower pitched tabla therefore often better fulfilled harmonic functions and high-pitched tabla better fulfilled melodic functions. These conditions are inherent in the instrument and influenced compositional and performative decisions in this research.

Each tabla drum is a custom-made instrument from professional makers who each have their own particular style and sound. The style of construction is largely regional, but the specific sound of a drum is particular to each maker. In order to present an overall coherent melodic sound, it is important that each drum is in the same style from the same maker. Initially, melodies performed during this research with multiple tabla drums from different makers produced inconsistent sounding melodies. This was due to variable timbres and overtones present in drums from different makers who use dissimilar materials in the construction of the instrument, such as the type and thickness of the skins and the ingredients in the *syahi*. For this reason, all drums in the final research documentation have been custom made in Kolkata by tabla maker Mukta Das.

### 6.5 Performing Entire Melodies

In order to perform entire melodies on the tabla, these compositions were created specifically for the particular number of pitches chosen on the set for each piece. In attempting to create diversity within this limitation, a range of melodies with differing numbers of pitches have been included throughout the works. Some melodies include four pitches, others only three or two pitches. In some cases, the tabla part performed each note of the melody, while at other times some of the melody notes were harmonised. In the initial trial phase of the research, the melodies often sounded repetitive and lacking in diversity due to the limited number of pitches. This issue was negotiated through compensating for the limited number of pitches in the melodies through the use of odd meters and unusual phrasing of the melodies. Also, melodies with the full range of notes that were not possible to perform on the tabla were performed on other instruments and interspersed between the melodies performed on the tabla. It may be noted that while other performers such as Badal Roy and Zakir Hussain have performed with a multiple-tabla

configuration with a bayan (Roy: 1997, Hussain: 2009) as far as this research has uncovered, this is the first documentation of entire melodies performed on the tabla in this configuration.

### 6.5.1 Melodies with Four Notes

*Sans Frontières* (track 5, *The Tabla Project*)<sup>64</sup>, provides an example of a melody with four notes played on the tabla set. The composition is in the key of G minor and the tabla are tuned to A, B<sup>b</sup>, C, and D. As previously indicated, there are a number of compositional elements present in this melody that are particular to melodic composition and performance for the tabla. The odd time-signature (7/8) assists in generating the intentionally percussive and disjointed type of melody that is favourable on the tabla set. In contrast, the unison accompaniment on the *tar* provides the longer sustaining notes that are difficult to produce on the tabla. The tabla part also underpins the rhythmic structure of the piece at the same time as playing the notes of the melody. The excerpt below is the opening melody of the piece.

The musical score is presented in three systems, each with three staves: Guitar (top), Tabla (middle), and Bass (bottom). The time signature is 7/8. The key signature has one flat (Bb). The lyrics are written below the Tabla staff.

**System 1 (Measures 5-11):**

- Measures 5-6:** Guitar: G4, A4; Tabla: G4, A4; Bass: G3, A3.
- Measures 7-8:** Guitar: Bb4, C5; Tabla: Bb4, C5; Bass: Bb3, C4.
- Measures 9-10:** Guitar: D5, C5; Tabla: D5, C5; Bass: D4, C4.
- Measure 11:** Guitar: Bb4; Tabla: Bb4; Bass: Bb3.

**System 2 (Measures 12-18):**

- Measures 12-13:** Guitar: A4, Bb4; Tabla: A4, Bb4; Bass: A3, Bb3.
- Measures 14-15:** Guitar: C5, Bb4; Tabla: C5, Bb4; Bass: C4, Bb3.
- Measures 16-17:** Guitar: A4, Bb4; Tabla: A4, Bb4; Bass: A3, Bb3.
- Measure 18:** Guitar: G4; Tabla: G4; Bass: G3.

**System 3 (Measures 19-25):**

- Measures 19-20:** Guitar: Bb4, C5; Tabla: Bb4, C5; Bass: Bb3, C4.
- Measures 21-22:** Guitar: A4, Bb4; Tabla: A4, Bb4; Bass: A3, Bb3.
- Measures 23-24:** Guitar: G4, A4; Tabla: G4, A4; Bass: G3, A3.
- Measure 25:** Guitar: Bb4; Tabla: Bb4; Bass: Bb3.

Figure 12. Melody in *Sans Frontières* (0:15)

<sup>64</sup> Listen: <https://youtu.be/Z6xKomJDGsw>

A different example of a four-note melody performed on the tabla is presented in the latter half of the piece *In a Milky Way* (track 7: 3:22, *The Tabla Project*)<sup>65</sup>. In this section, the mode has both major and minor thirds with F as the tonic. The tabla drums are tuned to A, B<sup>b</sup>, C, and D<sup>b</sup>. The time signature of each bar alternates between 7/8 and 9/8. The clear pitches of the melodic tabla approach in this section provide contrast to the previous section of the composition that employs a predominantly harmonic approach to the pitched tabla. As the time keeping role is maintained by the bass part, the tabla is initially afforded the rhythmic freedom to play only the melody. Later in the section, the tabla part outlines the overall feel and rhythmic structure as well as the melody. An excerpt from the score appears below.

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<sup>65</sup> Listen: <https://youtu.be/SbvwclyEOw>

14  
Piano  
Bass  
Tabla  
tin tin tin

19  
Piano  
Bass  
Tabla  
tin na na

24  
Piano  
Bass  
Tabla  
tin na tin

30  
Piano  
Bass  
Tabla  
dhin dha ta ke ne te ta dhin te ke ne te tin ke ke tin ke ke tin ke ke tin ke ke

Figure 13. Four-note Melody in the Composition *In a Milky Way* (3:22)

### 6.5.2 Melodies with Three Notes

The composition *Shifter* includes a three-note melody on the tabla (track 3, *The Tabla Project*)<sup>66</sup>. The melody is initially played on the tabla drums in isolation of the bayan drum in order to clearly distinguish the melodic capabilities of the instrument. The bayan is later added to the tabla part as the work develops to provide additional colour, rhythmic phrasing, and to enhance the lower register. Again, the melody is in a cycle of changing odd time-signatures that assists in

<sup>66</sup> Listen: <https://youtu.be/Oaje4opq3Es>



33

Voice

oh oh\_ oh\_oh oh\_ eh\_ ah ah\_ ah\_ey eh\_ hey\_

Vc.

Tabla

dhin dhin tin\_tin te ka te dhin te na tun na dha dhin dhin tin ka te te dhin tun tun

Figure 15. *Tabla Melody in Estuaries* (5:00)

### 6.5.3 Melodies with Two Notes

The last section of *The Valley of Vung* includes a melody with two notes performed on the tabla set (track 4: 3:50, *The Tabla Project*)<sup>69</sup>. The compositional sections that precede this example have a higher level of rhythmic and melodic density in which the tabla plays a largely harmonic role. The example below is taken from the final section of the piece with less melodic and rhythmic density and a greater focus on the textural component of the tabla. The two-note tabla melody is played on the tonic and minor third of the mode in this section of the composition that adds a sharp four to the G harmonic minor of the previous sections. In this long sustaining melody, the focus is on the textural component of the tabla. The notes are struck in a variety of positions on the edge of the drum producing a range of overtones and textural effects that enhance the sparse, reverb heavy section of the work. The notation appears below, the recording provides the best representation of this particular example.

<sup>69</sup> Listen: <https://youtu.be/lxHwM0PNd7k>

159 Shakuhachi feature in G harmonic min#4

Shak.

Pno. Or Similar in G harmonic min#4

Bass

Tabla.   
 dhin dhin dha te dha dhin dhin dha te dha dhin dhin dhin na na na dhin dha na na na na na   
 Or Similar. Played on outer edge of tabla

167 Shakuhachi feature in G harmonic min#4

Shak.

Pno. Or Similar in G harmonic min#4

Bass

Tabla.   
 dhin dhin dha te dha dhin dhin dha te dha dhin dhin dhin na na na dhin   
 Or Similar. Played on outer edge of tabla

Figure 16. Two-note Melody in *The Valley of Vung* (3:50)

## 6.6 Melodic Ostinatos

The music produced in this research benefits from melodic ostinatos performed on the tabla in a number of ways that are detailed in the following section. The melodic ostinatos assist in integrating the instrument in a wide range of ensemble settings and genres. With the ability of the sustaining tabla to sound a range of compositionally integrated pitches it is possible to perform in a wider variety of musical environments. For instance, in compositions where a repeated ostinato is at times played down a semi-tone, the changing tabla pitches may reinforce this movement, rather than oppose it as is the case with a single tabla pitch.

The changing of pitch in the tabla set within an ostinato also allows the other musical parts greater freedom of melodic expression. Other performers may choose not to play the ostinatos at times,

or to add harmonies or counter melodies. These approaches contribute to a more cohesive sounding ensemble with all players moving through the pitch-based component together.

As the ostinatos contain less frequent changes of pitch, and therefore less movement between drums, the technical issues are minimised when compared to performing entire melodies. For the performer, this contributes to maintaining a sense of playing the instrument in the normalised technique, which, in turn, contributes to a more consistent level of musical fluency in performance. Surprisingly, this musically effective approach is not common in contemporary intercultural tabla performance. During this research, and my professional experience I have not been able to identify other tabla performers who are currently performing with this approach<sup>70</sup>.

In *Estuaries*, the tabla ostinato alternates each bar in pitch between C and B in the time signature of 5/4 (track 4, *Blueprint*)<sup>71</sup>. In unison with the tabla part, the cello ostinato alternates the top note of each bar between B and C. The musical effect of the changing pitch unifies the tabla and cello parts to sound a cohesive, moving pitch structure. Without the additional pitch, the tabla part would provide a pedal point sounding a dissonant minor second against the top note on the cello in every second bar. The changing pitch of the tabla instead reinforces the melodic direction and motion of the music.

13

Voice

Vc.

Tabla

dha ge na dhiin ta tun ta tun tun dha ge na dha ge ne dhiin ta tun ta dhiin dhiin dha ge na

15

Voice

Vc.

Tabla

dha ge ne dhiin ne ta tun ghin te te dha ge tun tun dha ge na dha ge ne dhiin ne ta tun ghin te te dha ge dhiin dhiin dha ge na

Figure 17. Ostinato in *Estuaries* (0:50)

<sup>70</sup> Other tabla players using this approach certainly may exist as it must be acknowledged the volume of music in today's market is too vast to claim a complete and comprehensive survey of all intercultural tabla music.

<sup>71</sup> Listen: <https://youtu.be/VbRAiET8hKg>



a space in the music benefits from a melodic component played on the tabla. Melodic fragments are also present on the multiple-pitch tabla set in the music of Zakir Hussain (2009: track 1) and U-Zhaan (2014: track 3). An interesting case study of melodic fragments played on the tabla can be found in the improvised music in the piece entitled *Jojo* (track 1, *The Slide Project*)<sup>74</sup>.

The piece was recorded directly following a brief discussion among the players regarding the mode of the music to be performed. The remainder was entirely improvised<sup>75</sup>. The mode is based on D minor and the tabla pitches are D, E, F, and G. In performance, I chose to utilise these pitches to reinforce the melodies that were played on the two guitars, in the form of melodic fragments. In the example below, the tabla pitches F, E, and D are played in a melodic fragment that reintroduces the original slide guitar melody at the conclusion of the electric guitar melody.

The figure shows a musical score for three instruments: Electric Guitar (E. Gtr.), Slide Guitar (Sl. Gtr.), and Tabla. The E. Gtr. staff begins at measure 32 with a melodic line. The Sl. Gtr. staff is mostly silent, with a few notes at the end. The Tabla staff has a rhythmic pattern with lyrics: 'ghin na ka te re ke te dha dhin na ka tin tin dha dhin na te te na na te te dha ge'.

Figure 19. Melodic Fragment in *Jojo* (3:24)

Melodic fragments are later played on the tabla in the melodic space between slide guitar phrases, to reinforce the mode, and to add melodic colour. As shown in the example below, the additional pitches in the tabla set enable the possibility of following the melodic contour of the slide guitar part. This enhances the cohesion of the ensemble and the melodic contribution of the tabla.

<sup>74</sup> Listen: <https://youtu.be/1q3y9ih49d8>

<sup>75</sup> Throughout the collaborative process as the trio ensemble *The Slide Project*, there has been very little spoken discussion of the music. Often there is no discussion. At times, such as in the piece *Jojo*, broad concepts such as mode and time-cycle are sometimes agreed upon prior to playing. These are usually in place to assure the concert or album has a diverse range of musical elements.

34

E. Gtr.

Sl. Gtr.

Tabla

dha dhin na te te na na te te dha ge ge tin tin ka tin ka ge tin na ka tin ghin na na ke tun na

Figure 20. Melodic Fragment in the work *Jojo* (3:30)

The melodic participation of the tabla is also evident later in the piece during the slide guitar solo. With the additional tabla pitches it is possible for the tabla to play melodic fragments in unison with the guitar through a series of repeated E notes, down to the tonic in D, back to the E and ultimately resolving on the D again as presented below.

Slide Guitar Solo

55

E. Gtr.

Sl. Gtr.

Tabla

dhin dhin na na tre ke dha ge dhin dha ge dhin dhin na na tre ke dha ge dhin dha ge dhin tin na na na na tin

58

E. Gtr.

Sl. Gtr.

Tabla

ge ge ge ge ge ge ge dhin dhin na na na dhin te te ka na tre ke

Figure 21. Melodic Fragment in *Jojo* (5:38)

Performing this improvised music with a melodic responsibility within the ensemble is a new task. As a tabla player, I am trained in the practical application of rhythm in combination with tabla technique. A melodic component in addition to the rhythmic role of a tabla player takes time to develop. Not only for the tabla player, but also in the awareness of the ensembles in which the instrument is played. During improvisation, I found I was not always quick enough to replicate the pitches I could hear performed by other musicians. This was often a matter of technical facility on the new instrument as well as a developing awareness of both rhythmic and melodic roles

required in this new approach. These melodic contributions in the tabla part require changes in the musical roles of both tabla players and ensembles, and therefore require time to evolve and develop. This development may be assisted by considering the pitched capacity of the tabla part in the compositional process as well as tabla players and ensembles members that are willing to make changes to the usual role of their instrument.

### **Conclusion**

In an intercultural setting, ensemble music is not bound by the conventions of Indian music. In many cases the performed music includes musical elements not present in Indian music and therefore demands modifications to the conventions and repertoire of tabla playing. The relationship between the definitive pitch of the tabla and the melodic and harmonic content of non-Indian music may be the most important subject of consideration for contemporary intercultural tabla performance.

While it is possible to perform contemporary music with a single tabla pitch, many such settings benefit from the addition of multiple pitches. As is evident in the music composed in this research the single tabla pitch of the traditional set that, for instance, sounds a sustaining semi-tone above or below the other musical parts has a limited usage. In some cases, this approach may sound as an intended dissonance or chord extension. Though, ultimately, this application is a musical compromise which lacks compositional efficacy. This research considers the addition of multiple pitches performed in a variety of melodic functions as a solution to this contemporary musical issue for tabla performance.

At present, there are no resources, literature or repertoire that consider methods for the application of an expanded melodic palette for the tabla in a contemporary setting. The research presented in this section provides methods and examples of tabla performance in a variety of melodic functions in ensemble music in attempting to address this gap in the literature and repertoire. These have been presented in three categories: tabla performance of entire melodies, melodic ostinatos, and melodic fragments. These new melodic approaches employ a modified design of the instrument that includes multiple tabla pitches. The music is specifically composed to maximise the possibilities that are enabled by this altered configuration of the instrument. The accompanying recordings are the final outcome of this research that provide the musical content discussed in this section.

## CHAPTER SEVEN: Harmony

This chapter describes the way in which this research attempts to establish a method of tabla performance that relates to, and functions within, harmonic settings. The outcome here is the first attempt to establish a set of harmonic roles for the tabla in musical settings in which it may enhance the composition. In order to provide a thorough investigation of the musical outcomes attempted here, this chapter presents musical analyses of the harmonic approaches for the tabla from the relevant sections of the music recorded for the project.

With multiple, clear, and long sustaining pitches, the tabla has the capacity to fulfil a variety of harmonic functions. This section describes numerous harmonic approaches for tabla performance and analyses their practical application in the recorded and notated music in this portfolio. The harmonic approaches discussed here include tabla pitches sounding within the pitch structure and function of chords, a variety of scales degrees, and pedal points.

As traditional Indian music does not incorporate chord-based harmonic structures, the traditional tabla repertoire makes no reference to harmony for the tabla<sup>76</sup>. Nor are there any resources to enable performers to navigate these harmonic situations in non-Indian music. While the tabla has been included in music that contains chordal harmony for over sixty years, contemporary tabla performance has thus far largely ignored harmonic elements within the music, and instead, most commonly maintained a single pitch throughout the music regardless of its relationship with the surrounding harmony (Burhoe: 2005, Mukti: 2016, Roy: 1970, Tool: 2000). Despite the instrument's inclusion in harmonic music, to date, there remains no method, repertoire or role for the tabla in harmonic settings. Based on my professional experience, I believe that this omission partly explains the limited expansion of the tabla in the West where it is currently considered more of a novelty rather than an accepted and integrated instrument. Harmony plays a pivotal role in most Western music, and a tabla set that contributes harmonic function will create possibilities for the application of the instrument in such contexts.

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<sup>76</sup> While Indian music includes a drone over which a melody is played and therefore contains an element of harmony, there is no harmonic movement, function or chords within the music and therefore the current tabla repertoire contains no reference to harmony.

As the pitch potential of a traditional tabla set is limited to a single note, the tonal component of tabla parts in contemporary music is often given little consideration. Most commonly, the pitch of the tabla is superimposed onto the existing harmony of a composition. This method is reflexive and where possible attempts to mirror the melodic and harmonic input of the instruments that supply tonal reference for the tuned tabla. Where the single pitch cannot reflect the surrounding harmony, it is commonly ignored. The compositional method applied in this research is precisely the opposite: the pitches of the tabla dictate the tonal reference for the music. In this method, the music is written according to the tabla, rather than the tabla written according to the music. In conjunction with the expansion of the tabla set to include multiple pitches, this approach has generated a musical context in which the harmonic potential of the instrument may be expanded beyond the current performance practice. In applying this method, multiple new approaches for incorporating the tabla within the harmonic framework of contemporary music have been discovered and documented. These are detailed in the following section.

### 7.1 Pedal Point

The pitch of the tabla and its potential musical effect are foundational to the compositional process employed here. As such, the pitch of the tabla is placed at the harmonic centre of the compositions. This approach deviates from what I consider to be the standard contemporary practice in which the pitch of the tabla is superimposed onto an existing harmonic form.

The application of this new approach results in music in which the tabla may perform multiple harmonic roles, even when sounding a single pitch. Preliminary investigations into alternative harmonic roles for the tabla were conducted with a tabla set in the standard traditional configuration of a single pitched tabla and a bayan. In these pieces, the pitch of the tabla was dedicated to sounding a pedal point through a series of chords. Each of the chosen chords intentionally contained the pitch played on the tabla. In *Tremor* (track 2, *The Tabla Project*)<sup>77</sup>, the tabla sounds a B<sup>b</sup> throughout the first section of the piece with a guitar part sounding a chord progression that contains B<sup>b</sup> in each chord. The chord progression appears below with the tabla pitches represented in black notes.

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<sup>77</sup> Listen: <https://youtu.be/LGHiYkmE3Os>

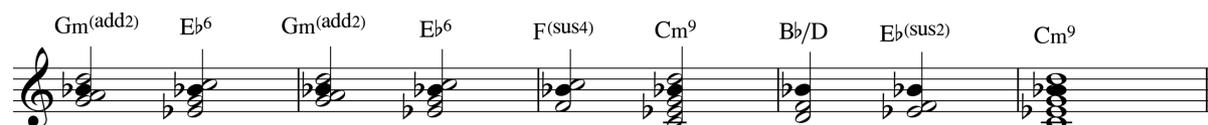


Figure 22. Chord Progression in *Tremor* with B<sup>b</sup> Tabla Pitch in Black

In this approach, the pitch of the tabla is not only present in a series of chords, it also sounds a variety of harmonic sonorities within the chords, each with a distinct function within the music. In *Tremor*, the tabla sounds the pivotal B<sup>b</sup> that defines the minor tonality of the G<sup>min(add2)</sup> chords. The same pitch provides the dominant sound of the perfect fifth in the E<sup>b</sup> chords, followed by the defining tension of fourth of the F<sup>(sus4)</sup>. In the C<sup>min9</sup> it sounds the extended colour of the minor 7<sup>th</sup> and finally the resolving tonic of the B<sup>b</sup>/D. This broader expressive palette extends the possibilities of mood and musical effect for tabla performance. The new musical dimensions enabled by the harmonic content and pitch relationships also transform and expand the musicality of the player. This is in distinct contrast to the traditional repertoire in which the pitch of the tabla always sounds the consonant ‘home’ feeling of the tonic of the mode.

In order to draw attention to this compositional detail in *Tremor*, a set of elaborate tabla phrases alternates with the melody after each cycle of the chords. When the melody is present, the tabla part is simplified and performed at a lower relative dynamic. The tabla dynamic is increased significantly in the absence of the melody to draw the listener’s attention to the shifting influence of the pitch of the tabla. An excerpt from the score appears below. The full score can be located in the scores section of this document.

The musical score is divided into two main sections:

- Section 1 (Bars 11-20):** This section features a **Tabla** part with a rhythmic pattern of eighth notes. The lyrics are: "dha dha ge na na ge dhin na tre ke dhin dha ge na dha ge dhin na tre ke dhet dha ge na dha ge dhin na dhin na". The guitar accompaniment consists of chords: Gm(add2), Eb6, and Gm(add2). A note "Repeat or similar" is indicated above the second measure.
- Section 2 (Bars 21-30):** This section features a **Melody** part for Alto Clarinet and Flute. The lyrics are: "dhin dhin na dha ge dhin na tre ke dhin dha dha na dha ge tun na ka dhin dhin tin". The guitar accompaniment consists of chords: Eb6, F(sus4), Cm9, Bb/D, Eb(sus2), and Cm9. A note "Repeat or similar" is indicated below the guitar part in the first measure.

The score includes staves for Gtr., Tabla, Alto Cl., B. Cl., and Fl. The key signature is B-flat major (two flats).

Figure 23. Alternating Musical Focus of Tabla Part (Bars 11 – 20) (0:30), and Melody (Bars 21 – 30) (1:03)

The composition *Ladu*, provides a different example of a single tabla pitch functioning within a harmonic progression (track 9, *The Tabla Project*)<sup>78</sup>. In this piece, the B<sup>b</sup> in the tabla part sounds in the following chord progression:

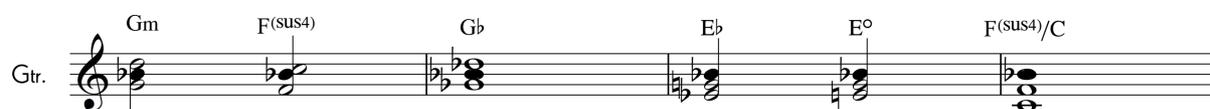


Figure 24. Chord Progression in *Ladu* with B<sup>b</sup> Tabla Pitch in Black

In addition to the harmonic sonorities in the previous example, the B<sup>b</sup> tabla pitch here sounds the bright major third of G<sup>b</sup> and the dissonant flat five of E diminished. In contrast to the traditional repertoire, in this progression the pitch of the tabla never sounds in root position. In this compositional approach, the pitch of the tabla sounds a variety of changing sonorities within the chords, which in turn changes the relative musical colour of the tabla as it progresses through the chords. With the pitch of the tabla incorporated in the chords the entire tabla part is integrated in the music and harmonic structure. The tabla part maintains the focus of the composition through a series of short, syncopated patterns that are subsequently repeated a semiquaver later. This tabla sequence is played over a set of changing melodies. The notation appears below with the repeated tabla patterns bracketed for ease of observation<sup>79</sup>.

<sup>78</sup> Listen: <https://youtu.be/okTG5SN1m-U>

<sup>79</sup> The rhythmic component of this composition is discussed in detail in Chapter Eight: Rhythm

The musical score consists of five systems, each representing a measure from 5 to 10. Each system includes staves for Guitar (Gr.), Organ (E. Org.), Bass (U. Bass), and Tabla. The lyrics are written below the Tabla staff.

- Measure 5:** Chords: Gm, F(sus4). Lyrics: ta tii ke tii na ti ta ke na tii ke tii na ti ta ke na tii ke tii na ti
- Measure 6:** Chords: Gb. Lyrics: dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na ti dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na ti
- Measure 7:** Chords: Eb, E°. Lyrics: dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na ti dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na ti
- Measure 8:** Chords: F(sus4)/C. Lyrics: dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na ti dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na ti
- Measure 9:** Chords: Gm, F(sus4). Lyrics: dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na ti dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na
- Measure 10:** Chords: Gb. Lyrics: ti dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na ti dha ge na dhi ge dhi na ti ta ke na dhi ge dhi na

Figure 25. Excerpt from Ladu with B<sup>b</sup> Tabla Sounding Through Chords in Syncopated Sequence (0:16)

## 7.2 Root-Based Harmony

The investigation of multiple-pitch tabla parts was considered the next logical step in the research sequence. With additional pitches added to the standard tabla set, the compositions are designed specifically to examine the functionality of the tabla performing predominantly root-based or bottom-note harmony in an ensemble setting. An example of this approach, in which the tabla part underpins the harmony in root position with multiple drums appears in *The Valley of Vung* (track 4. *The Tabla Project*)<sup>80</sup>. In the opening, the tabla sounds a G throughout an arpeggiated harmonic sequence that has G at its root and bottom note. The repeated G in the tabla part intentionally sounds as if a traditional single pitch tabla set is to be played in the work. However, the tabla part later incorporates multiple pitches to move down with the bass part and play the bottom note and root position of the chords and inversions that follow: E<sup>b</sup>, A<sup>dim</sup>/E<sup>b</sup>, C<sup>min6</sup>/E<sup>b</sup>, D<sup>(sus4)</sup>. The unusual, and perhaps unexpected, sound of the tabla part outlining the descending chord progression adds a new and engaging dimension to the musical texture of the chords. It mirrors the notes played in the bass part in a higher register and thus reinforces the direction and intention of the progression. This example is best realised in the accompanying recordings (track 4. *The Tabla Project*). An excerpt from the score appears below.

---

<sup>80</sup> Listen: <https://youtu.be/lxHwM0PNd7k>

53

Pno.

U. Bass

Tabla. dhin dhin na dha ge tre ke tin dhin dhin na dha tre ke tin dhin dhin na dha ge tre ke tin dhin dhin na

60

Pno.

U. Bass

Tabla. na na tre ke tin dhin dhin na dha ge tre ke tin dhin dhin na dha tre ke tin dhin dhin na dha ge tre ke tin

67

Pno.

U. Bass

Tabla. dhin dhin na na na tre ke tin dhin dhin na dha ge tre ke tin dhin dhin na dha tre ke tin

73

Pno.

U. Bass

Tabla. dhin dhin na dha ge tre ke tin dhin dhin na na na tre ke tin dhin dhin na dhin

Figure 26. Bottom Note and Root Position Tabla Harmony in *The Valley of Vung* (1:14)

This method of tabla performance in which the instrument sounds different pitches in outlining the harmonic progression in an ensemble setting is an innovation for tabla playing. It expands the traditional lexicon of the instrument's performance practice as well as increasing its potential use in a variety of genres and musical roles. In addition to the harmonic functionality that outlines the direction and root of the chords in this example, the tabla part performed in this way adds new

textures and tone colours to the harmonic fabric of the ensemble. The tabla as the new harmonic voice in the ensemble in turn affects the harmonic role and choices of other performers and in this way, also provides an innovation for ensemble music. The composition would sound entirely different without the tabla part, or with a tabla part in the standard single pitch configuration. The next example conveys precisely that distinction.

### 7.3 Triad-Based Harmony

The tabla part in *Blueprint* (track 1, *Blueprint*)<sup>81</sup> is initially presented in a single pitch configuration through a harmonic sequence and thereafter adds additional pitches to integrate the tabla within the harmony in order to clearly illuminate the difference. The first chorus of *Blueprint* includes a tabla part in the conventional single pitch tonal role for the instrument. In contrast to the Indian tradition, the single pitch of the tabla here sounds through a harmonic sequence rather than the tonic pitch of a mode. As the chords in *Blueprint* shift and change, the tabla maintains the note E as a pedal point throughout. The harmonic relationships in the first chorus appear below.

The figure displays two systems of musical notation. Each system consists of two staves: Cello (bass clef) and Tabla (treble clef). Above the Cello staff, chord symbols are provided for each measure. In the first system (measures 9-16), the chords are Em, D, Bm, C, Em, D, Bm, and C. In the second system (measures 17-24), the chords are Em, D, G, Bm, C, Am, Em, and Em. The Tabla part in both systems consists of a single note, E, sustained throughout each measure, acting as a pedal point.

Figure 27. *Tabla Pitch Harmonic Relationships in Blueprint*

In subsequent returns to the chorus, the harmonic role of the tabla extends beyond the pedal point and root-based functionality described in the previous sections. Four tabla pitches (E, F, G, and D) are employed to sound different harmonic sonorities from within the triads in the progression<sup>82</sup>. In many cases, the pitches produced on the tabla complete the triads in the harmonic sequence as no other instrument is sounding the pitch. The musical effect here places the tabla at the centre of

<sup>81</sup> Listen: <https://youtu.be/ICY-bY3Dxjo>

<sup>82</sup> To clarify - while the tabla pitches in the pedal point approach also sounded different harmonic sonorities from within the chords, this method differs in that four tabla pitches are played instead of one, and those pitches correspond with notes within the triads.

the change to the complete sonority of the triad. This effect is best experienced in the accompanying recording (track 1, *Blueprint*). A condensed harmonic notation appears below followed by the section in which this example appears within the composition.

Figure 28 consists of two systems of musical notation. Each system has two staves: Tabla (top) and Cello (bottom). The key signature is one sharp (F#).  
 System 1 (measures 9-16):  
 Tabla staff: Em, D, Bm, C, Em, D, Bm, C  
 Cello staff: Shows the corresponding triads for each measure, with notes placed on the staff lines to represent the chord structure.

System 2 (measures 17-24):  
 Tabla staff: Em, D, G, Bm, C, Am, Em, Em  
 Cello staff: Shows the corresponding triads for each measure, with notes placed on the staff lines to represent the chord structure.

Figure 28. Shifting Tabla Pitch Relationships in *Blueprint*

Figure 29 shows an excerpt from *Blueprint* with three systems of musical notation. Each system includes a Violoncello (Vc.) staff, a Tabla staff, and lyrics. The key signature is one sharp (F#).  
 System 1 (measures 57-60):  
 Vc. staff: Shows a melodic line with eighth notes and quarter notes.  
 Tabla staff: Shows a rhythmic pattern with eighth notes and quarter notes.  
 Lyrics: dhin na dhin dhin na tin na dhin dhin na dhin na dhin na tin na dhin dhin na  
 System 2 (measures 61-64):  
 Vc. staff: Shows a melodic line with eighth notes and quarter notes.  
 Tabla staff: Shows a rhythmic pattern with eighth notes and quarter notes.  
 Lyrics: dhin na dhin dhin na tin na dhin dhin na dhin na dhin na tin na dhin dhin na  
 System 3 (measures 65-68):  
 Vc. staff: Shows a melodic line with eighth notes and quarter notes.  
 Tabla staff: Shows a rhythmic pattern with eighth notes and quarter notes.  
 Lyrics: dhin na dhin dhin na tin na dhin dhin na dhin na dhin na tin na dhin dhin na

Figure 29. Excerpt from *Blueprint* Indicating the Harmony Generated Between the Tabla and Cello (1:50)

The sound of these shifting tabla pitches is prominent in the harmonic sequence as it leads a change in the harmony of the piece. At the time of mixing and mastering the track, the audio

engineer commented on his sudden realisation that the tabla is actually filling out the harmony in this piece. He accordingly raised the relative volume of the tabla<sup>83</sup>. This is precisely the intended musical effect; that listeners may ultimately realise that given the appropriate setting, the tabla is capable of not only playing a pitched rhythmic role, but also of contributing significantly to the harmonic fabric of the music.

#### 7.4 Transforming Tabla Pitches Through Moving Harmony

The limited number of pitches available on the tabla set require a unique compositional approach to harmony to assist the instrument to make an extended harmonic contribution. Compositions created with this pitch limitation in mind may be assisted by specific, and in many cases, limited, harmonic movement in order for the tabla to perform the extended harmonic roles proposed in this research. The work *In a Milky Way* exemplifies some of the harmonic compositional implications of exploring the new extended harmonic functions for the tabla (track 7, *The Tabla Project*)<sup>84</sup>. The particular harmony and progression of the composition centres on the four tabla pitches that sound within the piece: A, B<sup>b</sup>, C<sup>#</sup>, and D. The harmony chosen in the work is intended to assist in extending the colour and relative sonority of the pitch of the tabla drums. This is achieved through exploiting the pitch of the tabla relative to the surrounding harmony. In the piece, initially the B<sup>b</sup> tabla drum sounds the minor third in a G<sup>min11</sup> chord. In the next chord, the same drum sounds an A<sup>#</sup>: voicing the major third of the F<sup>#</sup> major chord. The sound of these two notes are quite different; the minor third is subtle and soft, the following major third is bright and crisp. The single tabla pitch is capable of producing these two very different sounds due to its relative place in the specific surrounding harmony. The notation from this section appears below.

The musical notation for Figure 30 is as follows:

- Piano:** The first staff starts at measure 7 with a treble clef and a key signature of one flat. It contains four groups of eighth-note triplets: G4-B4-D5, G4-A4-B4, G4-A4-B4, and G4-A4-B4. The second staff continues with four more groups of eighth-note triplets: G4-A4-B4, G4-A4-B4, G4-A4-B4, and G4-A4-B4.
- Tabla:** The first staff has a bass clef and a key signature of one flat. It contains four quarter notes: B3, B3, B3, and B3. The second staff contains a quarter note B3, a quarter rest, a quarter note B3, and a triplet of eighth notes (B3, B3, B3).

Figure 30. Excerpt from *In a Milky Way* with B<sup>b</sup> Tabla Sounding Minor and Major Third (0:30)

<sup>83</sup> Lachlan Carrick, Personal Communication, August 2015.

<sup>84</sup> Listen: <https://youtu.be/SbvvclyEOw>

Continuing this method, the A tabla sounds the minor third in the F<sup>#</sup> minor chord and is directly transformed into a major third within the F major chord.

Figure 31. Tabla Sounding Minor and Major Thirds in Consecutive Chords in: *In a Milky Way* (0:14)

Later, the D<sup>b</sup> tabla sounds the minor sixth of F<sup>min6</sup> and then sounds C<sup>#</sup>: voicing the perfect fifth of the F<sup>#</sup> chord as notated below.

Figure 32. Db Tabla Sounding Minor sixth in F<sup>min6</sup> and Perfect Fifth in F<sup>#</sup> in: *In a Milky Way* (0:08)

This method, through the application of targeted surrounding harmony, provides each tabla the ability to sound a variety of musical functions and, ultimately a broader palette of musical effects. These transformations are not possible in the traditional repertoire of the tabla as the single pitch of the instrument remains fixed to the tonic of the mode of the piece, rather than shifting through chords. In the research presented here, including compositions such as *In a Milky Way*, the pitched function of the instrument not only has a different harmonic role and function to that within the tradition, but it has a changing variety of these. These extensions to the repertoire and functionality of the instrument often incorporate referent pitch material in order to change and adjust the sound and colour of the tabla in an ensemble setting. The next section considers multiple tabla parts independently creating harmonic structures.

## 7.5 Creating Harmony with Multiple Tabla Parts

This section discusses investigations of multiple tabla parts, in which the entire harmony is constructed from notes sounded simultaneously on multiple tabla drums. As only one tabla can be played at a time, this technique is made possible with either multiple tabla players or multi-track

recording. In the following examples of this approach, the harmony is built with up to three tabla pitches sounding at a time to complete the harmonic intention.

The harmonic content of the tabla part in *Blueprint* begins as a pedal point and increases to include three tabla parts as the piece progresses (track 1, *Blueprint*)<sup>85</sup>. Initially, the tabla part is constructed of a single tabla pitch; an E that sounds over a descending cello ostinato and a vocal melody as heard in the opening of the recording and notated below.

The musical score consists of three staves. The top staff is labeled 'Voice' and contains a vocal melody in G major with lyrics: "Mile stones and mile stone. Tur-ning it all". The middle staff is labeled 'Vc.' and shows a descending cello ostinato in G major. The bottom staff is labeled 'Tabla' and shows a single pitch pedal point (E) in G major. The score is marked with a '9' at the beginning and includes triplet markings over the vocal melody.

Figure 33. *Blueprint with Single Tabla Part (0:37)*

During the chorus, a multiple-pitch tabla part is added to the single pitch part, to complete the harmony in the section as can be heard in the recording and shown below.

<sup>85</sup> Listen: <https://youtu.be/ICY-bY3Dxjo>

73

Voice: The te - - lling and the re -

Vc.

Tabla: dhin na dhin dhin na tin na dhin dhin na dhin na dhin dhin na

Tabla E: dhin na dhi ge dhi na ke te tha ka ta ka te re ke te tha ka ta ka te re ke te dhin na dhi ge dhi na ke te

76

Voice: - - - te - lling. Of your - - -

Vc.

Tabla: tin na dhin dhin na dhin na dhin dhin na tin na dhin dhin na dhin na dhin dhin na

Tabla E: tha ka ta ka te re ke te tha ka ta ka te re ke tedhin na dhi ge dhi na ke tin tin na dhi ge dhi na ke dhin na dhi ge dhi na ke

Figure 34. Two Harmonised Tabla Parts in Blueprint (2:16)

The harmony created through the additional tabla parts in combination with the cello appears condensed below.

9

Tabla: Em D Bm C Em D Bm C

Cello

17

Tabla: Em D G Bm C Am Em Em

Cello

Figure 35. Condensed Harmony of the Cello and Two Tabla Parts in Blueprint

Toward the conclusion of the piece the rhythmic density of the tabla part increases significantly. At this time, additional pitches are consecutively added to the tabla part until the three pitches of the complete E minor triad are present. In creating a climax in the composition, the tabla part here

has balanced proportions of rhythmic density and harmonic content. It is a new approach to consider the instrument capable of increasing intensity in ensemble music through harmonic layering as well as rhythmic density. This approach creates thick layers of music in which the ensemble creates a musical climax. This can be heard at the conclusion of the piece in the recording and seen in the notation below.

128

Voice

Shak.

Vc.

Tabla

Tabla E

Tabla B

it all o

dha ti ge tin ge tin ge na dha ti ge tin ge tin ge na dha ti ge tin ge tin ge na dha ti ge tin ge tin ge na

dha ti ge tin ge tin ge na dha ti ge tin ge tin ge na dha ti ge tin ge tin ge na dha ti ge tin ge tin ge na

dha ti ge tin ge tin ge na dha ti ge tin ge tin ge na dha ti ge tin ge tin ge na dha ti ge tin ge tin ge na

Figure 36. Three Harmonised Tabla Parts in Blueprint (3:43)

The combined tabla and cello harmony from this final section appears condensed below.

18

Tabla

Cello

Figure 37. Condensed Harmony with Cello and Three Tabla Parts in Blueprint

*Interlude* presents a different harmonic approach with multiple simultaneous tabla parts (track 8, *The Tabla Project*)<sup>86</sup>. The tabla part here includes three pitches: G, C, and D to create a suspended G chord through the main section of the piece. This is followed by a bridge section with the tabla sounding B<sup>b</sup>, C, and D (G<sup>min11</sup>)<sup>87</sup>. The inherent tension of both the suspended chord and densely

<sup>86</sup> Listen: <https://youtu.be/9x-HMyPGI3s>

<sup>87</sup> Relative to the piano part.

voiced eleventh chord is increased through the sharp attack of the note produced on the tabla and the forward motion generated by the syncopated rhythm of the unison tabla parts. The pronounced effect of this can be heard in the accompanying recording. Excerpts from the two sections of the piece indicating the harmony appear below.

Figure 38 is a musical score for an excerpt from the Main Section of Interlude with Three Harmonised Parts (0:38). It features five staves: Piano (Pno.), Upright Bass (U. Bass), and three Tabla parts (Tabla 1, Tabla C, and Tabla D). The piano part consists of a series of chords in the right hand and a single bass line in the left hand. The Upright Bass part has a few notes. The three Tabla parts play a rhythmic pattern of eighth notes, with lyrics written above each staff: "dha te te dha ti na tin tin na dha dha dhin na tin tin na dha dha dhin na tin tin na dha". The score is numbered 12 at the beginning.

Figure 38. Excerpt from the Main Section of Interlude with Three Harmonised Parts (0:38)

Figure 39 is a musical score for Three Harmonised Tabla Parts from the Bridge Section of Interlude (0:55). It features six staves: Piano (Pno.), Upright Bass (U. Bass), Double Bass (Db.), and three Tabla parts (Tabla 1, Tabla C, and Tabla D). The piano part consists of a series of chords in the right hand and a single bass line in the left hand. The Upright Bass part has a few notes. The Double Bass part has a long, sustained note. The three Tabla parts play a rhythmic pattern of eighth notes, with lyrics written above each staff: "dhin dhin dhin". The score is numbered 18 at the beginning.

Figure 39. Three Harmonised Tabla Parts from the Bridge Section of Interlude (0:55)

Further extending this approach of multiple tabla pitches in harmony led to the creation of compositions with tabla parts that fulfil a complete changing chord progression. This approach requires many drums and either sufficient players or overdubs to achieve. The harmony in *While You Were Sleeping* is produced entirely with tabla parts alone as an example of the extent to which the tabla may function as a harmonic instrument (track 12, *The Tabla Project*)<sup>88</sup>.

The piece was performed with each drum in a different pitch to complete the harmonic framework<sup>89</sup>. The composition begins with two quartal harmony chords produced from the different tabla pitches and gradually introduces more pitches until the complete chord progression is revealed and performed on the tabla. The efficacy of sustain on the tabla is acutely tested in this piece with long pauses between the chords in the opening. The atmosphere of the piece is enhanced by tabla notes played in reverse during the introduction and main body of the work.

Due to the sustaining pitch and long decay produced on tabla the instrument may be considered favourable in harmonic settings relative to other drums. Though, unlike other instruments that may typically play a chord progression, such as guitar or piano, the sound of the tabla has a very fast attack. The following guitar, piano, and tabla wave forms of the same pitch (A-5) below illustrate this point.

---

<sup>88</sup> Listen: <https://youtu.be/5kA3Fzms2bI>

<sup>89</sup> The tabla pitches in the piece are: D, E, F#, G, A, B, D, E



Figure 40. *Guitar Wave Form*

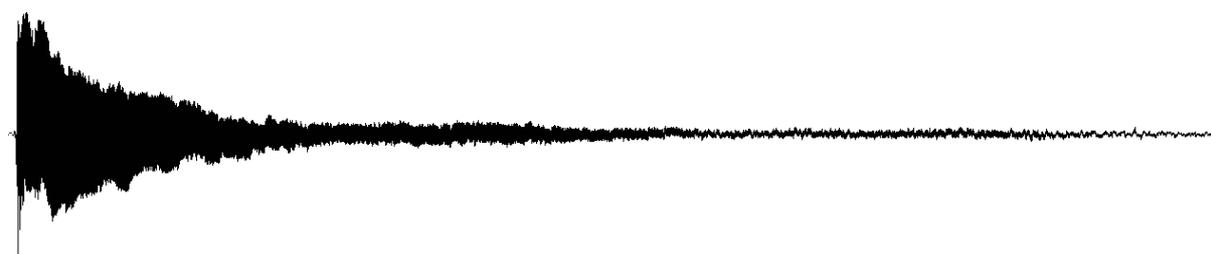


Figure 41. *Piano Form*

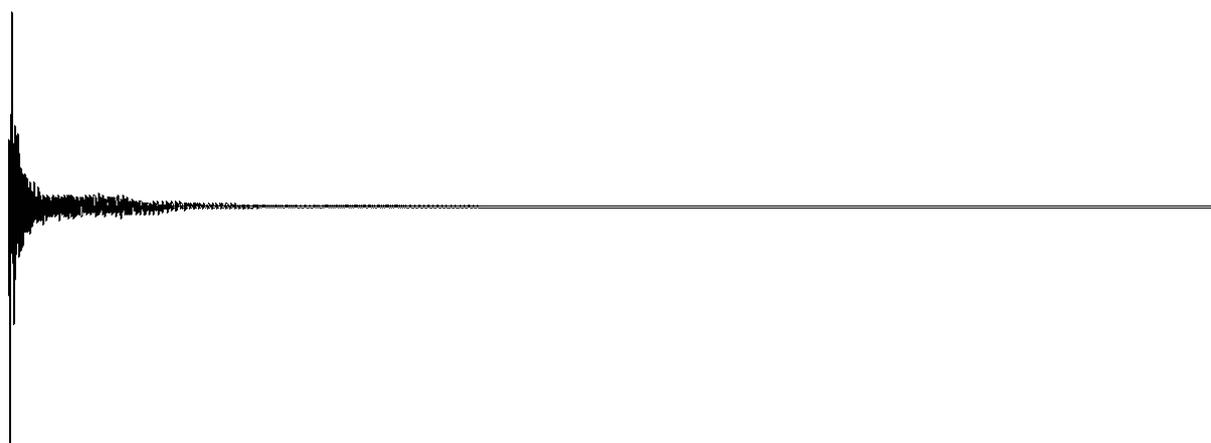


Figure 42. *Tabla Wave Form*

This inherent feature, along with the complex tonal qualities of the instrument and strong rhythmic phrasing combine to produce a very different aural harmonic experience in this piece. The fast speaking harmony produced on the tabla provides a distinct variation to the slower speaking timbre of much harmonic instrumental music. As far as I have uncovered during this research, it

is the first piece to be written with a complete chord progression performed on the tabla. The notated excerpt below can be heard in *While You Were Sleeping* (track 12, *The Tabla Project*)<sup>90</sup>.

The musical score for Figure 43 consists of four staves labeled T2, T3, T4, and Bia. Each staff contains a melodic line with lyrics written above it. The lyrics for T2, T3, and T4 are "tin na tin" repeated across the measures. The Bia staff has a more complex rhythmic pattern with lyrics "ge ge ke ke ge ge ge ge ge ka ka ka ka ka".

Figure 43. Harmonised Tabla Parts in *While You Were Sleeping* (1:11)

A condensed form of the harmonised tabla parts appears below on a single staff.

The condensed notation for Figure 44 is a single staff showing five chords represented by block letters: G, F, E, D, and C. Each letter is placed on a staff line to indicate its pitch, and they are grouped together to show the harmonic progression.

Figure 44. Condensed Tabla Parts from *While You Were Sleeping*

During this aspect of the research, that focused on creating entire chord progressions on the tabla, I discovered that simple repeated harmonies were more effective than complex ones. This is due to the limited range of the instrument (C<sup>4</sup> - E<sup>5</sup>), complex and time-consuming tuning logistics and issues with uniformity of sound production on the different drums. The sound produced on different tabla drums varies as each has a different timbre, resonance, note attack and overall sustain. Unlike the piano for instance, which has a comparatively uniform resonance, sustain, attack, and timbral qualities over the same range. This uniformity of sound creates a focus on the changes in the shifting harmony, almost in isolation of timbral changes.

When performed on the tabla, as the harmony changes, so do the timbre, resonance, attack, and sustain. While this research has attempted to minimise this issue through performing with drums from a single maker with uniform construction materials, the issue in part remains. Due to these changing sound qualities, the instrument did not effectively convey the complex harmony

<sup>90</sup> Listen: <https://youtu.be/5kA3Fzms2bI>

attempted in other works during the research process. This led to a simplification of the harmonic content in *While You Were Sleeping* in order to foreground the harmonic intention of the work<sup>91</sup>.

### Conclusion

While it may not be possible to create tabla parts with elaborate harmonic functions due to the limited tonal range of the instrument, performance techniques, and variety of timbral qualities, this section has outlined a variety of new ways in which the tabla may effectively contribute to the harmonic content of ensemble music. It has been discussed that the efficacy of these functions may be increased through compositions created for the specific tabla pitches available<sup>92</sup>. This section has described numerous, musically effective harmonic roles for the tabla in ensemble music including pedal points, root-based, triadic, and extended harmony.

Most of the harmonic approaches described in this section are not possible in the traditional repertoire of the tabla as there is an absence of chordal harmony in the music for which it is designed. While the tabla is now performed in contemporary music with harmonic content, to date, the pitch of the tabla commonly performs the same role as within the traditional repertoire, that is, a single pitched tabla throughout the music. As a consequence, the many and varied harmonic capabilities of the instrument are yet to be considered in contemporary music for tabla. This approach may be particularly applicable in jazz settings that incorporate the tabla. While there is a long history of tabla performance in jazz dating back to the 1960s (Farrell 1997: 169), with famous musicians such as Miles Davis, John Coltrane and Pharoah Sanders incorporating the tabla, this approach, in which chord changes may also be outlined by the tabla, is yet to be adopted. This section has described and analysed numerous harmonic approaches for the multiple-pitch instrument in contemporary ensemble settings from the music created for this project. These new approaches widen the practice and expand the paradigm of tabla performance to include new harmonic functionality in ensemble settings.

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<sup>91</sup> This attribute is predominantly problematic when the tabla is supplying the complete harmonic content - due to the number of simultaneous pitches to be balanced. In my experience, it did not adversely affect the capability of the instrument in regards to melodic and harmonic referent performance.

<sup>92</sup> Compositions created within the appropriate pitch range is a standard consideration for most instruments, but one that is rarely afforded to the tabla in contemporary music.

## CHAPTER EIGHT: Rhythm

The third facet of the tabla repertoire developed in this project aims at expanding the rhythmic role of the instrument in contemporary music. The aim of this section is to outline a set of new rhythmic approaches for tabla performance in contemporary music that are specific to this project and are consequently yet to be documented. While many rhythmic elements have been applied and examined in this project, including roles related to traditional tabla repertoire, the primary focus in the following section is to document new rhythmic approaches that may extend the existing repertoire of the tabla, generated as part of contemporary intercultural music performance in written, recorded, and scored formats.

The rhythmic role of the tabla in the context of Indian music is clearly defined in traditional repertoire. The traditional repertoire contains a wide variety of complex rhythmic roles for the tabla that pertain to the musical conventions of Indian music. The most fundamental of these is the system of tala, which defines the duration of time-cycles and the hierarchical set of subdivisions that provide the foundation of all rhythmic elements in Indian music. This structural rhythmic organisation is present in all forms of the traditional tabla repertoire. The quantity and complexity of rhythmic material in this traditional repertoire is such that most tabla players spend their performing lives attempting to learn and assimilate these forms into their music, rarely looking beyond. For tabla players whose careers include contemporary world music performance the rhythmic roles required in this setting often fall outside the conventions of Indian music. In place of the tala system of rhythmic organisation, a variety of rhythmic roles that differ from the traditional repertoire are required. To date, tabla performers commonly superimpose traditional rhythmic repertoire in these non-traditional settings and there has been little documentation of contemporary rhythmic development for the tabla beyond the traditional repertoire<sup>93</sup>.

Since the tabla has been performed in world music for more than half a century, in the absence of the Indian tala system of rhythmic structural organisation, it is surprising there has been little to no discussion or documentation of alternative rhythmic approaches. This section attempts to begin to fill this gap in our knowledge. With this in mind, this chapter considers the rhythmic potential of the instrument in contemporary music through examining the additional requirements of, and creative approaches to, rhythmic roles for the tabla that are borne of the instrument's involvement

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<sup>93</sup> For further information on this aspect refer to the literature and recordings reviews in Chapter Two.

in contemporary world music. It considers the musical and technical implications and possibilities of performance in these new roles through analysis of a variety of recordings and scores created in this new musical environment.

### 8.1 Contemporary Rhythmic Roles for Tabla

This section seeks to examine the role of the tabla in the contemporary musical settings in which it is placed today. While the diversity of musical contexts in which the tabla is now played prohibits a definitive set of roles like that which can be found in the traditional music, there are a number of new roles and compositional approaches that must be considered in these settings in order to extend the contemporary repertoire of the tabla.

In the traditional music, the rhythmic role of the tabla is clearly defined within the traditional repertoire. While the role varies between the different performative settings, such as solo or accompaniment, within each of these settings the role is defined according to the musical parameters for improvisation previously discussed<sup>94</sup>. In the context of world music, the rhythmic role of the tabla not only changes according to the sub-genre and performative settings, it also changes according to each composition. Unlike the traditional music in which roles are set according to improvisational parameters within the musical conventions of Indian music, world music commonly has roles set according to compositional parameters. Therefore, these roles may completely change in every work. This intercultural musical context requires a broad and flexible set of roles and rhythmic approaches for tabla performance. With this in mind, this section outlines a number of new roles and approaches to rhythmic settings that vary from the traditional repertoire. These approaches are intended to be applicable in a variety of musical contexts.

Perhaps the greatest challenge in the development of this new repertoire is defining a new role for the tabla that now includes supplying harmonic and melodic contour while maintaining rhythmic stability and the overall feel of the music. This may be the most distinct contribution to the repertoire that this research offers. While this approach intends to expand the current repertoire and role of the tabla through the addition of melodic and harmonic content, these additions are not made in isolation. They are mostly commonly performed in addition to the standard tabla performance roles of maintaining time-cycles and establishing the rhythmic structures within the music. This rhythmically demanding task requires the performer to contribute harmonic content

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<sup>94</sup> See Chapter Three: Current Tabla Repertoire.

and play melodies on the tabla while outlining key aspects of the rhythmic structure. The approach requires additional listening and technical skills beyond those established in the current tabla repertoire. There are three key areas in this aspect of the repertoire that will be discussed in this sub-section of the rhythm chapter: maintaining a rhythmic role in conjunction with performing a harmonic role, a melodic role, and additional percussion roles.

### 8.1.1 Rhythmic Roles in Conjunction with Harmonic Function on Tabla

Maintaining the time-cycle and rhythmic structure in compositions while contributing a harmonic role on the tabla is a demanding task that requires new skills and generates a new multifaceted role for tabla performance. In this new role, the performer is required to manage the cognitive demands of hearing both the rhythmic and harmonic roles simultaneously on the instrument as well as the technical demands such as reaching each drum on time, striking in the right position for the performed note and striking with the appropriate velocity for the different drums<sup>95</sup>. These additional demands in turn effect the rhythmic repertoire and overall musical role of the tabla. The amount of impact this new role has varies according to the complexity and speed of the part required.

The harmonic role performed on the tabla in the solo section of *Anushka* requires relatively few changes that are widely spaced and therefore allows greater space for rhythmic contribution (track 1, *The Tabla Project*)<sup>96</sup>. As there is limited harmonic movement for the tabla in this section, and the changes occur only at the end of the bar, the tabla part maintains a strong rhythmic component with ease, increasing in density throughout the section. This can be seen in the excerpt below and heard from 1:40min in track 1 of the album *The Tabla Project*.

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<sup>95</sup> The velocity required to reach the same volume when striking varies for each tabla drum depending on the size and sustain of the particular drum.

<sup>96</sup> Listen: <https://youtu.be/YBYc-mMIEu0>

25 [B]  
 Gtr. Or similar...  
 Pno. Or similar...  
 Bass. Fm/C Or similar... Dm Fm/C  
 Tabla tin na tre ke tin na tin na tin tin na tin na tre ke tin na tin na tin tin na  
 28  
 Gtr. Dm Fm<sup>6</sup>/B Fm<sup>7</sup>(b<sup>9</sup>)/G<sup>b</sup>  
 Pno. Dm Fm<sup>6</sup>/B Fm<sup>7</sup>(b<sup>9</sup>)/G<sup>b</sup>  
 Bass. Dm Fm<sup>6</sup>/B Fm<sup>7</sup>(b<sup>9</sup>)/G<sup>b</sup>  
 Tabla tin na tre ke tin na tin na tin tin na tin na tre ke tin na tin na tin tin na tin na tre ke tin na tin na tin tin na  
 31  
 Gtr. Fm<sup>6</sup>/B Fm<sup>7</sup>(b<sup>9</sup>)/G<sup>b</sup> A<sup>b</sup>  
 Pno. Fm<sup>6</sup>/B Fm<sup>7</sup>(b<sup>9</sup>)/G<sup>b</sup> A<sup>b</sup>  
 Bass. Fm<sup>6</sup>/B Fm<sup>7</sup>(b<sup>9</sup>)/G<sup>b</sup> A<sup>b</sup>  
 Tabla tin na tre ke tin na tin na tin tin na tin na tre ke tin na tin na tin tin na  
 33  
 Gtr. Fm Fm  
 Pno. Fm Fm  
 Bass. Fm Fm  
 Tabla dhin na dhin na dhin na dhin na dhin dhin na tre ke dhin na tre ke dha na na ti na dhin na ke te

Figure 45. Harmonic Outline of the Tabla Part in *Anushka* (1:40)

The harmonic requirements for the tabla in the composition *In a Milky Way* are more demanding and therefore restricts the normal rhythmic role of the tabla to a greater extent (track 7, *The Tabla*

*Project*<sup>97</sup>. As may be identified below in the score, there are constant changes of pitch allowing little time for the performer to settle into a traditional rhythmic role on a given drum.

The musical score consists of four systems, each with a Piano staff and a Tabla staff. The systems are numbered 4, 7, 10, and 13. The Piano part is characterized by a constant stream of eighth notes with frequent pitch changes, often grouped in threes. The Tabla part features a mix of eighth and sixteenth notes, with frequent changes in pitch and rhythm, also often grouped in threes. The lyrics are written below the Tabla staff.

Figure 46. Harmonic Movement Effecting the Rhythmic Role of the Tabla in: *In a Milky Way* (0:14)

This is especially pertinent when the tabla part increases in density later in the work as shown below.

<sup>97</sup> Listen: <https://youtu.be/SbvwclyEOw>

44  
Piano  $\begin{matrix} 3 & 3 & 3 & 3 \\ \text{dhii ne dhii na ge na ta ka te re ke te dhii ne dhii na ge na ta ka te re ke te} \end{matrix}$   
Tabla  $\begin{matrix} 6 & 6 & 6 & 6 \end{matrix}$

45  
Piano  $\begin{matrix} 3 & 3 & 3 & 3 \\ \text{dha dha dha te te dha te te ta ke te} \end{matrix}$   
Tabla  $\begin{matrix} 6 & 3 \end{matrix}$

46  
Piano  $\begin{matrix} 3 & 3 & 3 & 3 \\ \text{dhii ne ge ne dha ti ge ne dhii ne ge ne dha ti ge ne} \end{matrix}$   
Tabla  $\begin{matrix} 12 & 12 & 12 & 12 \end{matrix}$

47  
Piano  $\begin{matrix} 3 & 3 & 3 & 3 \\ \text{dhin dhin dha dhin} \end{matrix}$   
Tabla

48  
Piano  $\begin{matrix} 3 & 3 & 3 & 3 \\ \text{dha te te dha te te ta ke te dhii ne ge ne dha ti ge ne dhii ne ge ne dha ti ge ne dhii ne ge ne dha ti ge ne} \end{matrix}$   
Tabla  $\begin{matrix} 6 & 3 & 12 & 12 \end{matrix}$

49  
Piano  $\begin{matrix} 3 & 3 & 3 & 3 \\ \text{dhii ne ge ne dha ti ge ne dhii ne ge ne} \end{matrix}$   
Tabla  $\begin{matrix} 12 & 12 & 12 \end{matrix}$

Figure 47. Harmonic Movement in Tabla Part During Dense Phrasing in the Work, *In a Milky Way* (2:28)

With many changes of pitch throughout this section of the composition the rhythmic role and phrasing is driven by the harmonic movement of the tabla, rather than dictated purely by the rhythmic structures as in the standard role for the instrument. The rhythmic role is more harmonically driven in this example than in the previous example due to the rate of changes and

the timing of the changes that often occur partway through the bar. This harmonically driven rhythmic demand completely changes the approach to rhythm in the tabla part which is now dictated by the harmonic content required during phrasing cycles. This in turn forces change in many performative parameters in the tabla part, such as adjusting phrasing to avoid fast rolls that end on a down beat when changing drums, and changing *bol* patterns to finish phrases on the bayan drum prior to changing pitch on the tabla drum.

New requirements such as those discussed above ultimately drive the creation of new roles and repertoire for the tabla. An additional consequence of these changes is less rhythmically dense phrasing on the tabla and a higher occurrence of pauses during phrasing. These two components, a reduction in rhythmic density and an increase in space through rhythmic pauses in the phrasing, form key creative intentions of this project. This is in contrast to traditional compositional forms, such as *kaida* and *rela*, that form the basis for tabla players training and skills maintenance. Forms such as these are performed at the highest speed possible and phrasing is provided through changes in note combination, rather than rhythmic changes. With few, or no pauses in these forms, there is an inherent lack of rhythmic phrasing and space. The addition of harmonic roles to the rhythmic role of the tabla therefore supplies new aspects to the musicality of the instruments rhythmic repertoire and roles.

### 8.1.2 Rhythmic Roles in Conjunction with Melodic Content on Tabla

As with the addition of harmonic content in the tabla part discussed above, a melodic role also demands the management of supplementary musical elements that in turn affect the rhythmic role of the instrument. Melodic performance on the tabla demands more movement of the hands between drums than when performing in a harmonic role and therefore the impact the standard rhythmic role is increased. These new demands change the nature of phrasing and the rhythmic role of the tabla in ensemble music.

In *Sans Frontières*, the additional melodic element in the tabla part diminishes the standard rhythmic role of outlining the time-cycle and rhythmic structure (track 5, *The Tabla Project*)<sup>98</sup>. Instead, a new role for the tabla is established in which sub-sections of the rhythmic cycle or internal pattern are performed between melodic statements. In *Sans Frontières*, this translates to occasional accents in the internal 3,2,2 subdivision of the seven-beat cycle between the melodic phrasing. In attempting

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<sup>98</sup> Listen: <https://youtu.be/Z6xKomJDGsw>

not to disrupt the melody, these accents are most effectively performed with the muted, un-pitched notes on the tabla and bayan drums, such as *ti, te, ne, ka and ko*. An excerpt of the score of *Sans Frontières* appears below; the melody can be seen on the upper staff, and the tabla part playing the melody and additional phrases can be seen on the middle staff.

The musical score consists of three staves: Tar (top), Tabla (middle), and Bass (bottom). The Tar staff shows a melodic line in G minor. The Tabla staff shows a rhythmic accompaniment with lyrics: "dhin ge ka te te ka tin tin tin ka ka dhin ge dhin dha dhin ka tin dha dha tin tin na dha". The Bass staff shows a bass line in G minor.

Figure 48. Rhythmic Role Punctuating Melodic Statements on the Tabla in *Sans Frontières* (0:18)

This new musical role for the tabla that incorporates both melodic and rhythmic components, consequently develops new approaches to phrasing on the instrument. This contemporary phrasing tends to be rhythmically less dense and less repetitive than that of its traditional counterpart. The melodic requirement may be considered to heighten the performers awareness of the melodic contour of the music and thus may assist in generating a more comprehensively musical approach to phrasing.

Changes to the role of the tabla have a ripple effect on ensemble roles. In this example, the complete melodic contour of the music is performed on the tabla, and consequently the traditional role of rhythmic time-keeper is diminished on the tabla and adopted into the parts of other instruments. This may be noted above in the bass part in *Sans Frontières* and again below in the cello part in *Shifter* (track 3, *The Tabla Project*)<sup>99</sup>.

<sup>99</sup> Listen: <https://youtu.be/Oaje4opq3Es>

43 A2

Cello

Tabla

ge ti ge tin tin dhin dhin te ka na na tin tin na ge te ge tin tin ke tin ne

49

Cello

Tabla

dhin dhin dhin dhin ke te ke tin tin ke tin ke tin ke tin dhin dhin dhin

54

Cello

Tabla

dhin ke te ge dhin ke na na tun na tin dhin ke

58

Cello

Tabla

tun tun

strike outer rim of tabla

Figure 49. Increased Rhythmic Role of the Cello with the New Rhythmic Role of the Tabla in *Shifter* (1:40)

Tabla performance in these new combined melodic and rhythmic roles impacts a variety of compositional approaches. The notes produced on the tabla are percussive and have a sharp attack, and therefore the melodies performed on the tabla have a more percussive, rhythmic appeal. These features assist in the development and performance of melodies comprising many notes of short duration with strong rhythmic components; such as *Sans Frontières* and *Shifter* that includes irregular phrasing in 7/8 and 9/8.

With the diminishment of the standard rhythmic role of the tabla, as time keeper performing short, repetitive phrasing, and the addition of new musical roles that are deeply influenced by the melodic and harmonic contour of the music, a new framework for the rhythmic role of the tabla has been established.

### 8.1.3 Rhythmic Roles in Conjunction with Additional Percussion

In investigating the potential of new rhythmic roles for the tabla, this research examined the impact of auxiliary percussion instruments played simultaneously with the tabla, by the tabla player, in addition to the melodic and harmonic components previously outlined. A set of cymbals proved to be the most suitable percussion instrument for this task, based on the sustain, variety of tone colour, physical adaptability to the current tabla configuration, and the suitability of the sound within the overall instrumentation and musical styles. In this setting, a set of nine cymbals are configured in what I refer to as a *cymbal tree*, tightly grouped on a single stand and placed to the left of the performer. The cymbals are played with the fingers, and are complemented by a custom-build remote hi-hat, which is operated by the knee of the performer<sup>100</sup>.

In performance, the cymbals punctuate the phrasing of the tabla, providing additional tone colour, sustain, body, and volume to the sound of the tabla part. Like the other additions to the role of the tabla discussed previously, this element in turn effects the rhythmic content on the tabla. The volume, harmonic spectrum, body, and sustain of the cymbals create variety and dynamics that are not possible on the tabla set alone. They assist the performer to create the greater dynamism and flexibility required in the role within the diverse genre of world music. The musical functionality of this may be heard throughout the accompanying recordings.

### 8.1.4 Polyrhythmic Roles on Tabla in Contemporary Music

The music in this project has a number of polyrhythmic and cross-rhythmic compositional features. While these polyrhythmic structures are often realised through the combination of ensemble parts, the addition of cymbals to the tabla part provides the tabla player the new benefit of performing the complete polyrhythmic structures alone.

While it is not part of the traditional repertoire for tabla players to perform polyrhythms in isolation, the repertoire contains a variety of polyrhythmic and cross-rhythmic features that are realised in reference to the accompanying instrument. These celebrated structures, such as *tibai* and *chakradar*, are excellent examples of advanced rhythmic features that are built into the fabric of Indian music and the rhythmic system of tala. This section considers new polyrhythmic approaches on the tabla that may extend the repertoire of the instrument.

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<sup>100</sup> This configuration can be viewed in performance on the following video: <https://youtu.be/ObnFBhFDLTY>

The use of cymbals in the tabla part in this project assists in generating additional polyrhythmic roles for tabla performance that also increase the number of polyrhythmic layers in the music. Below are two examples of contemporary tabla performance in which polyrhythms are performed in the tabla part alone.

In *The World of Birds*, the combination of cymbals and tabla create an 11:44 polyrhythm as outlined in the excerpt below (track 5, *Blueprint*)<sup>101</sup>. These additional rhythmic layers diffuse the unison rhythmic structure of the tabla and cello while providing an additional, longer, rhythmic layer.

Figure 50. Polyrythms in *The World of Birds* (0:56)

*Parallel Paths* contains a further development of this approach (track 11, *The Tabla Project*)<sup>102</sup>. In this case, the composition originally contained a cello and tabla part in a 5 against 3 polyrhythm as indicated below.

Figure 51. 5 Against 3 Polyrythm

The addition of the cymbals and hi-hats allows for an additional rhythmic layer that was chosen to generate a more complex three-way polyrhythm. The hi-hats play a polyrhythm that is 5 against 4 with the tabla while the cello plays a polyrhythm that is 5 against 3 of the tabla notes. This means

<sup>101</sup> Listen: [https://youtu.be/\\_U71eavB0M](https://youtu.be/_U71eavB0M)

<sup>102</sup> Listen: <https://youtu.be/fPpgWPgSU5k>

the tabla plays a polyrhythm that is 3 against 5 with the cello, and 4 against 5 with the hi-hat as noted below.

The figure shows three staves of musical notation. The top staff has a 5:3 ratio, the middle staff has 3:5 and 4:5 ratios, and the bottom staff has a 5:4 ratio. Each staff contains a series of notes with brackets indicating the specific polyrhythmic groupings.

Figure 52. Three-Way Polyrhythm as 5:3, 3:5, 4:5 and 5:4

This combination ultimately generates a larger 20 against 12 against 15 polyrhythm as notated below.

The figure shows three staves of musical notation. The top staff is labeled 20, the middle 12, and the bottom 15. Each staff contains a series of notes with brackets indicating the specific polyrhythmic groupings.

Figure 53. Three-Way Polyrhythm as 20:12:15

It was considered more transparent in the notation to conceive each of the parts in different time signatures. In the score, the cello part is notated in 3/4, the tabla in 5/4 and the hi-hat in 4/4. With the three parts coinciding after a total of sixty quaver beats. An excerpt showing how this polyrhythmic structure was realised in the composition appears in the score below.

The figure shows a musical score with three parts: Cello 1 in 3/4, Tabla in 5/4, and Hi-Hats in 4/4. The score includes lyrics for the tabla part: "dhin dhin ne ta ke tun ne dha ti dha ge na ta ke tun ne dhin dhin ne ta tin ne dha ti dha ge na ta ke tun ke ne dhin dhin ne ta tun ne dha na na ke ne ta ke tin ke ne".

Figure 54. Polyrhythmic Structures in Parallel Paths (1:50)

The multiple, intersecting, polyrhythmic pulses provided in this composition provide the listener a choice of three different parts which could be followed as the fundamental underlying pulse. The musical effect of the composition changes according to which pulse is followed by the listener.

The tabla player performs two of these time signatures simultaneously, one on the tabla, the other with the hi-hat played by the knee. With the two pulses crossing and weaving together against the cello pulse, there is an increased level of rhythmic precision required in an entirely different focus for the performed tabla part to that within the traditional music. In the traditional music, multiple ongoing pulses are not possible due to the system of tala and the musical conventions of Indian music. This approach has been made possible by the new musical setting that does not include the traditional rhythmic system of tala and the addition of cymbals in the tabla part.

The addition of the new polyrhythmic approaches discussed above increases the technical demand for the performer, provides additional rhythmic layers in the music and expands the breadth of rhythmic possibilities in the tabla repertoire.

## 8.2 Contemporary Rhythmic Organisation for Tabla

A number of traditional rhythmic elements are absent from this new repertoire as part of an attempt to provide opportunities for new rhythmic approaches and new repertoire for tabla to develop. These include increasing tempos, *tibai*, *chakradar*, *tali*, and *kbali*<sup>103</sup>, as well as traditional forms such as *kaida*, *rela*, and *tukra*. In addition, it is not possible in the given space to elaborate on all of the rhythmic elements examined as part of this project, such as the free-time tabla parts (*100 Days*, track 6, *Blueprint*)<sup>104</sup> and the atmospheric use of the tabla (reverse pitches in *While You Were Sleeping*, track 12, *The Tabla Project*)<sup>105</sup>. Instead, this chapter analyses only the most fundamental rhythmic considerations for contemporary tabla performance. The following section covers one of the most important of these: tabla repertoire in the absence of *tala* and *vibharg*.

An attempt to develop new approaches to rhythmic organisation for tabla performance must be considered within the context of the existent repertoire. With this in mind, a brief outline of the key rhythmic aspects of rhythmic organisation in the traditional repertoire follows. In the traditional tabla repertoire, all rhythmic elements are defined within the system of tala: a hierarchical system of rhythmic organisation specific to Indian music. The tala defines the length

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<sup>103</sup> *Kbali* refers to the un-accented portion of a tala cycle.

<sup>104</sup> Listen: <https://youtu.be/ZS358OCEn9w>

<sup>105</sup> Listen: <https://youtu.be/5kA3Fzms2bl>

of time-cycles, the subdivisions of each cycle (*vibhag*), a tiered system of emphasis for each subdivision and a specific tabla pattern for each time-cycle. For example, a ten-beat cycle in Indian music is known as the tal, *jhaptal*, which is subdivided into four subsections, known as *vibhag*, in the following order: 2, 3, 2, 3. Each *vibhag* has a specific level of emphasis. The first *vibhag* holds the greatest emphasis and is referred to as *sam*. The second and fourth *vibhag* hold the next level of emphasis and are both referred to as *tali*. The third *vibhag* holds the least emphasis and is referred to as *khali*. *Khali* is of particular importance as no resonating bass notes are to be played on the bayan at this point of the time-cycle or at any point within the *khali vibhag*, that is, beats 6 and 7 of the time-cycle in the case of *jhaptal*. The cycle appears below with the standard *bol* pattern for ten-beat cycles with traditional *vibhag* indicators, X: *sam*, 1: first *tali*, 0: *khali* and, 2: second *tali*.

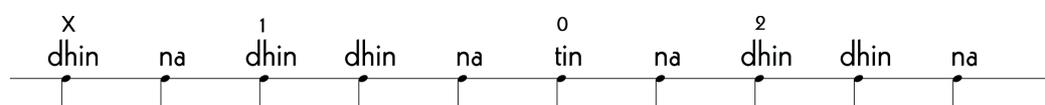


Figure 55. Tabla Part in Tala Jhaptal

All traditional tabla repertoire adheres to the tala system of rhythmic organisation and therefore note choice and phrasing is deeply interconnected with this system. As there is currently only one repertoire for the instrument, there is only one system of structural rhythmic organisation for performers to draw from. The integration of the tabla in music that does not adhere to the conventions rhythm in Indian music, and instead includes different systems of rhythmic organisation, requires alternative rhythmic roles, phrasing, and approaches.

### 8.2.1 Tala and Vibhag Alternatives

Contemporary world music incorporates rhythmic cycles and subdivisions drawn from a breadth of musical traditions that often do not correspond with the existing time-cycle repertoire of the tabla as described above. The fixed cycle length and subdivisions in the traditional repertoire dictate the rhythmic parameters of tabla performance including when sustaining notes are played (*tali*) and when muted notes are performed (*khali*). Contemporary world music performance on the other hand requires a wide variety of time cycles, subdivisions, and sustained or muted phrasing. Music such as this requires new repertoire in order for the tabla parts to be appropriately assimilated. This is distinct from what I consider to be the current performance practice of superimposing tala cycles within music that corresponds only to the tala length and not necessarily the internal structure of the subdivisions.

### 8.2.2 Alternative Internal Rhythmic Organisation

*The World of Birds* provides an example of world music that requires an alternative internal structure, that is, an alternative subdivision of a rhythmic cycle (*The World of Birds*, track 5, *Blueprint*)<sup>106</sup>. The eleven-beat cycle in *The World of Birds* has an internal structure of 3,3,3,2 unlike the traditional eleven beat tala, (*chartaal ki sawari taal*) which is divided 2,2,2,3. The composition requires a new set of tabla patterns to maintain the rhythmic structure and overall feel of the piece as well as new *bol* combinations for fluent phrasing in the internal rhythmic structure. An excerpt from the score appears below.

Figure 56. Internal Rhythmic Structures in *The World of Birds* (2:34)

Further development of this approach to structural organisation is described below in the composition *Estuaries* (track 4, *Blueprint*)<sup>107</sup>. In this case, the internal organisation of the five-beat pattern is subdivided in fractions of each beat. Dividing each quaver beat into semiquavers creates a total of twenty beats that are then divided as 6,5,6,3. This structure is performed with an overarching feel of the original five quaver beats on the cymbals and hi-hats. The structure appears below in which the first line indicates the division of 6,5,6,3, the second and third lines indicate the relationship between the first beat of each of subdivision and the over-arching quaver feel in five.

Figure 57. Internal Rhythmic Structure in *Estuaries*

<sup>106</sup> Listen: [https://youtu.be/\\_U71eavB0M](https://youtu.be/_U71eavB0M)

<sup>107</sup> Listen: <https://youtu.be/VbRAiET8hKg>

An excerpt from the composition with the tabla part appears below.

13

Voice

Cello

Tabla

dha ge na dhiin ta tun ta tun tun dha ge na dha ge ne dhiin ta tun ta dhiin dhiin dha ge na

Figure 58. Internal Rhythmic Structure as Played in *Estuaries* (0:50)

This alternative approach to internal structural organisation provides a new basis for phrasing within the composition as well as within open solos. While maintaining the more complex internal structure at speed during solos new combinations and phrases are created within the five-beat cycle. The tabla solo using this phrasing can be heard on track 4 of the album *Blueprint* (1:09 – 1:42)<sup>108</sup>. A notated excerpt appears below, the notation of the complete solo can be located in the scores section of this document.

25 (8)

Cello

Tabla

Tbl Vox.

ta ka te re ke te tha ka ta ka te re ke te tha ka ta ka te re ke te tha ka ta dhiin ke tre ke dha ge dhin dhin na ge ne

ta ka te re ke te tha ka ta ka te re ke te tha ka ta ka te re ke te tha ka ta dhiin ke tre ke dha ge dhin dhin na ge ne

26 (8)

Cello

Tabla

Tbl Vox.

de re de re ke te tha ka ta ka te re ke te tha ka ta ka te re ke te tha ka ta dha dha dhin dhin na ge ne

de re de re ke te tha ka ta ka te re ke te tha ka ta ka te re ke te tha ka ta dha dha dhin dhin na ge ne

Figure 59. Internal Rhythmic Structure in *Estuaries* During Tabla Solo (1:09)

<sup>108</sup> Listen: <https://youtu.be/VbRAiET8hKg>

### 8.2.3 Internal Rhythmic Organisation Over Multiple Bars

The composition *While You Were Sleeping*, extends this internal rhythmic development of the tabla repertoire with a changing two-bar rhythmic structure (track 12, *The Tabla Project*)<sup>109</sup>. With seven beats to the bar, the first bar has an internal structure of 3,2,2 and the second bar 2,3,2. This approach is not possible in the traditional repertoire as the *vibharg* structures are fixed, in the case of seven, as 3,2,2. The extended internal structure in *While You Were Sleeping* requires longer, changing patterns and phrasing in the tabla part. With consecutive bars, the tabla part may emphasise the overlapping groups of three beats and two beats in order to disguise the first beat of the pattern (continuous bars yield this pattern: 3,2,2,2,2,3,3,2,2,2,2,3). This approach of an extended, changing internal pattern not only diminishes the repetition for listeners, it also increases the performers options for expressive phrasing.

The image shows a musical score for three tabla parts labeled T2, T3, and T4. Each staff is in a treble clef. T2 has a melodic line with notes and rests, with the word 'tin' written above several notes. T3 and T4 have more rhythmic lines with notes and rests. Below the staves, the lyrics 'tin ke na ke ne tin na tin na ke ne tin na tin na ke ne tin na tin ke na ke ne' are written across the measures.

Figure 60. *While You Were Sleeping* (1:03)

### 8.2.4 Internal Rhythmic Organisation with Multiple Simultaneous Subdivisions

In continuing this creative process of generating new rhythmic structures for the current tabla repertoire, an approach with multiple simultaneous subdivisions was developed. In the composition *Five Trains*, there are two simultaneous time-cycle subdivisions (track 6, *The Tabla Project*)<sup>110</sup>. The 9/8 tabla part is divided as 2,2,2,3 and the 9/8 melody is divided as 3,3,3. This approach is distinct from the current repertoire as the melodic and rhythmic components of Indian music (tala and raga) are linked through the tala and its subdivisions with all performers adhering to the time-cycle and its division as a format for improvisation. The two, simultaneous contrary rhythmic structures in *Five Trains* can be heard in track 6 of the album *The Tabla Project*. An excerpt from the score appears below.

<sup>109</sup> Listen: <https://youtu.be/5kA3Fzms2bI>

<sup>110</sup> Listen: <https://youtu.be/AmcaaDLY2q0>

The musical score for 'Five Trains' is presented in 9/8 time. It features six staves: S. Gtr., Tar, Gtr., Gtr. E, Tabla, and Tabla 2. The S. Gtr. part begins at measure 13 with a circled 'A' above it. The vocal lines (Gtr. and Gtr. E) contain lyrics: 'dhin dha ge dhe dhin na na ke te dhe te na ke dhin te na ke tak dhe te na ke dhin ne na na ke te ta ge dhe te na ke dhin te na ke tak'. The Tabla and Tabla 2 parts show a complex rhythmic pattern with internal subdivisions of 2,2,2,3 and 3,3,3.

Figure 61. *Five Trains* in 9/8 With Two Internal Subdivisions: 2,2,2,3 and 3,3,3 (0:23)

This approach developed new tabla parts in a 2,2,2,3 subdivision as well as new rhythmic relationships with the surrounding instruments. Maintaining the independent internal structures during performance presents new challenges for tabla performers and ensemble members rhythmic capabilities. Additional creative approaches were adapted given this new musical setting including the tabla part switching between the two opposing subdivisions in different sections of the music. Potentially, other creative approaches may develop in alternative settings such as these to further benefit and develop the repertoire.

### 8.2.5 Changing Time Signatures

In addition to the new approaches to internal time-cycle organisation described above, tabla performance in contemporary world music includes a variety of approaches to the overall time-cycle, such as compositions with changing time signatures. Just as the tonality within Indian music remains fixed to a particular mode and tonic-based drone in each piece, the rhythm also remains fixed within a particular time-cycle. This approach in the traditional music is part of the fabric of Indian musical improvisation, that is, improvisation within the parameters of raga and tala. With the tabla performed today in a wide variety of musical settings around the world that are devoid of raga and tala, new approaches and musical elements such as changing time signatures may become part of the new repertoire for the tabla. While it is conceivable to superimpose changing tala cycles over compositions with changing time signatures, the two rarely integrate well. Instead, new repertoire is required to fulfil this new setting for the tabla.

The composition *Shifter* was specifically composed with this rhythmic approach in mind (track 3, *The Tabla Project*)<sup>111</sup>. It contains a seventeen-bar cycle that is comprised of seven bars of 7/8 and one bar of 9/8 followed by seven bars of 7/8 and two bars of 9/8. This approach of odd time-signature compositions with intermittent bars of different length was designed with the intention for the rhythmic structure to be long enough to obscure the cycle for the listener at the same time as being systematised and intelligible enough for performers to improvise within. In this case, *Shifter* was conceived by the musicians as two sets of eight bar cycles in 7/8, with the last bar alternating as one and two bars of 9/8. *Shifter* can be heard on track 3 of the album *The Tabla Project* and an excerpt from the score appears below.

The musical score consists of four systems, each with a Cello staff (bass clef) and a Tabla staff (treble clef). The time signature is 7/8, with occasional 9/8 bars indicated by a double bar line and a new time signature.

- System 1 (Measures 43-46):** Cello staff starts with a circled 'A2' above measure 43. The Tabla staff has vocalizations: 'ge ti ge tin tin dhin dhin te ka na na tin tin na'. The time signature is 7/8.
- System 2 (Measures 47-50):** Cello staff continues. The Tabla staff has vocalizations: 'ge te ge tin tin ke tin ne dhin dhin dhin dhin'. The time signature is 7/8.
- System 3 (Measures 51-56):** Cello staff continues. The Tabla staff has vocalizations: 'ke te ke tin tin ke tin ke tin dhin dhin dhin dhin ke te ge dhin ke na na tun na tin'. The time signature is 7/8.
- System 4 (Measures 57-60):** Cello staff continues. The Tabla staff has vocalizations: 'dhin ke tun tun'. The time signature is 7/8. A note below the staff reads 'strike outer rim of tabla'.

Figure 62. Changing Time Signature Composition for Tabla in *Shifter* (1:40)

<sup>111</sup> Listen: <https://youtu.be/Oaje4opq3Es>

The changing time signature structure in *Shifter* demands alternative phrasing and *bol* patterns from the traditional repertoire. It also requires the cognitive processes of the performer to manage time-cycles and phrasing over much longer durations. The more demanding nature of the changing time signature environment tends to decrease the density of phrasing on the tabla. With an international reputation for high speed performance and dense articulation, tabla performance may benefit from musical elements that encourage a reduction in the density and speed of performance, which allows for broader and more flexible applications, such as longer changing time signature structures.

*Into The Unknown* follows a similar theme of changing time signatures in a structured cycle that intentionally obscures the rhythmic pattern for the listener yet remains manageable for musicians in an improvising setting (track 13, *The Tabla Project*)<sup>112</sup>. The rhythmic structure in *The Unknown* was conceived by the musicians as a bar of six and a bar eight followed by a bar of six and a bar of ten. An excerpt from the score appears below.

The musical score for 'Into The Unknown' (0:33) is presented in two systems. The first system begins at measure 13, marked with a circled 'A'. It features four staves: Guitar (Gtr.), Piano (Pno.), Bass, and Tabla. The time signature starts at 6/4, changes to 4/4 at measure 14, and returns to 6/4 at measure 15. The second system begins at measure 16, with the time signature changing to 5/4 at measure 17 and returning to 6/4 at measure 18. The Tabla part includes rhythmic notation with the syllables 'dhe te dha te te te dha dha te te dha ti' written above the notes. The bass part maintains a consistent rhythmic pattern throughout the piece.

Figure 63. Changing Time Signature Time Cycles in the Composition: *Into The Unknown* (0:33)

In this composition, the role of the bass part is to maintain the time-cycle. This enables a rhythmic freedom in the tabla part rarely afforded in the traditional repertoire<sup>113</sup>. In the piece, *Into The*

<sup>112</sup> Listen: <https://youtu.be/J6TBcpiV6r8>

<sup>113</sup> The only context in which another instrument maintains the time-cycle and thus affords the tabla rhythmic freedom in the traditional repertoire is in the complex *tabla lehra* repertoire or tabla solos in instrumental accompaniment.

*Unknown*, the tabla part may maintain a rhythmic role while free of the time-cycle responsibilities that normally confine the part. Thus, the accents and pulse are shifted and moved around during improvisation while maintaining the over-all feel of the piece. This new setting may be generative for new roles for tabla performance through providing freedom of the two key roles in the traditional repertoire: time-cycle responsibilities and complex solo requirements.

### 8.3 Rhythmic Foundations in Contemporary World Music

One of the creative objectives of this project is to raise listeners' awareness of the tabla and its potential in contemporary music. A variety of approaches are examined to this end including the creation of compositions that places tabla or rhythmic devices as central focal points of the music. The different methods examined in this regard are discussed below.

The primary compositional approach applies detailed tabla phrasing, at the centre of the composition, in attempting to raise the listeners' awareness of the rhythmic components in the music. There are many examples of this approach throughout the music in this project. The composition, *Tremor*, was composed specifically to highlight this approach (track 2, *The Tabla Project*)<sup>114</sup>. In the opening section, the focus of the work alternates from the tabla part to a melody part performed on clarinet and flute. While the melody tends to attract listeners' attention, a shift of focus to the tabla part requires specific compositional and performative tools. In this case, it is constructed through a distinct, evocative, and intricate set of phrases on the tabla, performed at a raised dynamic level in unison by two tabla players. The attempt here is to raise awareness to the potential of rhythm as a focal point, as distinct from a 'solo', with the rhythmic part taking the structural and compositional place of a melody in the composition. This distinction is highlighted through alternating the focus at the conclusion of each chord cycle between the tabla and the melody. The compositional impact of this is best understood through the recording, an excerpt from the score appears below where bars 11 – 20 have a tabla focus and bars 21 – 30 have a melodic focus.

---

<sup>114</sup> Listen: <https://youtu.be/LGHYkmE3Os>

11 Gm(add2) Eb6 Gm(add2)  
 Gtr. dha dha ge na na ge dhin na tre ke dhiin Repeat or similar dha ge na dha ge dhin na tre ke dhet dha ge na dha ge dhin na dhin na  
 Tabla

14 Eb6 F(sus4)  
 Gtr. dha tre ke dha ti dha na dha dhin na ke te ta tun na na ti na tun na  
 Tabla

16 Cm9  
 Gtr. ka te ge dhin ge dhin ge dhin ge dhin dhin dhin dhin dhin dhin dhin dhin  
 Tabla

17 Bb/D Eb(sus2) Cm9  
 Gtr. dhin dhin na dha ge dhin na tre ke dhin dha dha na dha ge tun na ka dhin dhin tin  
 Tabla  
 Alto Cl.  
 B. Cl.  
 Gtr. Gm(add2) Eb6 Gm(add2) Eb6  
 Tabla dhindhin te dha te dha tre kedhin dhin te dha te dha ge tre kedhin dhin te dha te dha tre kedhin dhin te dha te dha tre ke

25  
 Fl.  
 Alto Cl.  
 B. Cl.  
 Gtr. F(sus4) Cm9 Bb/D  
 Tabla dhin dhin te dha te dha tre ke dhin dhin na dha dhin na dhin dhin te dha te dha tre ke

28  
 Fl.  
 Alto Cl.  
 B. Cl.  
 Gtr. Eb(sus2) Cm9  
 Tabla dhin dhin te dha te dha ge tre ke dhin dha ge tre ke dhin na na te dha

Figure 64. Alternating Musical Focus of Tabla Part (Bars 11–20) (0:30), and Melody (Bars 21–30) (1:03)

A different approach to developing a focus on rhythm in the music was examined in the composition *Inside Out* (track 2, *Blueprint*)<sup>115</sup>. With the same intention of placing rhythm and the tabla at the centre of the music, in the role most commonly assigned to melody, this piece is centred around a set of tabla vocalisations. In many ways, the piece is in a classic verse/chorus, song form with the tabla and vocalisations taking the place of the chorus and ultimately creating climax in the music toward the end of the piece. In this case, the attention is drawn through phrasing that is performed a semi-quaver after the down beat and played in unison between the vocalist, tabla vocalisations, and the tabla. An excerpt from the score appears below.

The musical score excerpt shows measures 51-53. It features four staves: Voice, Vc., Tabla, and Tabla Vx. The music is in a 6/8 time signature with a key signature of one flat (B-flat). The lyrics are: 'dha ti dha ge ti na ke na, dha ti dha ge ti na ke na dha dha ti dha dha ti dha dha ti dha ge ti na ke na, dha' and 'dha ti dha ge ti na ke na, dha ti dha dha ti dha ge ti na ke na, dha ti'. The Tabla and Tabla Vx parts show a complex rhythmic pattern with many 'x' marks indicating specific tabla strokes.

Figure 65. Musical Focal Points in *Inside Out* (3:21)

In this project, the melodic and harmonic foundations of each composition centre around the pitches of the tabla. In an extension of this approach, compositions with rhythm and tabla parts as the starting point were created in furthering attempts to draw attention to the rhythm and the tabla. The opening section of *The Waiter* is built on rhythmic composition on the tabla that was

<sup>115</sup> Listen: <https://youtu.be/6KMQhsaKAz0>

later developed to include melodic content (track 10, *The Tabla Project*)<sup>116</sup>. In a similar fashion, part two of the work was originally composed as a tabla part, and there-after extended to include an ensemble. Notated excerpts appear below.

The musical score consists of three systems, each representing a different section of the piece. Each system includes a vocal line with lyrics and instrumental parts for Tar, Oud, Tabla, and Kanj.

**System 1 (Measures 20-21):**

- Measures 20-21:** The vocal line begins with the lyrics "dhii ne dhii ne te te dha dhin dhin\_ na dhin dhii ne dhii ne te te dha dha dhin dhin dha na dhin". The instrumental parts (Tar, Oud, Tabla, Kanj) provide a rhythmic accompaniment.

**System 2 (Measures 22-23):**

- Measures 22-23:** The vocal line continues with "dhii ne dhii ne te te dha dhin dhin\_ na dhin dha dhii ne dhii ne te te dha dhin dhin\_ na dhin". The instrumental parts continue with a similar rhythmic pattern.

**System 3 (Measures 25-26):**

- Measures 25-26:** The vocal line concludes with "dhii ne dhii ne te te dha dha dhin dhin dha na dhin dhii ne dhii ne te te dha dhin dhin\_ na dhin". The instrumental parts provide a final rhythmic accompaniment.

Figure 66. Opening Section of *The Waiter* (0:50)

<sup>116</sup> Listen: [https://youtu.be/ytKkS24\\_7vI](https://youtu.be/ytKkS24_7vI)

52

Shak. 

Gtr. 

Tar. 

Tabla  dha ge dhe te te dha ge dhin na ge na dhin tin na dha ge dhin na

54

Shak. 

Gtr. 

Tar. 

Tabla  ke te ge dha ti dha na na ge dhiin na dhin tin ge dha ge dhin na

56 **D**

Shak. 

Gtr. 

Tar. 

Tabla  dha dhe dhe dha dha dhe dhe dha dha dhe dhe dha dha dhe dhe dha dhin dhin dhin

58

Shak. 

Gtr. 

Tar. 

Tabla  te dha dha dhe dhe dha dha dhe dhe dha dha dhe dhe dha dha dhe dhin dhin dhin

Figure 67. Part Two of the Composition the Waiter (2:12)

The intention in these pieces is ultimately to raise the value of rhythm as a compositional tool in world music composition through the tabla. This in turn affects the repertoire of the tabla. Unlike the solo/*theka* format in the traditional repertoire, commonly defined by fast and complex solos followed by simple and spacious rhythmic outlines, this context requires tabla performance that may be considered to be somewhere between these two extremes. Engaging enough to draw and maintain the focus of the listener, yet not so complex and fast as to tire the listener of the sound of the tabla.

This fine-line of engaging listeners in the rhythmic components of the music without rhythmic and percussive saturation also informs the work *Ladu* (track 9, *The Tabla Project*)<sup>117</sup>. Like the composition *The Waiter*, *Ladu* was composed beginning with the tabla part. The complex driving rhythmic content of the work, which is at times played by two tabla players, is offset by a series of slow and changing melodies, interchanging instrumentation and an almost song form. The tabla part maintains the focus of the composition through a series of syncopated, interconnected, short rhythmic phrases. After eight initial repetitions, these tabla patterns are performed in exactly the same sequence, a semiquaver later than the original position. The attempt is to draw the listener's attention through the rhythmic tension that is provided in this technique. This rhythmic approach is also performed in improvisations in Indian music but is rarely cited in either the written or pedagogical repertoire. As far as my research has uncovered, this technique has no term of reference other than that suggested by Wegner (2004) as an 'inversion'. In that way, the work may be considered to reference the solo tabla *lehara* form that is comprised of complex tabla parts that are accompanied by a one bar melody. Although this work differs in length, form, instrumentation, and melodic content to the traditional approach. An excerpt from the score appears below.

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<sup>117</sup> Listen: <https://youtu.be/okTG5SN1m-U>

The musical score is divided into three systems, each starting with a double bar line and a measure number (47, 48, and 49). The key signature is B-flat major (two flats).

- System 47:**
  - Gtr 1:** Treble clef, quarter notes, eighth notes.
  - Gtr 2:** Treble clef, quarter notes, eighth notes.
  - Rds.:** Bass clef, quarter notes, eighth notes.
  - Bass:** Bass clef, whole notes. Chords: Eb, E°.
  - Tbl.:** Two staves with lyrics: "dha ti tak dhii na ge dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge".
  - Tbl2:** Two staves with lyrics: "dha ti tak dhii na ge dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge".
- System 48:**
  - Gtr 1:** Treble clef, quarter notes, eighth notes.
  - Gtr 2:** Treble clef, quarter notes, eighth notes.
  - Rds.:** Bass clef, quarter notes, eighth notes.
  - Bass:** Bass clef, whole notes. Chord: F(sus4)/C.
  - Tbl.:** Two staves with lyrics: "dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge".
  - Tbl2:** Two staves with lyrics: "dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge dhii na dha ti tak dhii na ge".
- System 49:**
  - SI Gtr.:** Treble clef, quarter notes, eighth notes.
  - Tar.:** Treble clef, quarter notes, eighth notes.
  - Gtr 2:** Treble clef, quarter notes, eighth notes.
  - Rds.:** Bass clef, quarter notes, eighth notes.
  - Bass:** Bass clef, whole notes. Chords: Gm, F(sus4).
  - Tbl.:** Two staves with lyrics: "dha dhii ne dhii na ge dhii na ge dhii ne dhii na ge dhii na ge dhii ne dhii ne dhii ne dha ti ge ne dhii ne dha ti ge ne dhii ne dhii ne dhii ne dha ti ge ne".
  - Tbl2:** Two staves with lyrics: "dha".

Figure 68. Tabla Parts as Focal Point in Ladu (3:05)

**Conclusion**

The contemporary setting in this project provides a new musical context for the rhythmic role of the tabla. The combined outcome of the additional roles discussed in this chapter equates to a tabla part that may now maintain a rhythmic role at the same time as supporting the harmonic structure, provide melodic content, and supply additional tone colour and variety with cymbals. In addition, this section has outlined a number of other rhythmic roles in attempting to extend the repertoire of the instrument. These include a number of alternatives to polyrhythmic performance on the tabla and multiple alternatives to time-cycle structures and internal rhythmic organisation. These additional rhythmic roles and compositional approaches to rhythm may assist in the creation of new phrasing and new pathways for tabla performance in contemporary intercultural music.

## CONCLUSION

Globalisation has brought the diverse peoples, cultures and musics of the world together in unprecedented ways. It has ushered in a time in which musical instruments, from a variety of cultures and origins, are dispersed throughout the world in what has become a global musical landscape. In this new landscape, such instruments as keyboards and guitars have become increasingly common in India, and the tabla is now finding its place in Australia. In each new setting, these instruments take on new functions and roles and are commonly integrated in the new musical culture, that is itself, inevitably changed by the instrument's presence.

Given the present situation in which the dynamics of power and privilege are disproportionately weighted to advantage the West, where research such as this is undertaken, it is necessary for the researcher to consider the inherent cultural sensitivities. As awkward and uncomfortable as this power differential has always been for me, both in the years I lived in India and the years in Australia as a bearer of Indian culture, it is the reality of this time. I believe this discomfort reverberates at many different levels. The resurgence of neo-traditionalism for instance, may be seen as a reaction to the reality of globalisation, that inevitably entrenches power differentials in intercultural relations. It may be that traditionalists, in attempting to prevent external influences from generating change within a tradition, create limited and fixed definitions that ultimately act in a way that begins to limit the normal evolution, changes and adjustments of a living tradition. In this research I argue those engaged in intercultural activity need not take sides in the false dichotomy of this great musico-cultural debate of our globalised society, that pits tradition against intercultural innovation. That is, the fixed conception of tradition as a singular, stagnant pastime against the multiplicity of intercultural collaboration as an either-or proposition. This dualistic debate does not serve to further the interests of either side as, regardless of individual preferences, the fact is, both tradition and interculturality are realities today. In a globalised world, unequal though the opportunities may be, both tradition and intercultural activity inevitably coexist. Unfortunately, due to the complexity of these globalised intercultural issues, it is not possible to consider them problems needing a solution. Rather, they are complex and ongoing issues that require recognition, attention, care and management. No doubt, 'This is arguably an even more difficult and expansive question than is raised by the purely musical issues of interculturality.' (Evans, Sandy 2014: 203). Nevertheless, this research attempts to promote a position in which both tradition and interculturality coexist, thrive and support the other, as well as providing some steps toward this end.

Acknowledging the reality of interculturalism in today's world is an important primary step. Directing Western privilege in a way that ultimately benefits and empowers the original culture is another important step in the management of respectful intercultural development. Through my research, I have attempted to direct this Western privilege in a way that assists the growth of the both traditional, and intercultural tabla performance in contemporary Australian musical culture and Australian musical education. This privileged position has assisted me in gaining acceptance for the tabla as an instrument of study in formal education in the state of Victoria at V.C.E. level, as discussed in the introduction. Through this, many students in the South Asian diaspora have been able to complete their final secondary school music exams performing traditional tabla in Australia. The same privilege has contributed to establishing performance syllabi for the tabla at multiple Victorian universities. Consequently, there are now students with bachelor degrees in Australia with the tabla as their instrument of study. The contemporary tabla repertoire developed in this research situates the tabla in many musical conventions of the West, and therefore assists these education contributions to have a lasting, positive effect. In this way, while the power and privilege dynamic remains a complex issue, research such as this may ultimately contribute toward respectful intercultural development. Certainly, my position is fraught with inequalities that, due to the subjective nature of my position, I am unable at this stage to identify, but openness to such negotiations is the only workable approach to such issues.

No doubt, the substantial wealth of traditional tabla music is today thriving in the vibrant tradition of Indian music. This is not only true within India, but also internationally, as the peoples and culture of India continue to influence and merge with Western society. This cultural expansion has led us both, those from within the tradition as well as the 'outsiders', down an inevitable and exciting path of interconnectivity. As the cultures of India, along with the many others, continue to enrich and assist in developing an increasingly intercultural Australian society, new possibilities will continue to emerge. In this context, research such as this attempts to integrate parts of the cultural heritage of India, such as tabla performance, within what is now becoming an ineluctably multicultural Australia.

Developing the significance of both traditional Indian music and contemporary intercultural tabla performance within Australian culture is consistent with achieving this goal. On the one hand, traditional Indian music performances and skills transmission in traditional training centres such as the Melbourne Tabla School, that I established a decade ago, contribute to this end. On the other hand, the intercultural aspects may benefit from contemporary tabla performance and a

repertoire in which the tabla exists and functions within the diverse musical conventions found in Australia's contemporary intercultural music, as exemplified by the outcomes of this research.

In developing this new repertoire, this research asked the following questions: what role can, and does the tabla play, in contemporary music that does not adhere to the musical conventions for which the current repertoire is devised? Which musical elements and conventions, that are not accounted for in the current repertoire, may be brought to and performed on the tabla in such music? Ultimately, the aim of this research was to investigate, through recorded, scored, and written mediums, the potential of new performative approaches to the tabla. The research specifically aims at defining a framework of new roles and musical elements for tabla performance in contemporary, small ensemble composition and performance to lay the foundations for an alternative repertoire for the instrument that complements and adds to the existing traditional repertoire.

The process of achieving these aims revealed a gap in the written literature on the tabla. After half a century of tabla performance in intercultural music there are currently no publications dedicated to non-traditional approaches to playing the tabla. As discussed in the literature review, while there is ethnographic literature and documentation of the traditional repertoire, there are less than a handful of pages dedicated to non-traditional approaches to the tabla in the written literature to date. There is yet to be any in-depth written documentation of *how* the instrument already is, and might potentially be used, or of any musical parameters or conventions that may be applied to the instrument in intercultural settings. The written component of this research attempts to address this gap in the literature and contribute to the body of knowledge on contemporary tabla, through documenting, detailing, and discussing, a thorough investigation of the musical elements and musical roles that may be performed on the tabla in intercultural music. It is the first written documentation that is dedicated to the contemporary intercultural repertoire of the tabla.

Recordings that include tabla in intercultural music were assessed as part of the research process, culminating in a review that ultimately highlights an emerging culture of the tabla performed in contemporary intercultural music over the past sixty years. The tabla parts performed in most of these non-traditional settings were drawn from the traditional repertoire and super-imposed in the new musical context. This approach, along with the use of a single tabla pitch has led to a contemporary performance practice in which the tabla parts often lack integrated roles in the harmonic, melodic, and rhythmic musical conventions present in intercultural music. The new

recordings created in this project attempt to address the gap identified here through the use of a multiple-pitch tabla set that functions within the harmonic and melodic frameworks of the music, as well as applying rhythmic devices in the compositions that navigate non-tala based music. While the review uncovered two primary performance trends of super-imposing traditional repertoire in non-traditional settings and the beginning of non-traditional repertoire performance, this interpretation is not sufficiently nuanced to account for the multiple ways in which the instrument is performed in contemporary music. There are certainly other ways in which contemporary tabla performance may be analysed and considered, such as performing the standardised role of other percussion instruments on the tabla and the many variants in the field of electronic and sampled tabla adaptations. There is not sufficient space here to do justice to this topic. It may be the subject of valuable research in the future.

This research benefited from written notations of the recorded tabla music presented here. Accordingly, a review of the existent tabla notation systems was conducted. The review reveals that tabla music is currently notated in a variety of systems that often lack accurate indication of what is to be played on the tabla and resist integration in ensemble notations. Consequently, the recordings in this project are notated in a hybridised staff notation system, that presents accurate tabla notations in the standardised notation of the West, where the impact of this research is intended. The hybridised staff notation allows for fluent interpretation and analysis of the melodic, harmonic, and rhythmic aspects of the music and reflects the intercultural approach employed in this project. This is not to imply the system is without limitation. As a medium for documenting music, any written form, including Western staff notation, has many inherent limitations. The particular system devised for this research is limited in that it is primarily suited to musicians familiar with Western staff notation. In addition, the rhythmic layout inherent in staff notation, in which notes are grouped together according to their relation to the crochet beat, may be considered to obscure the phrasing of tabla parts that often do not align with each beat. Adaptions to the design of the notation system implemented here may be considered in future research in order to minimise these limitations.

The main categories and sub-categories of the existing tabla repertoire as well as the performance practice settings in which the repertoire is presented were outlined in this written component in order to contextualise the new ideas presented in the contemporary repertoire devised in this project. This covered the fundamental role and musical functions of the instrument in a traditional setting as well as discussing of the current state of contemporary tabla performance practice.

The research was designed to contribute new knowledge in both the written and performing fields. Consequently, it was developed in three parts: recorded music, musical scores, and a written component. Accordingly, the research was conducted within the methodological tradition of practice-led research (Smith and Dean 2009). As such, it was conducted in a cyclic web of practice-led research and research-led practice that included creative work, practice-led research, academic research, and research-led practice. This methodology contributed to establishing the conceptual framework of new musical possibilities and requirements for the tabla in intercultural music and ultimately substantiates its feasibility through practical examples. It provides a multifaceted research project, that employs recorded music in conjunction with explication and critical commentary in a written component, providing results in the form of recorded and scored music. The music demonstrates new avenues for the expansion of tabla repertoire in ensemble music in an international context.

Of course, this is not to claim that the research is exhaustive. The multiplicity of musical elements found in the many intercultural musical settings in which the tabla is found today means it would be neither possible, nor desirable, to create a definitive repertoire for the tabla in intercultural music. The repertoire presented here is one approach to this complex task, and many research directions remain in this field. This particular research and repertoire is ultimately limited by the quantity of musical examples, musical genres, and instrumentations in which the method here has been applied. In attempting to minimise these limitations, the music in the *The Tabla Project* album was created with different instrumentation, musical elements, and tabla pitches on each track. This method provides a broader application of the repertoire than may have been possible with a single ensemble and fixed set of pitches. The music on the album *Blueprint*, attempts to address the other main limitation of the research: the tuning and logistical issues associated with performing with multiple tabla drums. These limitations were addressed through a tabla set restricted to four specific pitches and fixed instrumentation throughout the work that ensures the works are repeatable in a live context with a set ensemble.

The music produced in this project was created in the genre of contemporary world music that includes a heterogeneous collection of musical elements and instrumentation from diverse cultures. In addition, the compositional approach employed here intentionally avoids iconic musical phrasing and elements from any given musical culture, such as II-V-I chord progressions

and *tibais*<sup>118</sup>. The tabla-centred music presented here is intended to serve the purpose of highlighting new roles and musical elements performed on the instrument in contemporary music. As such, the melodic, harmonic, and rhythmic aspects of the ensemble pieces are composed for, and based around the tabla part.

This new repertoire addressed musical issues related to the pitch of the tabla in contemporary music through an approach that incorporates multiple pitches to integrate the instrument within, and contribute to, the melodic content of the music. This was achieved through compositions in which the tabla performed entire melodies, melodic ostinatos, and melodic fragments. The efficacy of these new musical elements performed on the tabla was analysed in Chapter Six, including a case study in a completely improvised setting. While the instrument may not have the melodic capabilities of string or wind instruments for instance, the analysis revealed that a multiple-pitch tabla configuration can effectively function in contemporary ensemble music and can contribute significant musical functionality to the melodic component of the music. This is in distinct contrast to what I refer to in the research as the contemporary performance practice in intercultural music of single tabla pitch configurations that ignore the melodic content of the music. While the single pitch configuration functions effectively in traditional Indian music as a drone, its application is limited in contemporary world music.

Additional musical issues related to the pitch of the tabla were addressed in relation to harmony. The instrument's capability to navigate harmonic settings was assisted by the multiple-pitch configuration of the tabla. The repertoire presents many examples of tabla performance that relate to, and function within, harmonic settings. I believe this to be the first of its kind in contemporary world music, and the traditional repertoire does not include resources to navigate chord-based harmony. The practical application of the new harmonic approaches for the tabla in the recorded and notated music were analysed in the written component. The analysis reveals numerous, musically effective harmonic roles for multiple-pitch tabla in ensemble music including pedal points, root-based, triadic, and extended harmony. The efficacy of these functions was increased through compositions created for the specific tabla pitches available. Research into this aspect is limited. It is not possible to create tabla parts with elaborate harmonic functions due to the instrument's range, performance techniques, and variety of timbral issues. Nevertheless, this

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<sup>118</sup> No doubt, the phrasing from each performer is necessarily embedded with many musical elements specific to their training - for the betterment of the music. As grey as the area may be, the critical position here is iconic musical elements that clearly reference specific musical traditions, such as those outlined above.

research ultimately demonstrates one way in which the tabla may effectively contribute to the harmonic content of ensemble music in a variety of new ways as described here.

This research also documented, examined, and analysed new rhythmic approaches and rhythmic roles for the tabla as part of contemporary intercultural music performance. This component of the research is limited by the fact that the rhythmic aspects of the traditional repertoire are extensive, and in many cases, also function effectively in non-Indian music. In providing resources for musical settings that do not align with the conventions of Indian music, this research defined numerous alternative approaches to contemporary rhythmic organisation on the tabla. These include a number of tala and *vibharg* alternatives, as well as a set of contemporary tabla approaches to polyrhythmic structures and changing time-signatures that are not present in the traditional repertoire. The analysis of these approaches identified new rhythmic roles for contemporary tabla performance that includes, is impacted, and influenced by, the new melodic and harmonic roles performed on the tabla in this research. The additional rhythmic roles and compositional approaches to the specific tabla parts developed new phrasing and new rhythmic pathways for tabla performance that may be applied in contemporary intercultural music. The combined outcome of the additional melodic, harmonic and rhythmic roles presented in this research equates to a tabla part that maintains new rhythmic roles at the same time as supporting harmonic structures and providing melodic content.

The practice-led methodology in this research ultimately provides clear results in the form of recorded music, practical resources in the form of notations and CDs, as well as contributing to the body of knowledge on the subject of the tabla through the written component. This material now serves as the first attempt to create a non-traditional repertoire for the tabla that has been theorised and documented in recordings and musical scores and can now be accessed as performance material, pedagogical tool, and reference resource for musicians, educators, and academics interested in the field of contemporary intercultural tabla performance. In so doing, this research represents another small step in the development of tabla repertoire that respectfully reflects and develops the intercultural dialogue that is today necessary in the global context of contemporary music.

## **FUTURE RESEARCH**

This section identifies future investigations that may follow on from this research. The aim of this research has been to integrate the tabla in contemporary intercultural music, primarily enacted in a Western context. Consequently, future research may consider further ways in which the tabla may be integrated in these contexts. These may include both pedagogical and performance approaches. Pedagogical approaches that consider ways in which to integrate the tabla in primary and secondary school music programs may be of value as many Western musicians begin their musical training in these settings. This is contrary to the traditional context for tabla education in India that is situated in the master and disciple tradition. Cultural diversity is a required aspect of each subject by the Department of Education in Australia and many Australian schools include high proportions of culturally diverse students. Yet, instrumental music and ensemble programs in primary and secondary schools currently remain almost exclusively Western. Research that considers ways in which the tabla may be offered as an instrument of study and included in ensemble music programs may utilise the outcomes of this research. It would also contribute to validating the culture of the many students from the South Asian diaspora within school music programs. Future performance research that considered specific repertoire and roles for the tabla in other genres would complement and follow well from this research. Materials and knowledge surrounding the instrument's use in other non-traditional forms, such as jazz in particular, would be a worthy area for future research as many musical conventions in jazz, such as improvisation on a form, are consistent with those in the traditional music in which tabla players are traditionally trained. This field would benefit from research that examines the specific role of the tabla in these genres and provides repertoire and materials for its performance.

The melodic capabilities of the bayan drum as a pitch adjustable instrument would also be a worthy area for future research. This research may consider the application of the drum as a moving bass part in ensemble music, potentially including multiple bayan drums. Further research into the bayan may include analysis of the different types of modulation performed on the drum. This research could identify the different techniques in use as well as defining specific terminology and notation indications for each technique. This would assist in furthering the knowledge surrounding these techniques and clarify the educational process in teaching them.

There are many areas of research pertaining to construction innovations for the tabla that would be of benefit. Research considering the tuning system may be the most fundamental of these.

Work that ultimately produced a more stable tuning system, that was be quicker and easier to adjust, as well as minimised time and complications surrounding changing skins would be an excellent area of research. Further to this, construction innovations, such as a more consistent *gab*, that is potentially changeable, lasts longer, and does not generate the buzzing sound often associated with an aging tabla due to the iron present in the current mixture, would be valuable research for the field.

## GLOSSARY

**alap** – beginning section of an instrumental recital

**anagat** – composition that concludes before the *sam*

**avartan** – complete cycle of a *tal*

**Banaras** – Indian city now known as *Varanasi*. *Banaras* gharana refers to the stylistic school originating in *Banaras*

**band** – *tabla bols* played with muted notes on the bayan, or where the bayan is absent in the passage of music, also known as *mudi*, lit: closed

**bol** – mnemonic syllables representing the notes performed on the *tabla*

**chakradar** – composition of the solo *tabla* repertoire that is played three times to conclude on the sum

**chalan** – theme and variation compositional form of the solo *tabla* repertoire, particular to the *farrukhabad gharana*

**dupodi** – composition of the solo *tabla* repertoire in which each phrase is played twice

**Farrukhabad** – Indian city in which the stylistic school known as *Farrukhabad gharana* originated (later moved to Kolkata)

**gab** – the black portion in the centre of the *tabla*.

**gat** – short, virtuosic composition from traditional *tabla* repertoire

**gharana** – stylistic school or tradition, originating in a family lineage

**guru-shishya** – the traditional master and disciple relationship between teacher and student

**kaida** – systematic theme and variation compositional form of the solo *tabla* repertoire

**khali** – un-accented beat of a *tal*, indicates beginning of new *vibharg* and is marked by a wave of the hand

**khalifa** – hereditary head of a *gharana* (stylistic school)

**khuli** – *bols* that are played with open resonant strokes on the bayan

**kinar** – outside skin of the *tabla* drum, on the edge of the drum

**leharā** – accompanying melody of *tabla* solo performance

**laggi** – short, syncopated *bol* patterns performed at high speed most commonly in light classical music

**maidan** – main resonating skin of the *tabla* drum, also known as *sur*

**matra** – the pulse beat in Indian music, a unit of time

**mudi bols** – played with muted notes on the bayan, or where the bayan is absent in the passage of music, also known as *band*, lit: closed

**mohra** – short compositional form of *tabla* repertoire that does not end with a *tibai*

**mukhra** – short composition of the solo *tabla* repertoire ending with a *tibai*

**pakhavaj** – double ended barrel drum of north India that pre-dates the *tabla*

**palla** – sections of a *tibai*, the phrase that is used to form the *tibai*

**paran** – compositions originally from the repertoire of the *pakhavaj*, later subsumed as part of *tabla* repertoire

**palta** – variations in a *kaida* or *rela* form

**peshkar** – opening composition of a solo *tabla* repertoire recital, lit: to present

**rela** – theme and variation compositional form of traditional *tabla* repertoire. lit: rushing, flowing, a torrent

**sam** – the beginning of a *tal*, and the most accented *tali*, marked by a clap

**sawal jawab** – system of question and answer in Indian music

**sur** – main resonating skin of the *tabla* drum, also known as *maidan*

**syhai** – black portion on the centre of the *tabla* drum that generates the sustaining pitch

**tala** – unit of time, metric cycle or metre. Also referred to as *tal*

**tali** – accented beat of a *tal*, indicates beginning of new *vibharg* and marked by a clap

**theka** – rum pattern played on the *tabla* to indicate a particular *tala*

***tihai*** – cyclical candential figure played three times

***tripali*** – composition within the traditional *tabla* repertoire that is played in three different metric divisions

***tripodi*** – composition of the traditional *tabla* repertoire in which each phrase is played three times

***tukra*** – short composition of the traditional *tabla* repertoire played at high speed and volume and concluding with a *tihai*

***vibharg*** – subdivisions, or sections of a *tal*

## REFERENCES

## Literature

- Amabile, Teresa M. (1996). 'Creativity in Context'. Boulder, CO: Westview Press.
- Appadurai. (1991). 'Global Ethnoscapes: Notes and Queries for a transnational anthropology' in Recapturing Anthropology: Working in the Present, ed. Richard Fox. U.S.A: School of American Research Press.
- \_\_\_\_\_. (1996). 'Modernity at large: Cultural dimensions of globalization'. University of Minnesota Press. Minneapolis, MN.
- Aubert, L. (2007). 'The Music of the Other: New Challenges for Ethnomusicology in a Global Age'. Translated by Carla Ribeiro. Aldershot: Ashgate Publishing Limited.
- Australian Bureau of Statistics. (2016). Retrieved on 27/07/2018.  
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/2024.0Main+Features12016?OpenDocument>
- Bagchee, S. (1998). 'NAD: Understanding Raga Music'. India: Business Publications.
- Bailey, J. (2008). 'Ethnomusicality, Intermusability, and Performance Practice'. In the New (Ethno) Musicologies, H. Stobart, ed. Lanham, MD: Scarecrow Press.
- Balkwill, Laura-Lee, and Thompson. (1999). 'A Cross-Cultural Investigation of the Perception of Emotion in Music: Psychophysical and Cultural Cues'. Music Perception: An Interdisciplinary Journal 17, no. 1.
- Barrett, E. and B. Bolt. (2007). 'Practice as Research: Approaches to Creative Arts Enquiry'. London and New York: I. B. Tauris.
- Bennett, C. I. (1986/1990/1995/1999). 'Comprehensive multicultural education: Theory and practice' (Editions 1-4). Needham Heights, MA: Allyn & Bacon.
- \_\_\_\_\_. (2001). 'Genres of Research in Multicultural Education. Source: Review of Educational Research', Vol. 71, No. 2 pp. 171-217. American Educational Research.
- Bhabha, H. K. (1994). 'The location of culture'. Routledge. New York.
- Bhatkhande, V, N. (1993). 'Hindustani Sangeet - Paddhati (Vol 1 - 4): Kramik Pustak Malika' Sangeet Karyalaya. Hathras, India.
- Bohlman, P. V. (2002). 'World music: A very short introduction'. Oxford University Press: New York.
- Booth, G.D. (2005). 'Vintage Tabla Repertory' Review. *Asian Music*, 36(2), 108-109,129
- \_\_\_\_\_. (1986). 'The Oral Tradition In Transition: Implications For Music Education From A Study Of North Indian Tabla Transmission (India)' (8628932 Ph.D.), Kent State University, Ann Arbor.

- \_\_\_\_\_. (1991). 'Disco "Laggi": Modern Repertoire and Traditional Performance Practice in North Indian Popular Music' *Asian Music*, 23(1), 61-83. doi: 10.2307/834378.
- Bor, J. (1999). *The Raga Guide*. Halifax: Nimbus Communications International Limited.
- Braembussche, Van Den, Kimmerle, and Note. (2009). 'Intercultural Aesthetics: An Introduction' In *Intercultural Aesthetics a Worldview Perspective*, Brussels: Springer Science + Business Media B.V.
- Burnard, P, Mackinlay, E and Powell, K. (2016). *The Routledge International Handbook of Intercultural Arts Research* Milton Park: Routledge Publishing.
- Byrne, D. (1999). Crossing Music's Borders: 'I Hate World Music'. The New York Times.
- Campbell, P, S. (2004). *Teaching music globally: Experiencing music, expressing culture*. Oxford, UK: Oxford University Press.
- Chatterjee, S. (2006). *A Study of Tabla*. New Jersey: Chhandayan.
- Chordia, P. (2006). 'Automatic transcription of tabla music' (3197420 Ph.D.), Stanford University, Ann Arbor.
- Claman, David Neumann (2002). *Western Composers and India's Music: Concepts, History, and Recent Music* PhD Thesis, Princeton.
- Clayton, M. (2000). *Time in Indian Music: Rhythm, Meter, and Form in North Indian Rag Performance*. New York: Oxford University Press.
- \_\_\_\_\_. *Local Practice, Global Network: The Guitar in India* (2009). In *Theorizing the Local: Music, Practice, and Experience in South Asia and Beyond*, edited by Richard K. Wolf. Oxford and New York: Oxford University Press
- Connell, J and Gibson, C. (2004). 'World music: deterritorializing place and identity'. In *Progress in Human Geography* 28, 3 pp. 342–361
- Cottrell, S. (2007). 'Local Bimusicality Among London's Freelance Musicians'. *Ethnomusicology*, 51(1): 85-105.
- Courtney, D. (2001). *Learning the Tabla* Fenton, MO: Mel Bay Publications.
- \_\_\_\_\_. (2003). *A Focus on the Kaidas of Tabla*. Texas: Sur Sangeet Services.
- Dalgleish, M. (2013). 'A contemporary approach to expressiveness in the design of digital musical instruments' (U603798 Ph.D.) Ann Arbor: University of Wolverhampton.
- Diethrich, G. M. (1995). *The art of North Indian tabla drumming: Adaptations to the African-American drumset tradition* (1374580 M.A.), Ann Arbor: San Jose State University.
- Dutta, A. (1984). *Tabla, Lessons and Practice*. Calcutta: Janabani Printers & Publishers.
- Erlmann, V. (1996). *The Aesthetics of the Global Imagination: Reflections on World Music in the 1990's*. *Public Culture* (Spring): 481.

- Farrell, G. (1998). 'Reflecting Surfaces: The Use of Elements from Indian Music in Popular Music and Jazz'. *Popular Music* 7, no. 2.
- . (1997). *Indian Music and the West*. Oxford: Oxford University Press.
- Feld, S. (1984). 'Sound Structure as Social Structure' *Ethnomusicology* 28, no. 3.
- Feldman, J, M. and Rakha, A. (undated). *Learning Tabla with Allah Rakha*. Los Angeles: Ravi Shankar Music Circle.
- Floyd, M. (1996). *World Musics in Education*, London: Scolar Press.
- Frith, S. (1989). *World Music, Politics and social change*' ed. Simon Frith. Manchester and New York: Manchester University Press.
- Garzoli, J. (2014). *'Intonational, Idiomatic, And Historical Factors That Shape Contemporary Thai Fusion Music'* Ph.D. Thesis. Melbourne: Monash University.
- Gottlieb, R, S. (1973). *'42 Lessons for Tabla'*. New York: Folkways Record and Service Corp.
- . (1977.a). *'The Major Traditions of North Indian Tabla Drumming: Commentary'* Munchen: Musikverlag Emil Katzwichler.
- . (1977.b) *'The Major Traditions of North Indian Tabla Drumming: Transcriptions'* Munchen: Musikverlag Emil Katzwichler.
- . (1993). *'Solo Tabla Drumming of North India: Its Repertoire Styles and Performance Practices'*. Delhi: Motilal Banarasidass Publishers.
- Hall, S. (1991). *'The Local and the Global: Globalisation and Ethnicity in Culture Globalisation and the world system'* in *'Culture, Globalisation and the World System'* ed. King, A. New York: State University of New York.
- Herndon, M. (1974). *'Analysis: Herding of Sacred Cows'*. *Ethnomusicology* 18/2: 219-62
- Hijleh, M. (2012). *'Towards a global music theory practical concepts and methods for the analysis of music across human cultures'*. Farnham: Ashgate Publishing.
- Hood, M. (1960). *'The Challenge of Bimusicality'*. *Ethnomusicology*, v.4/2.  
<http://dx.doi.org/10.2307/924263>.
- Jairazbhoy, N. A. (1971). *'The rags of North Indian music: their structure and evolution'*. London: Faber and Faber Ltd.
- Jha, N. (1983). *'Tal Prabhand: Panch Talon Men Yaman-Kalyan'*. Hathras: Sangeet Karyalaya.
- Johnson, H. (2013). 'Contemporary Approaches to Transcultural Music Research in Australia and New Zealand'. *Musicology Australia* 35(1): 1-2.
- Jordan, S. (2010). *'Introduction'* in *'World Music: Global Sounds in Australia'*, ed. Seth Jordan. Sydney: University of New South Wales Press.

- Kartomi, M and Blum, S. (1994). *'Music-Cultures in Contact: Convergences and Collisions'* Sydney: Currency Press.
- Kartomi, M. (1981). *'The processes and results of musical culture contact: a discussion of terminology and concepts'*. Ethnomusicology 25, No.2 227-49.
- Katz, J. (1994). *'The Life of Music in North India: The Organisation of an Artistic Tradition'* JASO, 25(1), 124-125.
- Kippen, J.R. (1985). *'The traditional tabla drumming of Lucknow in its social and cultural context'* (U352152 Ph.D.). Ann Arbor: Queen's University Belfast.
- \_\_\_\_\_. (1998). *'The Tabla of Lucknow: A Cultural Analysis of a Musical Tradition'*. New Delhi: Manohar Publishers.
- \_\_\_\_\_. (2001). *'Folk Grooves and Tabla Tals'*. Echo: a music-centered journal, 3 (1) Los Angeles: University of California
- \_\_\_\_\_. (2002). Review: *'Wajid Revisited: A Reassessment of Robert Gottlieb's "Tabla" Study, and a New Transcription of the Solo of Wajid Hussain Khan of Lucknow'*. Asian Music 33 (2): 111-166.
- \_\_\_\_\_. (2006). *'Gurudev's drumming legacy: music, theory and nationalism in the Mrdaing aur tabla vādanpaddhati of Gurudev Patwardhan'*. Oxford: Taylor and Francis Limited.
- \_\_\_\_\_. (2007). *'Tal Paddhati of 1888: An Early Source for Tabla'*. Journal of the Indian Musicological Society, 38: 146-234.
- Kraidy, M. (2005). *'Hybridity, or the cultural logic of globalization'*. Temple University Press: Philadelphia, PA.
- Krüger, S and Trandafoiu, R. (2014). *'The globalization of musics in transit: music migration and tourism'*. London: Routledge.
- Lavezzoli, Peter. (2006). *'The Dawn of Indian Music in the West'*. New York and London: Continuum International Publishing Group.
- Leake, J. (1993). *'Series A.I.M. Percussion Text Volume II Indian Influence (Tabla Perspectives)'*. Boston, MA: Rhombus Publishing.
- \_\_\_\_\_. (1989). *'Drum Set Adaptions of North Indian Tabla'*. Boston, MA: Rhombus Publishing.
- Lehmann, A.C, et al. (2007). *'Psychology for musicians: Understanding and acquiring the skills'*. New York: Oxford University Press.
- Levi, E and Scheduling, F. (2010). *'Music and displacement: diasporas, mobilities, and dislocations in Europe and beyond'*. Maryland: Scarecrow Press.
- Lindsey, M. (2013). *'The Karnatik Tabla: Cross-cultural music synthesis in South Indian percussion performance'* Ann Arbor: University of California.

- Lo, J and Gilbert, H. (2002). *Toward a Topography of Cross-Cultural Theatre Praxis*. TDR/The Drama Review. 46 (3): 31-53.
- Lybarger, L. (2003). *The Tabla Solo Repertoire of Pakistani Panjab - An Ethnomusicological Perspective* University of Toronto, (Ph.D. Dissertation).
- Macarthur, S. (2007). *Intercultural Music: Creation and Interpretation*. Sydney: Australian Music Centre.
- Mainkar, S. (2008). *Aesthetics of Tabla*. New Dehli, Saraswait Publication.
- Mall, R. A. (2010). *India and Intercultural Aesthetics*, in *Handbook of Phenomenological Aesthetics* ed. Sepp and Embree. New York and London: Springer.
- Marcus. S. (2004). *Creating a community, negotiating among communities*, in *Performing ethnomusicology – teaching and representation in world music ensembles* ed. T. Solis. Berkeley, CA: University of California Press.
- McGregor, R. S. (1993). *The Oxford Hindi-English Dictionary*. London: Oxford University Press.
- Michalko, M. (1998). *Thinking like a genius: Eight strategies used by the supercreative, from Aristotle and Leonardo to Einstein and Edison* The Futurist 32 (4): 21-25.
- \_\_\_\_\_. (1991). *Thinkertoys: A Handbook of Business Creativity*. California: Ten Speed Press.
- \_\_\_\_\_. (2001). *Cracking Creativity: The Secrets of Creative Genius*. California: Ten Speed Press.
- Miller, T. and Shahriari, A. (2006). *World music: a global journey*. New York: Routledge.
- Mistry, A, E. (1999). *Pakhawaj and Tabla: History, Schools and Traditions*. Mumbai: Munshriram Manoharlal Publishers.
- Mishra, C. (1981). *Tal Prasun*. Hathras: Sangeet Karyalaya.
- Mishra, V. (1992). *Tal Purana* Hathras: Sangeet Karyalaya.
- Mitchell, T. (1993) *World Music and the Popular Music Industry: an Australian view* Ethnomusicology 37: 310.
- Naimpalli, S. (2005). *Theory and Practice of Tabla*. Mumbai: Popular Prakashan.
- Nayar, S. (1989). *Bhatkhandes Contribution to Music*. Mumbai: Popular Prakashan.
- Nelson, D. (1991). *Mrdangam mind: The 'tani avartanam' in Karnatak music* (Volumes I-III) (Ph.D. Dissertation) Connecticut: Wesleyan University.
- \_\_\_\_\_. (2008). *Solkattu Manual: An introduction to the rhythmic language of south Indian music* Connecticut: Wesleyan University Press.

- Nelson, R. & Andrews, S. (2003). *Practice as research: Regulations, protocols and guidelines*  
Retrieved from the Higher Education Authority website  
<http://78.158.56.101/archive/palatine/files/903.pdf>
- Nettl, Bruno. (1978). 'Some Aspects of the History of World Music in the Twentieth Century: Questions, Problems, and Concepts'. *Ethnomusicology* 22 (1): 123-136.
- Neuman, D. M. (1980). *The Life of Music in North India: The Organization of an Artistic Tradition*. Detroit: Wayne State University Press.
- \_\_\_\_\_. (1985). 'Indian Music as a Cultural System'. *Asian Music*, 17(1): 98.
- \_\_\_\_\_. (2015). *Studying India's Musicians: Four Decades of Selected Articles*. New Delhi: Manohar Publishers and Distributors.
- Nuttall, D. (2011). 'Tracking the Intercultural Borders, Fusions, Traditions and the Global Art of Tabla'. *Journal of the Indian Musicological Society*. 41: 16-30.
- \_\_\_\_\_. (1998). *Embodying Culture: Gurus, disciples and tabla players*. (NQ27219 Ph.D.), Ann Arbor: The University of British Columbia (Canada).
- Pradhan, Aneesh. (2011). 'Fusion Music' *Journal of the Indian Musicological Society*, Accessed 14th May, 2011 <http://www.readperiodicals.com/201101/2692214841.html>
- \_\_\_\_\_. (2011). *Tabla: A Performer's Perspective*. New Delhi: Underscore Records.
- Redfield, R., Linton, R. and Herkovits, M. J. (1936). 'Memorandum for the study of acculturation' *American Anthropologist*, 38: 149 – 152.
- Reimer, B. (2002). *Excursions in world music*. Upper Saddle River, NJ: Prentice Hall.
- \_\_\_\_\_. (2002). *World Music and Music Education: Facing the Issues*. Maryland: Rowman & Littlefield Education.
- Roach, D. (1972). 'The Banaras Baj - The Tablā Tradition of a North Indian City'. *Asian Music*, 3(2): 29-41. doi: 10.2307/833957.
- Roda, A. (2015). 'Ecology of the Global Tabla Industry'. *Ethnomusicology*, 59 (2): 315-336.
- Rossing, T. (2000) *Science of percussion instruments*. Singapore: World Scientific publishing company.
- Ruckert, G. (1995). Review: [untitled] Reviewed work: *Solo Tabla Drumming of North India* by Robert S. Gottlieb. *Asian Music*, 26 (1): 221-225
- Said, E. W. (1978). *Orientalism* (1st Vintage Books ed.). Pantheon Books: New York.
- Sam, D and Berry, J. (2006). *The Cambridge Handbook of Acculturation Psychology*. Cambridge: Cambridge University Press.
- Saxena, S, K. (2007). *The Art of Tabla Rhythm: Essentials, Tradition and Creativity*. New Delhi: Sangeet Natak Akademi.
- Sharma, B, S. (1973). *Taal Prakash* Hathras: Sangeet Karyalaya.

- \_\_\_\_\_. (1977). *'Taal Shastra'*. Aligarh: B. A. Electric Press.
- Shepherd, F. A. (1976). *'Tabla and the Benares Gharana'* Ann Arbor: University Microfilms International. (Ph.D. Dissertation).
- Shrivastava, G, C. (1978). *'Taal Parichay'* (vol. 1). Allahabad: Sangeet Press.
- \_\_\_\_\_. (1979) *'Taal Parichay'* (vol. 2). Allahabad: Sangeet Press.
- Skiba, N. (1994). *'Creation, form, and tradition: A cybernetic study of North Indian tabla drumming'*. (9430998 Ph.D.) Ann Arbor: Wesleyan University.
- Smith, S and Dean, R. (2010). *'Practice-led Research, Research-led Practice in the Creative Arts'*. Edinburgh: Edinburgh University Press.
- Solis, T. (2004). *'Performing Ethnomusicology: Teaching and Representation in World Music Ensembles'*. Berkeley and Los Angeles: University of California Press.
- Strazzullo, G. (2014). *'An inquiry into improvisation: reconciling the differences between performance and composition'*. PhD Thesis. Macquarie University, Australia.
- Stewart, R. (1974). *'The Tabla in Perspective'* (Ph.D. dissertation) Los Angeles: University of California.
- \_\_\_\_\_. (1975). Review: [untitled] Reviewed work: *'42 Lessons for Tabla'* by Robert, S. Gottlieb. *Ethnomusicology* 19 (1): 159-161.
- Swift, N. (1989). *'The Violin as Cross-Cultural Vehicle: Ornamentation in South Indian Violin and Its Influence on a Style of Western Violin Improvisation'*. PhD Thesis, Wesleyan University.
- Sze, F. (2004). How Interculturalism Performs: Performativity, Performability and Theatricality of Interculturalism. in *'Interculturalism: Exploring Critical Issues'*. Ed. Powell and Sze. New York: Inter-Disciplinary Press.
- Talwalker, S. (2009). *'Modes of Expression of Art of Tabla through laghu kal Unit of Laya'* *Journal of the Indian Musicological Society*. 40: 218-219, 273-274.
- Thompson, G. (1995). Book Reviews: *'Solo Tabla Drumming of North India: Its Repertoire, Styles, and Performance Practices'*, by Robert S. Gottlieb. *Yearbook for Traditional Music*, 27: 146-148.
- Taylor, T. (1997) *'Global Pop: World Music, World Markets'*. London: Routledge.
- Teicher, J. (1995) *'The Children of the Thyagaraja Festival: A Study in Bimusicality and Cultural Identity'*. *The Quarterly*. 6: 3
- Tenzer, M and Roeder, J. (2011) *'Analytical and cross-cultural studies in world music'* London: Oxford University Press.
- Tenzer, M. (2006). 'Analysis, Categorization, and Theory of Musics of the World' in *'Analytical Studies in World Music'*, ed. M. Tenzer. New York: Oxford University Press.

- Titon, J.T. (1996). *Worlds of music: An introduction to the music of the world's peoples*. New York: Schirmer Books.
- \_\_\_\_\_. (1995). *Bi-musicality as metaphor*. *Journal of American Folklore*, 108(429): 287. Retrieved from <http://search.proquest.com/docview/198453824?accountid=12528>.
- Vashisth, S, N. (1977). *Taal Martand*. Hathras: Sangeet Karyalaya.
- \_\_\_\_\_. (1981). *Kaidaa aur Peshkaar*. Hathras: Sangeet Karyalaya.
- \_\_\_\_\_. (1982). *Aprachalit Kaiyade aur gaten*. Hathras: Sangeet Karyalaya.
- Wade, B. (1984) *Khyal: Creativity Within North India's Classical Music Tradition*. Cambridgeshire: Cambridge University Press.
- \_\_\_\_\_. (1993). *Text, Tone and Tune: Parameters of Music in Multicultural Perspective*. New Delhi: Oxford and IBH Publishing Co.
- Wegner, G. (2004). *Vintage Tabla Repertory: Drum Compositions of North Indian Classical Music* New Delhi. Munshiram Manoharlal Publishers.
- Whitman, D. R. (2011). *Two lecture recitals of percussion music: 'Notation for Stroke-Type Analyses' and 'Tabla and Indian Musical Concepts in Modern Drum Set Performance'* (3455462 D.M.A.) Ann Arbor: The University of Southern Mississippi.
- Williams, M. T. (2013). *The styles of percussionist Bob Becker: Combining and performing disparate eastern and western musical traditions from Indian tabla and rudimental snare drumming to ragtime* (1523326 M.M.), Ann Arbor: California State University.
- Williamon, A. (2004). *Musical Excellence: Strategies and techniques to enhance performance*. London: Oxford University Press.
- Wren, T. (2015). *Improvising Culture: Discursive Interculturality as a Critical Tool, Aesthetic, and Methodology for Intercultural Music*. PhD Thesis. Griffith University, Australia.
- Wong, P. C. M., Roy, A. K., and Margulis, E. H. (2009). *Bimusicalism: the implicit dual enculturation of cognitive and affective systems* *Music Perception*, 27(2): 81-88. Retrieved from <http://search.proquest.com/docview/222217666?accountid=12528>.
- Yadav, B, L. (1991) *Tabla Prakash* Part: 1, 2 and 3. Hathras: Sangeet Karyalaya.
- Young, L. (2015). *The Eternal Pulse: Creating with konnakol and its adaptation into contemporary vocal performance*. PhD Thesis. Monash University, Australia.

**Discography**

- Amaradeva, W. D. (2014). *Swarna Vimanaya*, CD Recording. Sri Lanka: Torana Music
- Autorickshaw. (2004). *Four Higher* (tabla: Ed Hanley), CD recording. Toronto, Canada: Tala-Wallah Records.
- \_\_\_\_\_. (2006). *So The Journey Goes* (tabla: Ed Hanley), CD recording. Toronto, Canada: Tala-Wallah Records.
- BAK. (2012). *Painter* (tabla: Sam Evans), CD recording. Independent release.
- \_\_\_\_\_. (2011). *Sculpture* (tabla: Sam Evans), CD recording. Independent release.
- Beatles. (1966). 'Love You To', on *Revolver*, CD recording. London: Parlophone.
- \_\_\_\_\_. (1967). 'Within You Without You', on *Sgt. Pepper's Lonely Hearts Club Band*, CD recording. London: Parlophone.
- Beginner's Guide to India* (2010). CD recording. UK: Nascente Records.
- Burhoe, Ty. (2009). *Curandero Aras*. CD recording. USA: Tala Records.
- \_\_\_\_\_. (2005). *Sky*. CD recording. USA: Tala Records.
- Chandra, Sheila. (1983). *Ever So Lonely* (tabla: Martin Smith), CD recording. Polygram.
- Chatterjee, Anindo. (2007). *Battements Au Coeur De l'Orient*, CD recording. France: Accords Croisé.
- Das, Krishna. (2008). *Heart Full of Soul* (tabla: Arjun Bruggeman), CD recording. Netzwerk Productions.
- \_\_\_\_\_. (2010). *Heart As Wide As The World* (tabla: Arjun Bruggeman), CD recording. Nutone Music.
- \_\_\_\_\_. (2011). *Chants of a Lifetime – Searching for a Heart of Gold* (tabla: Arjun Bruggeman), CD recording. Hay House.
- Edouard, Prabhu. (2009). *Saiyuki*, CD recording. Munich, Germany: ACT.
- \_\_\_\_\_. (2016). *Kôlam*, CD recording. France: Lokanga.
- Evans, Sam. (2018). *The Tabla Project*, CD Recording. Available from iTunes.
- \_\_\_\_\_. (2016). *The Slide Project*, CD Recording. Available from iTunes.
- Fine Blue Thread. (2009). *Red Mountain* (tabla: Sam Evans), CD recording. Australia: Soundvault.
- \_\_\_\_\_. (2016). *Blueprint* (tabla: Sam Evans), CD recording. Available from iTunes.

- \_\_\_\_\_. (2010). In, *A Beginners Guide to India: CD 1 – India NOW*, Nascente Records.
- Ghosh, Bikram. (2003). *RhythmScape*, CD recording. Navaras Records, available on iTunes.
- Gurtu, Trilok. (1997). *Living Magic*, CD recording. Germany: CMP Records.
- \_\_\_\_\_. (2001). *The Beat of Love*, CD recording. Verve Music Group, available on iTunes.
- \_\_\_\_\_. (2004). *Miles Gurtu*, CD recording. UK: Salt Records.
- \_\_\_\_\_. (2009). *Massical*, CD recording. Germany: BHM Productions.
- Hussain, Shaukat. (1994). *Madar*. CD recording. Munich, Germany: ECM.
- Hussain, Zakir. (1972). *Rolling Thunder*, CD recording. Burbank CA: Warner Bros.
- \_\_\_\_\_. (1976). *Diga*, CD recording. USA: Round Records.
- \_\_\_\_\_. (1987). *Making Music*, CD recording. Munich: ECM.
- \_\_\_\_\_. (1990). *At the Edge*, CD recording. USA: Rykodisc.
- \_\_\_\_\_. (1990). *The One and Only*, CD recording. France: EMI records.
- \_\_\_\_\_. (1991). *Planet Drum*, CD recording. USA: Rykodisc.
- \_\_\_\_\_. (1993). *Flights of Improvisation*, CD recording. New York: Lyrichord Discs.
- \_\_\_\_\_. (1993). *Music of the Deserts*, CD recording. India: Living Media India.
- \_\_\_\_\_. (1996). *Mickey Hart's Mystery Box*, CD recording. USA: Rykodisc.
- \_\_\_\_\_. (1996). *The Elements – Space*, CD recording. India: Music Today.
- \_\_\_\_\_. (1998). *Supralingua*, CD recording. USA: Rykodisc.
- \_\_\_\_\_. (1998). *Night Spinner*, CD recordings. USA: Moment Records.
- \_\_\_\_\_. (1998). *Firedance*, CD recording. USA: Mythos Records.
- \_\_\_\_\_. (1998). *And the Rhythm Experience*, CD recording. Germany: Aspen Records.
- \_\_\_\_\_. (1999). *Spirit into Sound*, CD recording. USA: Grateful Dead Records.
- \_\_\_\_\_. (2000). *The Believer*. CD recording. Santa Monica: Verve Records.
- \_\_\_\_\_. (1991). *Zakir Hussain and The Rhythm Experience* CD. Recording. Moment Records.
- \_\_\_\_\_. (2002). *Summit*, CD recording. USA: Earth Brothers Music BMI.

- \_\_\_\_\_. (2002). *The Best of Mickey Hart: Over the Edge and Back*. CD recording. USA: Rykodisc.
- \_\_\_\_\_. (2004). *Live at Miles Davis Hall*. CD recording. Switzerland: Warner Music.
- \_\_\_\_\_. (2004). *Live at 38<sup>th</sup> Montreux Jazz Festival*. Switzerland: Warner Music.
- \_\_\_\_\_. (2006). *Dha Ge Na Step* <https://www.youtube.com/watch?v=pNtpqj7ij0g>  
Accessed 21 October, 2016.
- \_\_\_\_\_. (2007). *Global Drum Project*, CD recording. Los Angeles: Shout! Factory.
- \_\_\_\_\_. (2009). *The Melody of Rhythm*, CD recording. USA: Koch Records.
- \_\_\_\_\_. (2012). *Mysterium Tremendum*, CD recording. USA: 360° Productions.
- \_\_\_\_\_. (2016). *Peshkar – Concerto for Tabla*. Concert: Royal Festival Hall, May 20<sup>th</sup>, 2016.
- Khan, Nusrat Fateh Ali. (1990). *Mustt Mustt* (tabla: Dildar Hussein), CD recording Real World.
- Keller, Stefan. (2011). *Stefan Keller: Composition for Tabla solo and live electronics*, online video: [https://www.youtube.com/watch?v=\\_A2i\\_kGW3TM](https://www.youtube.com/watch?v=_A2i_kGW3TM), accessed 9 October 2016.
- Lamb. (1996). *Lamb* (track 9: Górecki) CD recording. Mercury/Universal
- Lloyd, Charles. 2006. *Sangam* (tabla: Zakir Hussain). CD recording. Munich: ECM.
- Lockett, Pete. (2009). *Pete Lockett's Journey With The Masters Percussionists of India*, CD recording. Living Media India, available on iTunes.
- \_\_\_\_\_. (2010 a). *About Time*, CD recording. Drumzine, available from iTunes.
- \_\_\_\_\_. (2010 b). *Seventh Element of Glaciers*, CD recording. ARC
- Mativetsky, Shawn. (2014). *Payton MacDonald's 4<sup>th</sup> Concerto for Tabla and Percussion Quartet; Shawn Mativetsky, tabla solo*, online video: <https://www.youtube.com/watch?v=OazBX8hDDGE>, viewed 9 October 2016.
- \_\_\_\_\_. (2011). *Cycles: New Music for Tabla* CD Recording. Ombu Productions.
- Mukti. (2016). *Inside In* (Tabla: Vick Ramakrishnan) Independent release.
- Oregon. (1987). *Ecotopia* (Tabla: Trilok Gurtu), CD recording. Munich, Germany: ECM.
- Pradhan, Aneesh. (1995). *Mixed Spice*, CD recording. Red Hill, Australia: New World Productions.
- Prasad, Samta. (1963). *Meri Surat Teri Ankhen* Film recording. India.
- \_\_\_\_\_. (1975). *Sholay* Film recording. India.
- Qureshi, Taufiq. (1993). *Damini* Film Recording. India.

- \_\_\_\_\_. (2007). *Jab We Met*. Film Recording. India.
- Rajput, Prithpal. (2011). *Tabla Rock* (Shawn Lee's Incredible Tabla Band), CD recording. USA: Ubiquity.
- Roy, Badal. (1970). *My Goals Beyond*, CD recording. Available on iTunes.
- \_\_\_\_\_. (1972). *On the Corner*, CD recording. New York: Columbia Records.
- \_\_\_\_\_. (1974). *Big Fun*, CD recording. New York: Columbia Records.
- \_\_\_\_\_. (1997). *One in the Pocket*, CD recording. USA: The Orchard.
- Sanders, Pharoah. (1999). *Save Our Children*, (tabla: Trilok Gurtu and Zakir Hussain). CD recording. All Music.
- Sawhney, Nitin. (1999). *Beyond Skin* (Tabla: Aref Durvesh), CD recording. UK: Outcaste Records.
- \_\_\_\_\_. (2005). *Philtre* (Tabla: Aref Durvesh), CD recording. UK: V2.
- Shakti. 1975. *Shakti* (tabla: Zakir Hussain), CD recording. New York: Columbia Records.
- \_\_\_\_\_. (1976). *A Handful of Beauty* (tabla: Zakir Hussain). CD recording. New York: Columbia Records.
- \_\_\_\_\_. (1977). *Natural Elements* (tabla: Zakir Hussain). CD recording. New York: Columbia Records.
- \_\_\_\_\_. (1999). *Remember Shakti* (tabla: Zakir Hussain). CD recording. Santa Monica: Verve Records.
- \_\_\_\_\_. (2001). *Sunday Night in Bombay* (tabla: Zakir Hussain). CD recording. Santa Monica: Verve Records.
- Shankar. (2000). *Eternal Light* (tabla: Zakir Hussain), CD recording. Moment Records.
- Singh, Bobby. (2007). *Grand National* (John Butler Trio), CD recording. Perth: Jarrah Records.
- \_\_\_\_\_. (2010). *Djan Djan*, CD recording. Australia: Instrumental Recordings.
- \_\_\_\_\_. (2013). *Improvisations*, CD recording. Australia: Australian Broadcasting Corporation.
- Singh, Talvin. (1998). *OK*, CD recording. UK: Island Records.
- \_\_\_\_\_. (2011). *Together*, CD recording. UK: United Sound.
- Sting. (2003). *Sacred Love* (tabla: Aruf Dervesh), CD recording. UK: A&M.
- Stringer, Dave. (2015). *Bhakti without Borders* (tabla: Patrick Richey), CD recording. Magnetic Melodies BMI.

- Suphala. (2007). *Blueprint*, CD recording. USA: Suphala Productions.
- \_\_\_\_\_. (2011). *Instru Mental* (tabla: Suphala Patankar), CD recording. US: Suphala.
- Tabla Beat Science. (2000). *Tabla Matrix* (tabla: Zakir Hussain), CD recording. USA: Palm Pictures.
- \_\_\_\_\_. (2002). *Tabla Beat Science – Live in San Francisco at Stern Grove* (tabla: Zakir Hussain), CD recording. USA: Palm Pictures.
- Tool. (2000). *Salival* (Tabla: Daniel Carey), CD recording. New York, USA: Volcano Records.
- \_\_\_\_\_. (2001). *Lateralus* (Tabla: Daniel Carey), CD recording. New York, USA: Volcano Records.
- \_\_\_\_\_. (2006). *10,000 Days* (Tabla: Daniel Carey), CD recording. New York, USA: Volcano Records.
- Twelve Foot Ninja. (2016). *Outlier* (Tabla: Sam Evans), CD recording. Volkanik Music.
- U-Zhaan. (2011a). *U-zhaan × rei harakami - vol.2*, online video, <https://www.youtube.com/watch?v=4Yo87XkRzoQ>, accessed 9 October 2016.
- \_\_\_\_\_. (2011b). *Tabla, Tabla & Tabla*, CD recording. Available from iTunes.
- \_\_\_\_\_. (2014). *Tabla Rock Mountain*, Golden Harvest Recording.
- Weiss, Dan. (2005). *Tintal Drumset Solo*, CD recording. Chhandayan, available on Spotify.
- \_\_\_\_\_. (2008). *Apti*, CD recording. New York, USA: PI Recordings.
- Wertheimer, Benji. (2003). *Anjali*, CD recording. Ancient Future Records.