

The University of Adelaide

Faculty of Arts

Elder Conservatorium of Music

**The Piano as Kolokola, Glocken and
Cloches: performing and extending
the European traditions of bell-
inspired piano music.**

Portfolio of recorded performances and exegesis

Submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

by

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ABSTRACT

Kolokola, Glocken and Cloches, collectively known as bells in Russian, German and French respectively, are embedded in music emanating from these European traditions. This performance-based project has been the first to explore the traditions of bell sounds in these regions and their significance for piano repertoire, and investigates the technical and interpretative challenges faced by pianists when simulating bell sounds.

In the context of piano performance, this research explores pianistic and compositional techniques by identifying links and similarities when recreating bell sounds between various composers from Eastern, Central and Western Europe. It addresses ways of communicating the varying harmonic and rhythmic bell effects of the Russian, German and French traditions, and suggests how pianists can best interpret the bell sonorities represented in each work utilising pedalling, articulation, touch and chord balancing techniques.

Being the first study of its kind to explore technical aspects of reproducing various bell sonorities between these three regions through piano performance, this research aims to enhance the field of pianistic performance technique and to aid performers with the interpretation of bell sounds and pianistic bell sonorities, both explicit and implicit. The primary outcome of this project is a collection of four CDs of recorded performances, and the collection is supported by an explanatory exegesis. The CD recordings include works for solo piano and two pianos by: Mussorgsky, Borodin, Rachmaninov, Scriabin, Liszt, Wagner, Debussy, Blumenfeld, Franck, Ravel, Messiaen, Murail, Enescu, and Bodman Rae.

DECLARATION

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide.

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INTRODUCTION

My interest in the topic of bells in piano repertoire began in 2012, when I was asked to play a bell-dedicated recital as part of that year's Adelaide Festival. In this fifty-minute recital, I presented works by Rachmaninov, Scriabin and Ravel, as well as the world première of *Golden Ring* by Charles Bodman Rae. As I prepared for the recital, I started to uncover certain pianistic questions which would lead me to this research. I began to think about how to imitate the sound of bells on the piano acoustically and technically; and the beginnings of how successfully to program such a recital started to form in my mind.

The title of this project is an adaptation of the title used for a series of programmes written and presented for BBC Radio 3 in 1990: *Glocken, Cloches, Kolokola*, by Charles Bodman Rae.¹ This tri-lingual title encapsulated the idea of juxtaposing and comparing the bell-inspired musical repertoire of Germany, France, and Russia. The original nine-hour BBC series had included orchestral and even choral-orchestral works as well as piano repertoire, but for this doctoral project the focus was narrowed just to works for solo piano and for two pianos.

The tri-lingual title for the BBC series did not include the English word 'Bells', and neither does the title for this doctoral research investigation. The deliberate omission of the English word, and the deliberate omission of the English tradition (of Change Ringing) requires some explanation.

¹ Bodman Rae's three three-hour programmes were first broadcast as follows: *Glocken*, on 23 January 1990; *Cloches*, on 30 January 1990; and *Kolokola*, on 6 February 1990. There was also an introductory feature on the series broadcast within the Radio 3 'magazine' programme, *Music Weekly*, on 21 January 1990. All four programmes were produced by the late Andrew Lyle, and were written and presented by Charles Bodman Rae. The entire series was re-broadcast by BBC Radio 3 in 1991.

When bells and bell-ringing are mentioned to an English-speaking audience the term Change Ringing comes to mind, along with the associated expression "Ringing the Changes". This tradition of carefully controlled bell-ringing developed in England during the Restoration period of Charles II, and was a very public manifestation of the new, non-Puritan attitude to public assembly and to worship.² Through the eighteenth-century the tradition developed to a sophisticated level, with teams of bell-ringers practising and performing complex patterns according to number permutations. The essential feature of English Change Ringing is that each bell is intended (bar the occasional accident or miscalculation) to sound on its own and to have its own unique position in the number sequence. The bells in this tradition are not intended to produce harmonies and instead produce short 'rhythmic melodies'. There are pieces that reflect this tradition, perhaps the most celebrated being the Sunday Morning passage from the Sea Interludes by Benjamin Britten, from his opera *Peter Grimes*. Several other English composers have explored change ringing techniques, most notably Sir Peter Maxwell Davies,³ Sir Harrison Birtwistle,⁴ and Dr Anthony Gilbert.⁵ Their bell-inspired pieces are not generally for piano, perhaps because of the non-chordal character of the English bell-ringing tradition. Therefore that tradition sits outside the present study.

² Significantly, the first book on English Change Ringing dates from the Restoration period: F. Stedman, *Campanologia* (London: Bettesworth and Hitch, 1677). Two works of the 1950s by Sir Peter Maxwell Davies make reference in their titles to particular change ringing permutation sequences by Stedman.

³ For example *Stedman Doubles*, for clarinet and percussion (1955), and *Stedman Caters*, for instrumental ensemble (1968).

⁴ For example, *Ring A Dumb Carillon* (1965). Change ringing permutations occur widely in the music of Birtwistle, for example, in his opera *The Mask of Orpheus*.

⁵ For example, *Those Fenny Bells*, and *Word Chimes In The Wind* (1966-2015). Through his long career as Head of Composition at the Royal Northern College of Music in Manchester, Gilbert's techniques derived from changing ringing number permutations were to influence many composers of younger generations, such as Rob Godman whose website provides interesting links to his own publications on the subject (www.robgodman.com).

When considering the programming of my 2012 Adelaide Festival Recital, the inclusion of Russian works was obvious. As a Russian, I was already aware of some of the powerful bell resonances and bell symbolism in the Russian musical heritage. By instinct I made a link with the French tradition, and began a much longer exploration of the complex and fascinating Franco-Russian connections. The recital did not include any pieces from the Central-European, Germanic traditions as I was not yet fully aware of the powerful sounds produced by bells in the cathedrals and churches of Germany and other parts of Central Europe at that stage. This changed later in 2012 when I went to study in Freiburg-im-Breisgau at the Hochschule für Musik (which was then still located in the cathedral square) and over a period of three years regularly heard the bells of the Freiburg Munster.⁶ Those sonic encounters had great significance for the development of my musical awareness of bell sounds in non-French and non-Russian piano repertoire. I began to explore the bell sounds woven through various pieces by Liszt, several of which are included in this submission.⁷ Through my piano professor at the Freiburg Hochschule, Prof. Tibor Szasz, I came across a bell-inspired piece by George Enescu and worked with him on the pianistic technique needed to bring out the bell-sounds as notated in rhythmic and dynamic layers by Enescu.⁸ Slowly my ideas began to take shape, and I came to realise that there were several different European traditions of bell-inspired music. All of this was a gradual process, and took place over several years before embarking on this PhD project.

⁶ The sounds of these magnificent bells can be heard on a CD recording engineered and published by Andreas Philipp: *Die Glocken des Freiburger Münsters* (Freiburg: Philipp, 2001). The CD is available for direct purchase on site from the cathedral shop.

⁷ See the following tracks on the enclosed CDs: *Ave Maria*, CD 1 track 6; *Sposalizio*, CD 2 tracks 1 and 4; *Cloches de Geneve*, CD 3 track 3; *Carillon (Glockenspiel)*, CD 4 track 3; *Angelus*, CD 4 track 4.

⁸ See the recording of Enescu's *Choral and Carillon Nocturne* op.18 on CD 4 track 5.

As I started to investigate this subject and its repertoire more fully, I realised that there had been surprisingly little written about this topic from the musical perspectives of harmony and rhythm. There are historical studies about bells as artefacts, and such studies tend to have been written by art historians who consider bells as static and silent pieces of cultural history. There are numerous publications in English about the change ringing techniques of number permutations, and many such studies tend to have been written by mathematicians who also practice community bell-ringing. Two of the most interesting books in English to deal more comprehensively with the subject from an international perspective, rather than just from the perspective of the English tradition of change ringing, are *Bells Of All Nations* by Ernest Morris, and *Bells And Man*, by Percival Price. Morris writes perceptively about the sonic aspect of bells in various countries (as his title would suggest) , and although his approach is patchy in places he writes well about the particular places that interest him most.⁹ Percival Price was also a composer, and for many years served as the university carillonneur at the University of Michigan. The title of his book for Oxford University Press is very broad and all-encompassing in its scope, yet it does not disappoint.¹⁰ He gives reliable and scholarly accounts of the European and Asiatic traditions in terms of cultural history and organology, but he also includes comments about the sonic and musical aspects of bells sounded in collections (for example, when writing about the Russian Orthodox tradition). Price had written the article on ‘Bell’ for the first edition of *The New Grove Dictionary of Music and Musicians*, published in 1980. By the time the second edition was being compiled during the 1990s he was no longer able to contribute and had passed away by the time of publication in 2001. For this reason Charles Bodman Rae was commissioned by *The New Grove* to revise

⁹ *Bells Of All Nations* by Ernest Morris (London, 1951) has been out of print for several decades, but it can now be downloaded free in several files from the following bell-enthusiast website: www.whittingsociety.org.uk

¹⁰ Percival Price: *Bells and Man* (Oxford: Oxford University Press, 1983) 288pp.

and expand his article for the second edition. In this expanded version the article contains information, authored by Bodman Rae, on the musical differences of harmony and rhythm between the various European traditions.¹¹

There have been some studies in Russian, several of which date from the early years of the twentieth century before the outbreak of the First World War and before the Russian Revolution of 1917. That war witnessed the destruction of bells on a massive scale right across Europe, as they were melted down in order to supply metals for the manufacture of munitions. Many of those that remained in Russia after 1917 gradually succumbed to the anti-clerical attitudes of the Bolshevik regime. Apart from a few monastic outposts, the important bell collections were either broken up or remained silent. The spectacular displays of bell-chiming (in the Russian Orthodox tradition strictly speaking one should speak and write of chiming rather than ringing, because Russian bells do not swing) that took place on religious feast days in Moscow, St. Petersburg, Novgorod and other cities became a thing of the past. The bell-chiming that so impressed the young Stravinsky in St. Petersburg and which forms part of the characteristic rhythmic layering of motifs in the Shrovetide/Easter music of his ballet *Petrushka* was no longer as strong of an influence on composers of later generations (with some exceptions, such as Schnittke's *Variations on a Chord*). Similarly the bells of Novgorod (currently Veliky Novgorod), said to have made a strong impression on the young Rachmaninov, became an increasingly distant memory after the mid 1920s for those who still lived there. But for Rachmaninov, those memories became potent ingredients of his musical language. Although much of Russian bell history from 1917 to 1991 is both sad and silent, there is one heart-warming tale to be told: the story of the Lowell Bells at Harvard. This complete collection of 17 Russian bells from the Danilov monastery in Moscow was

¹¹ Percival Price and Charles Bodman Rae: 'Bell', in *The New Grove Dictionary of Music and Musicians*, edited by Stanley Sadie (London: Macmillan, 2001), vol3, 168-182.

purchased, rescued and transported to Harvard where it remained until replaced by a replica set thus enabling the original bells to be voluntarily repatriated in 2008.¹²

As a Siberian-born and Moscow-educated Russian, the Russian aspect of this project bears special significance for me. Born in the last decade of the Soviet Union, and trained in Moscow at the Gnessin Academy of Music, I was aware from a young age that bells formed a part of the Russian soundscape through their preservation in our musical repertory. Certain pieces were very evident: the last movement of Mussorgsky's *Pictures at an Exhibition* (see CD 1 track 7), the Op. 3 C sharp minor Prelude of Rachmaninov often referred to as 'The Bells of Moscow' (see CD 2 track 7), and the Coronation Scene of *Boris Godunov*.

However, I did not appreciate until quite recently the full extent of the bell-inspired sonorities in the music of Scriabin. It was not until I had analysed Mussorgsky's tritonal harmony in the Coronation Scene that I understood how Scriabin created many of his complex, multi-layered sound complexes in the piano sonatas. The inclusion of certain Scriabin sonatas in this submission is a significant feature of what this project aims to communicate through sound (see the following recordings: *Sonata No. 7 Op. 64*, CD 1 track 1; *Sonata No. 6 Op. 62*, CD 3 track 8; and *Sonata No. 9 Op. 64*, CD 4 track 9). In my performances of these works I have tried to articulate the bell sonorities - particularly those underpinned by tritones in the low register - in a much clearer and more direct way than many published recordings currently do. I hope that these bell-chiming sonorities can not only be intellectually understood but also heard. The Scriabin part of this musical journey has been investigated primarily through the

¹² The website of Lowell College gives a very interesting account of how the Danilov bells were acquired, how they became part of the soundscape of Harvard, how a replica set was made, and how the originals were repatriated after the fall of communism and the dissolution of the Soviet Union. <https://lowell.harvard.edu/bells>.

scores and through the music itself, but also via some writings (in Russian) by Sabaneyev,¹³ Feinberg,¹⁴ and Puchnatschow.¹⁵

A guiding revelation in this project was the manner in which George Enescu chose to notate the bell sounds in his Carillon piece (see CD 4 track 5). Much of this work contains parallel major sevenths, in order to simulate the joyfully dissonant effect of upper harmonics that are not 'in tune' with the fundamental below. Enescu fastidiously notated the differences in dynamic level between all the various melodic-harmonic layers of the musical texture. The only other work included in this submission to have a slightly similar characteristic in terms of notational precision of dynamic layers is the final movement of Messiaen's monumental *Visions de l'Amen: Amen de la Consommation* (see CD 3 track 10). Whilst the second piano mostly carries repetitions of the main chordal theme, the first piano has a 'rhythmic pedal' (to use Messiaen's own term) in the upper register mostly in parallel major sevenths.

Importantly, Messiaen's harmonic layers are also differentiated by dynamics. The lessons learned by preparing and performing the Enescu Carillon, with the dynamically differentiated melodic layers, proved to be very significant to this investigation. The same principle was applied to many of the other works in the repertoire selection, whether the composer had specified such dynamic differentiation or not. This aspect of pianistic technique and interpretative intervention became one of the transferable elements of the whole study. It became a kind of test that was derived from Enescu and then applied to the performance of other pieces. It is hoped that this technique of layered dynamics has in some way helped to

¹³ Leonid Sabaneyev: *Vospominaniya o Scriabine* [Memories of Scriabin] (Moscow: Classica-XXI, 2003).

¹⁴ Samuil Feinberg: *Pianism kak iskusstvo* (St. Petersburg: Lan, 2017) 560pp.

¹⁵ Juri Puchnatschow: 'Das russische Glockengeläute und seine Musik', in *Glocken in Geschichte und Gegenwart: Beiträge zur Glockenkunde* vol.2 (Karlsruhe: Badenia Verlag, 1997), pp.95-112. The author's name is given in this case in a German transliteration because he is published here in German translation. This is one of the collections of essays published under the auspices of the Beratungsausschuss für das Deutsche Glockenwesen.

communicate new insights about the bell sonorities and the way that they operate in the different registers of the piano. This approach to performance is holistic: by understanding where these sounds originate geographically and culturally, a deeper understanding of the repertoire becomes possible.

As befitting the outcomes of a performance-based research investigation the primary element of this submission consists of the collection of recorded performances listed as 4 CDs in Part A. For the electronic submission (mandated during the current global crisis in 2020 caused by the COVID-19 coronavirus) these CDs are uploaded to the ‘cloud’ and have been encoded as uncompressed FLAC (.flac) files (Free Lossless Audio Codec) so as to avoid the musically undesirable process of file compression (to mp3 files) that would result in considerable loss of audio fidelity. These CDs will therefore appear as ‘folders’ containing audio tracks. The full track listing with titles and time codes is given in Part A.

Part B contains the secondary and supporting element of the submission: the collection of five chapters of exegetical explanation and commentary. Chapter 1 outlines the main characteristics of and differences between the three European traditions reflected in this study (Central European, Eastern European, and Western European). Chapter 2 discusses the principles of Bell Layering with regard to harmony, rhythm, and context. Chapter 3 attempts to explain the pianistic challenges of producing bell sonorities and how the recordings represent responses to those challenges of both interpretation and technique. Chapter 4 discusses some of the possible ways of communicating ideas about bell sonorities and repertoire traditions through the curation of material in concert programming. Although many of the pieces contained in this submission have already been performed publicly in recitals (both live and broadcast) in Australia, Russia, Germany and Austria, there is still a great deal of scope for future exploration in this area. For example, some recital programmes

might be curated purely in terms of their bell-inspired nature, but in other cases the bell-inspired idea might be woven through a different programming theme (for example themes of influence, such as Mussorgsky-Debussy-Messiaen-Murail, or Liszt-Wagner). Finally, Chapter 5 offers some concluding comments about the scope of the project and suggests how the concept might be explored further in the future, and how the traditions might be extended.

The List of Sources is subdivided so as to identify the primary source materials as the musical scores of the composed works and sound recordings of those works in performance as well as recordings of actual bells from the three represented traditions. Secondary materials, such as books, articles, and theses are also listed, and these include sources in English, German, French and Russian.

In view of the primary significance of the musical scores, a decision was made to include all of them. The final, archived copy of this submission to be lodged in 'hard' copy with the music collection of the University of Adelaide's Barr Smith Library will have these scores appended to the submission as a collection of pdf files on a CD. For the electronic submission these appended scores will appear as a 'folder'. It is hoped that the inclusion of the scores will enable the reader to position himself or herself at the intersection between the visual materials and the aural materials. This performance-based investigation has been about the challenge of a pianist being at that place of intersection. It has been about how one sees the bells in the score, understanding them in terms of the composer's notation. But it has also been about how to bring those bells to life through performance. That process of bringing to life is not always as simple as it may at first appear. It is not enough merely to play the right notes in the right rhythmic position according to the score. That is the starting point for learning the notes, but it is by no means the finishing point in artistic terms, in pianistic terms, or in terms of interpretation. The notes and the ideas behind them need to be

communicated not just played. That search for artistic communication - about bell-inspired piano music - is what has prompted, motivated, and sustained this investigation.

PART A
SOUND RECORDINGS

A.1: Track listing of CD 1**Total duration: 55'31**

Track	Composer	Piece	Remarks	Timing
1	Alexander Scriabin	<i>Sonata No. 7, Op. 64</i> (1911)	Allegro	11'15
2	Charles Bodman Rae	<i>Golden Ring</i> (2012)	Allegretto	9'04
3	Sergei Rachmaninov	<i>Etude-Tableau E-flat Major Op. 33 No. 7</i> (1911)	Allegro con brio	2'11
4	Sergei Rachmaninov	<i>Etude-Tableau C Minor Op. 39 No. 7</i> (1916-1917)	Lento lugubre	6'36
5	Claude Debussy	<i>Reflets dans l'eau</i> (from <i>Images</i> , Book I; 1905)	Andantino molto (tempo rubato)	4'58
6	Ferenc Liszt	<i>Ave Maria (Die Glocken von Rom)</i> , S.182 (1862)	Adagio sostenuto	6'48
7	Modest Mussorgsky	<i>Great Gate of Kiev</i> (from <i>Pictures at an Exhibition</i> ; 1874)	Allegro alla breve. Maestoso. Con grandezza	5'29
8	Sergei Rachmaninov	III. <i>Tears</i> (from Suite No. 1 for Two Pianos, Op. 5; 1893) with Charles Bodman Rae (piano 2)	Largo di molto	6'00
9	Sergei Rachmaninov	IV. <i>Easter</i> (from Suite No. 1 for Two Pianos, Op. 5; 1893) with Charles Bodman Rae (piano 2)	Allegro maestoso	3'08

Recorded: 16.03.2012, Adelaide Festival, live (1, 2, 4); 30.06.2018 (5); 25.11.2018 (8-9); 19.01.2020 (3, 6); 20.01.2020 (7)

A.2: Track listing of CD 2**Total duration: 62'58**

Track	Composer	Piece	Remarks	Timing
1	Ferenc Liszt	<i>Sposalizio, S.161 (Années de Pèlerinage: Deuxième Année; 1858), 'conventional' version</i>	Andante	7'39
2	César Franck	<i>Prélude, Choral et Fugue (1884)</i>	Moderato. Poco più lento. Poco allegro. Tempo I	18'58
3	Maurice Ravel	<i>Le Gibet (from Gaspard de la Nuit; 1908)</i>	Très lent	5'22
4	Ferenc Liszt	<i>Sposalizio, S.161 (Années de Pèlerinage: Deuxième Année; 1858) 'experimental' version</i>	Andante	8'39
5	Sergei Rachmaninov	<i>Etude-Tableau C-sharp Minor Op. 33 No. 9 (1911)</i>	Grave	3'28
6	Maurice Ravel	<i>Sites Auriculaires (1895-97) no.2 Entre cloches</i> with Charles Bodman Rae (piano 2)	Allègrement	3.17
7	Sergei Rachmaninov	<i>Prelude C-sharp Minor, Op. 3 (1892) 'The Bells of Moscow'</i>	Lento	4'44
8	Richard Wagner (arr. Karl Klindworth)	<i>Parsifal (1882) excerpt from Act 1</i>	Langsam und feierlich	10'50

Recorded: 16.03.2012 Adelaide Festival, live (3); 16.04.2018, live (2); 30.06.2018 (1, 4); 19.01.2020 (6, 7); 20.01.2020 (5)

A.3: Track listing of CD 3**Total duration: 65'15**

Track	Composer	Piece	Remarks	Timing
1	Claude Debussy	<i>La Cathédrale Engloutie</i> (Préludes, Book I; 1909-10)	Profondément calme	5'52
2	Charles Bodman Rae	<i>Fulgura Frango</i> (1987) with Charles Bodman Rae (piano 2)	Allegretto	4'47
3	Ferenc Liszt	<i>Cloches de Genève</i> (combined version of S.156 and S.160)	Lento	13'09
4	Félix Blumenfeld	I. <i>Cloches et Clochettes</i> (from <i>Cloches Suite</i> , Op. 40; 1909)	Moderato	3'14
5	Félix Blumenfeld	II. <i>Glas Funèbre</i> (from <i>Cloches</i> <i>Suite</i> , Op. 40; 1909)	Adagio	4'11
6	Félix Blumenfeld	III. <i>Cloches Triomphales</i> (from <i>Cloches Suite</i> , Op. 40; 1909)	Andante	2'54
7	Sergei Rachmaninov	<i>Etude-Tableau D Major Op. 39</i> No. 9 (1916-1917)	Allegro moderato. Tempo di marcia	4'15
8	Alexander Scriabin	<i>Sonata No. 6 Op. 62</i> (1911)	Modéré	13'04
9	Tristan Murail	<i>Cloches d'adieu, et un sourire</i> (1992) in memory of Messiaen	(♩ = 60 etc)	5'00
10	Olivier Messiaen	<i>Amen de la Consommation</i> (from <i>Visions de l'Amen</i> ; 1943) with Charles Bodman Rae (piano 2)	Modéré, joyeux	8'37

Recorded: 9.12.2016, Moscow, live (8), 30.07.2018 (1); 25.11.2018 (2); 19.01.2020 (4-6, 7);
20.01.2020 (3, 9, 10)

A.4: Track listing of CD 4**Total duration: 68'56**

Track	Composer	Piece	Remarks	Timing
1	Alexander Borodin	<i>In a Monastery</i> (from <i>Petite Suite</i> ; 1885)	Andante religioso	5'06
2	Maurice Ravel	<i>La Vallée des Cloches</i> (from <i>Miroirs</i> ; 1904-05)	Très lent	5'38
3	Ferenc Liszt	<i>Glockenspiel</i> , S. 186 (from <i>Weihnachtsbaum</i> ; 1873-76)	Molto vivace	1'59
4	Ferenc Liszt	<i>Angelus</i> , S. 163 (<i>Années de Pèlerinage: Troisième Année</i> ; 1877)	Andante pietoso	10'00
5	George Enescu	<i>Choral and Carillon Nocturne</i> , Op. 18 (from <i>Pièces-Impromptus</i> , 1913-1916)	Moderato. Non troppo lento - L'istesso tempo	14'28
6	Alexander Scriabin	Sonata No. 9, Op. 68 'Black Mass' (1912-13)	Moderato quasi Andante	8'03
7	Claude Debussy	<i>Cloches à travers les feuilles</i> (from <i>Images</i> , Book II; 1907)	Lent	4'07
8	Olivier Messiaen	<i>Cloches d'angoisses et larmes d'adieu</i> (from <i>Preludes</i> 1928-29)	Très lent	7'13
9	Alexander Scriabin	Sonata No. 7, Op. 64 'White Mass' (1911)	Allegro	12'13

The content of CD.4 represents an unedited, public recital given under the auspices of “The Firm” concert series in Adelaide. The concert took place on the 17th of September 2018 in Elder Hall. The piano was a Steinway Model D, and the concert was recorded by Mr Ray Thomas.

PART B
EXEGESIS

Chapter 1: Kolokola, Glocken, Cloches

As mentioned in the Introduction, the tripartite subdivision of the project is derived directly from the Bodman Rae series of programmes for BBC Radio 3. In the latter title, however, the order was different: *Glocken, Cloches, Kolokola*. The use of these three words from three different continental European languages also serves a purpose in bypassing the English word 'Bell', and thus signifying that the English tradition is not represented here.

1.1 The Central European Tradition: Glocken

There is extensive literature in German about the Central European tradition of bell-ringing. This literature centres on the scholarly and practical activities of the Beratungsausschuss für das Deutsche Glockenwesen (see the List of Sources for books edited by Kurt Kramer).¹⁶ Under the auspices of this relatively large organisation, there have been regular conferences over several decades and several scholarly books containing chapters contributed by the leading bell-founders, bell-restorers, and bell specialists from all parts of Central, Western, and Eastern Europe (not only those from the German speaking countries).

It is worthwhile questioning why and how this extensive literature has come into being, and what it might represent culturally. A large part of the explanation concerns the destruction of many German cities during the Allied bombing campaign of 1944-45. The German bombing campaigns - for example, of 1939 on Warsaw, of 1940 on London, of 1941-42 on Leningrad - pre-dated these Allied raids. The difference in the context of this study is that during the post-war period in what was then West Germany (the Bundesrepublik Deutschland or BRD) there was a serious, sustained and well-resourced policy of rebuilding not only the churches

¹⁶ See, for example, the short but very interesting essay by Gerhard D. Wagner 'Glockenklang und Harmonie' [Bell Sound and Harmony] in Kramer, Kurt (ed.): *Glocken in Geschichte und Gegenwart: Beiträge zur Glockenkunde* Volume One (Karlsruhe: Badenia Verlag, 1986), Part 4, 73-78.

of the major cities (in the West, at least) but also of commissioning new bell installations that would once more give 'voice' to the soundscape of the relevant city.

If one were to single out just two cities for purposes of comparison - one from the East and one from the West - Dresden and Frankfurt-am-Main would come to mind. The cathedral of Dresden was not fully restored until after the reunification of Germany in the early 1990s (the restoration of churches was not deemed a social priority by the communist administration of the then Deutsche Demokratische Republik). Funds for the restoration of the building and its bells were contributed by several countries, including the United Kingdom as a symbolic gesture of reconciliation, acknowledging the still-controversial fire-bombing of the city by the Royal Air Force towards the end of the Second World War. By contrast, the reconstruction of the churches and bells of Frankfurt-am-Main was begun in the early 1950s and continued steadily until completion in the mid 1980s. This reconstruction project has been one of the most thoroughly researched and thoroughly documented of its kind anywhere in the world, and the documentation provides very valuable information not only about the specification of individual bells but also about the musical pitch relationships of the various bell collections and their sonic relationships to each other.

In its latter stages the Frankfurt bell-reconstruction project was led by Dr Konrad Bund on behalf of the city archives. The end of the project was marked not only by the installation of replacement bells but also by comprehensive and coordinated schemes for ringing all the bells of the central churches together at certain times of year such as on Christmas Eve, Christmas Day and on New Year's Eve (or Sylvester). Even though the project was not completed until 1986 the planning for the bell installations began in the early 1950s, and a sophisticated design of all the musical pitch relationships was drawn up at that time by a bell-consultant in Mainz, Dr Paul Smets. The Smets plan of 1954 is published in a lavishly

illustrated book - one of the best and most musically detailed books ever written about bells - published in 1986 by the Frankfurt City Archives, edited by Dr Bund.¹⁷ At the same time, the city also published an LP recording of the Frankfurt bells (those of the Cathedral and the other central churches and monastic foundations), later reissued as a CD with a detailed booklet giving comprehensive details of the bells, their history, their design, their individual musical pitches and the harmonic schemes governing how they are now rung in concert.¹⁸

These details confirm that one of the central principles governing the Central-European bell tradition is that of anhemitonic pentatonicism (pentatonic harmony that excludes semitones, and has only major seconds and minor thirds as adjacent musical intervals).¹⁹ This type of pentatonicism is crucial to an understanding of the bell harmonies that one finds in the bell-inspired piano works of Liszt, in the first and third acts of Wagner's *Parsifal* (the bells of the Grail castle of Munsalvaesche), and which also determines the pitch of the bell-motifs used by Mahler in the fifth movement of his Third Symphony.²⁰

There are two short, bell-inspired pieces in Liszt's *Weihnachtsbaum* (Christmas Tree) suite: *Carillon*, and *Abendglocken* (Evening Bells). In each case the harmonies are generated mostly according to anhemitonic pentatonic patterning, but with some transpositions as the

¹⁷ Konrad Bund (ed.): *Frankfurter Glockenbuch* (Frankfurt-am-Main: Verlag Waldemar Kramer, 1986) 477pp. The Smets plan appears on page 431.

¹⁸ Konrad Bund (ed.): *Die Stimme unserer Stadt: Das Frankfurter Domgeläute und das Frankfurter Große Stadtgeläute* (Frankfurt-am-Main: Amt für Wissenschaft und Kunst der Stadt Frankfurt-am-Main, 1986), LP BE 33, with an extensive booklet published as ISBN 3-7829-0312-9. The Smets plan appears on page 49 of the 63-page booklet.

¹⁹ See, for example, the short but very interesting essay by Volker Müller, 'Geläute-Disposition und Geläute-Ergänzung', in Kramer, Kurt (ed.): *Glocken in Geschichte und Gegenwart: Beiträge zur Glockenkunde* Volume One (Karlsruhe: Badenia Verlag, 1986), Part 4, pp.93-100.

²⁰ Charles Bodman Rae has a section on 'The Principles of Pentatonic Bell Harmony' (section 8) in *The Bells of Warsaw: reconstructing the soundscape of the city* (Warsaw: Institute of Music and Dance, 2014). This research project report commissioned by the Polish Ministry of Culture and National Heritage is available as a free pdf download from the website of their Institute for Music and Dance: www.imit.org.pl.

harmonies change. These are charming, self-contained studies in bell harmony, and *Carillon* has been included here in the recordings. Of his longer, more developed piano works that contain bell sounds perhaps *Sposalizio* (from the *Deuxième année de pèlerinage: Italie*, of 1858) is one of the most interesting, hence it is featured with two, alternative interpretations in this submission. The opening line is pentatonic (B3, C#4, F#3, G#3, C#3, D#3, G#3, F#3, B2) and seems to represent bells, especially when played with a generous amount of pedal. The pentatonic bells return later in jubilant cascades of octave passage work. There are challenges of pianistic interpretation in bringing out these bell resonances. The challenges relate to tempo, to pedalling, to finger and wrist articulations, and dynamic balance between registers. These challenges of interpretation, with particular reference to *Sposalizio* as a kind of test case, will be discussed in greater detail later in this study.

The bells of the Grail castle in Wagner's *Parsifal*, first appearing in Act One, form a four-note motif of sequential falling perfect fourths (C3, G2, A2, E2). It is thought that Wagner derived this motif from the bells of abbey at Beuron (although the actual bells there are at a much higher pitch register than the very deep-toned bells that begin the Grail bells in *Parsifal*). Another significant church to have the same configuration is the Cathedral at Speyer on the river Rhine, where the bells are much larger and therefore lower in pitch than those at Beuron. The four-note motif is a pentatonic sub-set (the full pentatonic set could be completed by adding a D). Had Wagner restricted himself just to these same pitches throughout the bell section of Act One, the harmony would remain static. It does not remain static because Wagner continually modulates using the motif, travelling through many different transpositions and keys. This is a particularly fascinating example of bell-inspired music, because the composer frees himself from an over-literal representation and takes the bell harmony on a tonal and chromatic journey. Although this is not a work for piano, and would therefore seem to fall outside the terms of reference for this study, it is such a

significant case that a decision was made to include it here by making a transcription based on the piano reduction in the vocal score (Klindworth edition). The reason for using the Klindworth edition as opposed to Liszt's version, is that the Klindworth edition is a more literal image of the original piece, whereas Liszt's version is paraphrased and uses many pianistic effects to emulate the orchestra such as octaves and tremolos.

The Central-European pentatonic bell tradition is also represented here by a short piece for two pianos by Charles Bodman Rae: *Fulgura Frango*, which was composed and premiered in 1987. This was his second 'essay' in writing bell-inspired piano music. The first was based entirely on the bells of the Cathedral of Frankfurt-am-Main (the final movement of *Jede Irdische Venus*, composed in Warsaw in 1982 and premiered in May that year at the Chopin Academy of Music). The title of *Fulgura Frango* is taken from the beginning of Schiller's epic poem, *Das Lied von der Glocke*. At the top of the poem, Schiller quotes the three Latin 'virtutes' inscribed on the great bell at Schaffhausen on the river Rhine near the Rhine falls. Those three virtues are: *Vivos Voco* (I call the living), *Mortuos Plango* (I wail for the dead), and *Fulgura Frango* (I break the thunder). The opening and closing sections are entirely pentatonic and derived from the sounds of the bells of St. Kilian's Cathedral at Würzburg-am-Main (the middle section has stacked pentatonic chords on the black keys built from the tolling of the great bell at Erfurt in Thuringia).²¹

²¹ Charles Bodman Rae: *Fulgura Frango* (Sydney: Australian Music Centre, 1987) AMC 26773. ISMN 979-0-72028-18-4. This piece was premiered at the 1987 Leeds College of Music Festival (by the composer and Julian Cima). The Australian première was given by the composer and Stefan Ammer in a recital of bell-inspired music for one and two pianos as part of the 2002 Adelaide Festival of Arts.

1.2 The Eastern European Tradition: Kolokola

Whereas the Central-European bell tradition is characterised primarily by pentatonic harmony and pentatonic sub-sets, the Eastern-European tradition of the Russian Orthodox church (in Russia and other parts of Eastern Europe) does not tend to have bell collections designed according to harmonic principles. This is partly due to the fact that bell collections in those territories tended to be built up gradually over time, with individual bells being chosen (for example, at regional bell fairs) and added without regard to their tuning. Thus the pitch collections vary considerably between the many monastic foundations and have sonic properties that are unique to each location.

One feature, however, does tend to emerge. Whereas the individual bells in Central and Western Europe were specially 'tuned' in order to remove or suppress the tritone resonances that might be produced, those of the Russian Orthodox tradition were not adjusted and the tritone properties were accepted, or even desired.

The most striking example of tritone resonance in the Russian bell tradition comes in Mussorgsky's splendid simulation of bell-chiming in the Coronation Scene of his opera, *Boris Godunov*. This scene begins with the controlled chiming of a single, very low bell pitched as C1 with a complementary tritone on F#1. Above this imagined very large bass bell Mussorgsky places two, alternating tritonal, dominant seventh chords in the tenor register: Ab 7, alternating with D7. Each of these four-note chords contains the low tritone (spelled either as C/F# or C/Gb), according to the harmonic context. He then adds in the upper register several much smaller bells chiming in faster rhythmic patterns, arpeggiating the Ab 7 and D7 chords. This extraordinary use of tritonal harmony represents the chiming of bells of different sizes, in different registers, whereby the lowest bell is the slowest due to its large size and weight and the upper ones sound more quickly.

At this point it must be understood that Russian Orthodox bells do not move. They are not mounted in such a way that they can swing or ring. They are mounted in a fixed position and the chiming is achieved by moving the clappers, not the bells. This entirely different approach to the mounting and chiming means that Russian bells are actually 'played' as an ensemble. For simple, logistic reasons the largest bells tend to be positioned away from the medium-sized and smaller ones, just because of the constraints of space. This means that they require a different person to chime them. On the other, the smallest bells can be mounted very close to each other, often in a row, with the result that ropes can be attached to all the various clappers of such a group. These ropes can be held in one hand and operated all at the same time, but only one person. For the medium-sized bells it is feasible for one person to hold a clapper rope in each hand and thus operate two bells at once. In exceptional cases there can be a complex network of ropes (operated by hand or hands) and pedals (remotely operating the larger bells). There are currently some video clips freely available via the internet showing how certain highly skilled Russian bell chimers can operate an entire bell collection as a solo 'performance'. Such virtuosity is the exception rather than the rule, but it serves to emphasise the fact that Russian bells, unlike their Central and Western European counterparts (or their English counterparts) which require teams of bellringers, can sometimes be sounded by a single person.

The two most significant aspects of the Russian tradition - musically speaking - are the tritonal harmonic resonances, and the layered patterns of rhythm.

The harmonic phenomenon which jazz musicians refer to as "tritone substitution" (ie at a cadential point substituting for the dominant seventh chord the one which has as its root the tritone away - the flat supertonic - and which shares a common tritone) appears for the first time in musical literature/repertoire in the alternating $A\flat 7$ and $D7$ chords (common tritone of

C/G \flat - C/F \sharp) of *Boris Godunov*. It is extraordinary to think that this harmonic procedure, which we might associate with certain pieces of popular music from the 1930s onwards, originated in the 1860s. The real point, however, is that Mussorgsky made this musical discovery in an empirical way - from hearing the actual bells of the churches in the Kremlin of Moscow - rather than by theoretical means.

Because it is not a piano work, it has not been possible or appropriate to include the actual Coronation Scene of *Boris Godunov* in the collection of recordings assembled for this submission. This is unfortunate, because it is such a significant piece and had such strong influence on the music not only of Russian pianist-composers such as Stravinsky, Rachmaninov and Scriabin, but also on the harmonic sound worlds of Debussy, Ravel and Messiaen. It is one of the key features of the Franco-Russian tradition. Fortunately, it has been possible to include the Boris harmony, but in a new work rather than via the original. As already mentioned in the Introduction, the conceptual idea for this investigation dates back to a recital presented at the 2012 Adelaide Festival of Arts. For that programme, a new work was composed by Charles Bodman Rae. In order to acknowledge the Russian musical identity he took the alternating dominant seventh chords of the *Boris* Coronation Scene as a musical departure point. To these was added two more four-note chords (half-diminished-seventh chords) also containing the same common tritone of C/F \sharp - C/G \flat . This extended sequence of four-note chords forms the harmonic material for much of the piece, with the addition - in the middle and at the end - of a few references to the Russian bell sounds (emphasising interconnected major ninth, major second, minor seventh, and perfect fifth intervals) that appear in the final bars of Stravinsky's *Les Noces (Svadebka)*. The tritonal qualities of the Mussorgsky chords (plus the two 'extra' chords) create harmonic contrast with the intervallic properties of the Stravinsky-derived chords. Here is part of the programme note for *Golden Ring*:

In addition to this general idea of evoking the resonance of Russian Orthodox bells, the piece alludes to several Russian works. The most significant is the Coronation Scene from the beginning of Musorgsky's opera, *Boris Godunov*. Tsar Boris emerges from the Cathedral of the Archangel in the Moscow Kremlin and we hear a simulation of the bells from all the Kremlin's bell towers. The harmony was unique for its time and is the first ever instance of (dominant seventh) chords being juxtaposed a tritone apart, a sound that was greatly to influence Debussy, Stravinsky, Ravel, and others. The tritone occurs naturally in bell resonance, but for centuries was carefully avoided and suppressed (tuned out) by bell founders of central and western Europe. In Russia, however, the tritone sound was valued and not suppressed. Musorgsky uses only two chords: D7 and A \flat 7 (each containing the common tritone of C and F# or G \flat). To these I have added two others (the half-diminished seventh chords built on C and F#) also containing the same tritone. The opening and closing sections of *Golden Ring* are generated almost entirely from varied treatments of these four chords. One could explain the piece as being harmonic variations, on chords rather than a melodic theme. In the middle section there are some other allusions, particularly to the closing scene of Stravinsky's *Svadebka* (usually known by its French title of *Les Noces*).²²

It was through the learning and performance of this new piece that I came to understand and appreciate the true significance of the Mussorgsky chords, the way that they represent the

²² Charles Bodman Rae: *Golden Ring* (Sydney: Australian Music Centre, 2012) AMC 25815. ISMN 979-0-720125-05-3.

Russian Kolokola tradition, and the influence they have had on many other composers, particularly pianist-composers. Three years later, when I was involved in a series of performances of the complete Scriabin piano sonatas for concerts in Australia, Russia and Germany during the Scriabin centenary year (commemorating 2015 as the centenary of his death), I developed a closer understanding of the significance of Mussorgskian tritonal resonances in Scriabin's depictions of Russian bells. In fact, 'depictions' would be somewhat misleading, because Scriabin's bells are rarely obvious or literal. Instead, they tend to be woven through the musical fabric and occur mainly in the lowest and highest registers of the piano. The presence of very low tritones in Scriabin's piano writing can be understood in this context as an aural and pianistic connection with the *Boris Godunov* bells. Scriabin would have known the piece, however more importantly, he would also have been familiar with actual sounds of the Russian bells that had impressed Mussorgsky.

Scriabin's six-note 'Pleroma chord' (in ascending order, C, F#, B \flat , E, A, D) has two tritones placed a major third apart (the chord is usually quoted as starting on C/F#, and this makes inevitable allusions both to the *Boris Godunov* chords, to the C/F# opposition of Stravinsky's *Petrushka*, and even might suggest to those familiar with Messiaen's modal system the tritone C/F# that is contained in each of his modes). It is probably unnecessary at this stage to stress the point about tritonal bell resonance, but there is another intriguing aspect of Scriabin's treatment of intervallic relationships in the Pleroma Chord. It is the voicing in perfect fourths in the upper half of the chord. This type of sound is reminiscent of Ravel's evocations of bell sounds, both in his early piece for two pianos, *Entre Cloches* (from *Sites Auriculaires*) and in the far more sophisticated handling of bell resonances in *Vallée des cloches* (from *Miroirs*). Ravel's quartal harmony in these pieces may have appealed now to several decades of jazz pianists who absorbed the sounds and made them their own, but the source of such harmony surely lies with the acoustic properties of bells, both individually and in concert with each

other. The Percy Grainger arrangement of *Vallée des Cloches* for his 'Tuneful Percussion' is an apt gesture of appreciation for Ravel's aural sensitivity to bell harmonies and makes explicit (for bell-like percussion) that the sonorities for piano are implicitly bell-like.

After the Russian Revolutions of 1917, and particularly after the intensification of Bolshevik control from the late 1920s onwards in the then Soviet Union, the everyday aural contact with bell sounds was gradually lost in many parts of Russia, particularly in the major cities where many churches and their bell towers were demolished as part of a sustained campaign of anti-clericalism. For these reasons, Russian musicians of later generations, myself included, did not have the same direct experience of Russian bell sounds as the young Rachmaninov, Stravinsky, Scriabin. Since the fall of communism in Eastern Europe and the fall of the Soviet Union itself, it has gradually been possible for these cultural and musical traditions to be rehabilitated. Attendance at church services is no longer frowned upon by the civil authorities. Calls to worship by the chiming of bells are no longer suppressed. Gradually the soundscapes of some Russian cities are regaining some elements of their pre-revolutionary and pre-communist character. Perhaps in the future, the distinctive sounds of Russian Orthodox bell-chiming will be detectable in a new generation of Russian composers. Meanwhile, it has been a rewarding personal journey to explore the works of Mussorgsky, Rachmaninov, Stravinsky and Scriabin that use bell harmonies and bell rhythms not merely in literal, descriptive ways, but more importantly, in suggestive ways that communicate on a deeper and more symbolic level.

1.3 The Western European Tradition: Cloches

The Western European tradition, at least in Northern France, is similar to the Central European tradition in its use of pentatonic configurations. The bells that influenced Debussy and Ravel are essentially part of the same Catholic tradition that influenced Liszt. It would seem an obvious extension of this tradition to include Olivier Messiaen, as an inheritor of a Debussian musical tradition. Yet there are aspects of Messiaen's that are in no way typical representations of the Western European, French tradition. Many of Messiaen's depictions of bells in his piano works, notably in the *Visions de l'Amen* for two pianos (the last movement of which, *Amen de la Consommation*, is included in the recordings for this submission), are closer to the Russian Orthodox tradition in their use of tritonal harmony. It would seem an obvious assumption that he, as a French composer with very strong affiliation to the Roman Catholic Church, would adopt a 'French' approach. However what we find is that he uses bell harmonies that might seem to have more in common with Mussorgsky than with Debussy. When one considers that there may have been a strong element of Mussorgsky's harmony in Debussy's music itself, and that Messiaen may have had a kind of 'double dose' of Mussorgsky's tritonal harmony both direct from the primary source and second hand, via Debussy, this fact becomes the more interesting. In a fascinating and musically very perceptive article on the *Boris Godunov* bells by Mark de Voto we find the following explanation of the likely influence of Mussorgsky's harmony on the teenage Debussy:

One early enthusiast of Musorgsky's music outside of Russia was Claude Debussy. As we know, while he was a student at the Conservatoire, Debussy had a personal connection with Russia as early as his nineteenth year, when he spent two summers there in 1880 and 1881 as household pianist for Nadezhda von Meck, Tchaikovsky's "beloved friend" and

protector. In later years Debussy told Stravinsky that he had first become familiar with Musorgsky's songs when he found the scores on von Meck's piano (Stravinsky and Craft 1962:158). It is not certain when, or how, Debussy came to see the score of *Boris*, but the progression turns up in his music as early as his unfinished *Triomphe de Bacchus* of 1882, and there is no mistaking the bell-chord relationship of a well-highlighted passage in one of the finest works of Debussy's early maturity, the cantata *La Damoiselle elue* of 1889 (example 28). This is only one of several comparable passages in that work. There are others like it in the *Fantaisie* for piano and orchestra, composed at about the same time and even more seldom heard today.²³

The connections between French and Russian composers allude to fascinating, possible yet unsubstantiated scenarios. One can imagine meetings and chats between Debussy and Stravinsky, imagine them playing the four-hand version of *Petrushka* (with its tritonal opposition of C and F# symbolising the inner conflicts of the unfortunate, love-struck puppet) or the two-piano (original) version of the *Prélude à l'après-midi d'un faune* (with its tritonal shifts, both melodically and chordally, between C# and G natural). It is tempting to speculate what sort of exchange they might have had regarding Mussorgsky, his innovative harmonies, and even about the sounds of bells. Such speculation would not be scholarly, because it would be impossible to substantiate. But it can serve as a stimulation to the musical imagination of a performer who might try to bring out, through performance, aural connections that are embedded in the fabric of the actual music.

²³ Mark de Voto: 'Boris's Bells, By Way of Schubert and Others.', in *Current Musicology* no.83 (Spring 2007), 131-152.

Before leaving the subject of *Petrushka* it is worth noting that there are many passages of multi-layered rhythms suggesting the influence of Russian Orthodox bell-chiming. The St. Petersburg Easter Festival music (the Shrovetide Fair scene) is perhaps the most obvious example. Unfortunately however, the works of Stravinsky containing such bell sounds are not written for solo piano or two pianos, hence it was not possible or appropriate to include them here. It would have been possible to present a two-piano (or four-hand duet) version of *Petrushka*, but a decision was made not to do this because a performance-based doctoral project already exists at the Elder Conservatorium of Music and the outcomes (a new performing version for two pianos, rather than four-hand duet, in both score and recording) are likely to appear in the public domain soon after the completion of the present study.²⁴

The prolonged presence of Stravinsky in France and French-speaking Switzerland in the years after the Russian Revolutions of 1917 (and earlier, during the famous Paris seasons of the Ballets Russes in 1911-13) blurs the distinction between the Russian and the French traditions. In the triangular space between Stravinsky, Debussy and Ravel, there is a blending and sharing of traditions to the extent that it becomes difficult to convincingly argue who influenced whom. One thing however, is clear: all three influenced Messiaen. It is in his music that the traditions become inseparable. It was not only through his music but also through his teaching at the Paris Conservatoire (for example, his celebrated course on Analysis) that he influenced many other composers who came not only from France. The complex web of musical influences with Messiaen at their centre (including influences of a bell-inspired nature) takes in the following composers connected in one way or another to this

²⁴ This performance-based PhD project is being undertaken by Macarena Zambrano-Godoy also under the supervisory guidance of Stephen Whittington and Charles Bodman Rae. It is likely to be completed and submitted in 2021.

study: Liszt, Mussorgsky, Scriabin, Debussy, Stravinsky, Ravel, Murail, Sherlaw Johnson and Bodman Rae.

The presence of the English composer Robert Sherlaw Johnson in this group is significant and requires some explanation. In his youth he was a noted performer of the major piano works of Messiaen. He studied composition in Paris with Nadia Boulanger, attended Messiaen's analysis classes, and took piano lessons with Jacques Fevrier. On his return to England he began work on a major study of Messiaen's music which was submitted for the DMus degree at the University of Leeds (in 1970), and was later reshaped to become his monograph on the music of Messiaen (one of the classic texts, and the first major study of Messiaen's work in English).²⁵ Sherlaw Johnson also composed his own bell-inspired pieces, particularly in his later years by which time he was also a committed bell-ringer in the English Change Ringing tradition. Poignantly, as mentioned in his obituary notice appearing in *The Guardian* he collapsed and died in a bell tower at Appleton in Oxfordshire whilst ringing changes.²⁶ Sherlaw Johnson's musical insights as a pianist-composer, and his understanding of the connections between the French and Russian traditions, make him a kind of 'godfather' to the current project. It was through his studies at Oxford with Sherlaw Johnson (including both composition and the performance of Messiaen piano works) that Charles Bodman Rae first became aware of the significance of bell resonances in the piano repertoire and began a long musical journey of exploration that has been passed on to the present author to continue and develop. It is necessary to tell this story in order to explain the musical lineage of which this study forms a part. It is a Franco-Russian lineage to which the Central-European tradition has then been added.

²⁵ Robert Sherlaw Johnson: *Messiaen* (London: Dent, 1975, revised 1989).

²⁶ Charles Bodman Rae: 'Robert Sherlaw Johnson' [obituary notice] *The Guardian*, (London: 16 November 2000). Sherlaw Johnson was born on 21 May 1932 and died on 3 November 2000.

In France the most significant bell collections are in the major cities, particularly those in the North and in the East of the country. The Cathedral of Notre-Dame in Paris is the most well known, but there are others in Rouen, Nantes, Besançon, Nancy, Colmar, Verdun and Avignon. Perhaps the most interesting collection and arguably the most beautiful, musically speaking, is the one in the Cathedral at Strasbourg. There are two reasons for this. Firstly, the city of Strasbourg on the Rhine in the culturally and historically Germanic region of Alsace, and thus forms an integral part of the Central-European tradition centred on Germany. Secondly, the cathedral benefitted over several decades from the research and advice on bells (how to configure them, musically, and how to commission restoration projects) from the most distinguished French expert on bells: the Chanoine, Father Jean Ringue (1922-2009). It was he who advised on many of the post-war reconstruction projects in France, particularly those in the Eastern parts of the country. His book on bells is perhaps the most significant source in French about bell-ringing.²⁷

The main collection of bells in Strasbourg cathedral contains seven 'instruments' tuned according to the following pitch sequence (in ascending order): B \flat , D \flat , E \flat , F, A \flat , B \flat , C). This pitch pattern actually contains two, overlapping and interlocking pentatonic sequences: B \flat , D \flat , E \flat , F, A \flat ; and E \flat , F, A \flat , B \flat , C. The adjacent intervals of major seconds and minor thirds do conform to the Central-European principles of anhemitonic pentatonicism, but there is a major seventh interval between the smallest bell and the second largest bell that departs from the anhemitonic principle. One needs to be mindful of the fact that not all the bells are rung on each occasion. In many cases the bells used for particular religious feast days will be drawn from either one pentatonic set or the other. On the special occasions that all are rung together there will be an overwhelmingly pentatonic effect, but

²⁷ Chanoine Fr. Jean Ringue: *Cloches et Carillons* (Brussels; no date).

'spiced' with the major seventh dissonance, giving a brightness to the sound. The particular contribution of Father Ringue as a church adviser to many dioceses was that he brought to his work a deep musical understanding of the intervallic and harmonic characteristics of bell collections. Apart from Ringue there are two other notable authorities on the French traditions of bell ringing: Jean-Pierre Rama²⁸, and Arnaud Robinault-Jaulin.²⁹

One of the most significant points of difference between the German and French traditions is that since the Second World War in Germany there has been a sustained and serious programme of bell reconstruction to rectify the destruction caused by sequestration of bells during the war for the manufacture of munitions, and the destruction of German cities by the Allied bombing campaign of 1944-45. In France, the equivalent programme has been less comprehensive. There have been some notable exceptions such as the city of Verdun, which suffered badly during the First World War. The cathedral of Verdun has a large collection of sixteen bells, which range in date from 1756 to 1965. Most of the reconstruction work on that collection was done in the twenty years following the Second World War. At the beginning of the twentieth century France had far fewer large bell collections than Germany, owing to the lasting legacy of the Napoleonic period when many bells were sequestered and melted down to make munitions for Napoleon's campaigns. That legacy, unfortunately, endures even to this day.

The Cathedral of Strasbourg provides a fascinating group of cultural links that seem relevant to this study. In Longfellow's epic poem, *The Golden Legend*, he re-tells the story of how the Devil tries to enter the cathedral, only to be repelled by the sound of vigorous - even furious -

²⁸ Jean-Pierre Rama: *Cloches de France et d'ailleurs* (Paris: Le Temps Apprivoise, 1993) 240pp.

²⁹ Arnaud Robinault-Jaulin: *Cloches, histoire générale des cloches et des techniques campanaires en France des origines à nos jours* (Paris: Union Repart, n.d.).

bell ringing.³⁰ This story intrigued Liszt who intended to compose a cantata on the subject. He did not complete the project, but he did compose a piece entitled *Excelsior* which was intended to form part of the work. One of the main thematic elements of the piece is a rising line of ascending major triad plus the added major sixth above the root (e.g. C, E, G, A) which in the context of the Central-European bell tradition is usually referred to as the Salve Regina motif (and forms the basis for numerous four-bell installations across Central Europe, as well as being used as a significant subset of larger collections). Transposed to the key of A flat major this motif was borrowed from Liszt's *Excelsior* by Wagner and once slightly extended, became the opening theme of *Parsifal* (A \flat , C, E \flat , F, G, A \flat , G, C, D, E \flat etc). The connection is even more intriguing when one becomes aware of the pitch-class set relationship between the four-note rising Salve Regina motif and the four-note pattern of the Grail castle bells appearing later in Act One of *Parsifal*. One ascends and the other descends, but the pitch set is the same, merely transposed and presented in a different register. It is tempting to speculate about the extent of the musical influence Liszt might have had on his eventual de facto son-in-law (perhaps even in relation to *Tristan und Isolde*), but in the cases of *Excelsior* and *Parsifal* the connections are readily apparent to both the eye and the ear.

The next chapter explores in detail the significance of 'layering'. It has already been noted that the Coronation Scene of *Boris Godunov* consists of three quite distinct musical layers: the bottom register occupied by the repeated tritone of C to F \sharp or G \flat ; the middle register occupied by the alternating dominant seventh chords of A \flat 7 and D7; and the upper register occupied by small bells chiming quickly according to their smaller size and weight. But similar principles of harmonic layering - in distinct registers - occur elsewhere, notably in the

³⁰ The furious ringing of bells either to ward off evil spirits and/or to protect from a violent storm was a common practice during what one might call "the era of superstition". Storms were thought to be caused by evil spirits.

music of Debussy. Harmonic and rhythmic layering is also central to an understanding of the music of Stravinsky. Such layering is often observable in pieces inspired by bells.

Chapter 2: Bell Layers

The pianistic layering of bell harmonies and bell rhythms was one of the central ideas that emerged from this research investigation, and this chapter will focus on those principles. A discussion of layering - in discrete and distinct registers of the piano - can be approached from two perspectives: the compositional perspective, and the performance perspective. In compositional terms, one needs to consider both the creative approach (in terms of compositional technique) and the artistic intent (in terms of conceptual idea) of the composer. Such examination of the music takes the notated score as the empirical point of departure. But examination of the performance challenges leads one to move, in some cases, beyond the score, in order to try and figure out how best to realise the intent of the composer, even if this requires departing to some extent from the notation (e.g. of dynamics).

One of the most obvious and significant features of bell ringing (or bell chiming) is that the largest bells will move or chime slowly, whereas the smaller ones will move or chime more quickly. This is simply due to their size and weight. For the bells that are intended to swing through an arc of up to 180 degrees (such as those in Central and Western Europe) a great deal of physical effort on the part of the bell ringers (assuming that there is no latter-day automation) is required to get them swinging. Very large bells will tend to swing through an arc of only 90 degrees or so (about 45 degrees to each side), and the sound will result from the interaction of the swinging bell and its freely moving clapper inside.³¹ Medium-sized and small bells will lend themselves to be swung through a larger arc, but even so, the rhythmic rate of sounding (striking of the bell by the clapper) will be relatively more frequent than the

³¹ In the English Change Ringing tradition, by contrast, the bells tend to be relatively small and are mounted on wheels enabling them to be rung through 360 degrees.

very large ones due to the relative size. This disparity in size has a marked effect on the rhythm.

In the Russian Orthodox tradition, the bells are mounted in a fixed position and do not swing or 'ring' at all. As previously mentioned, they are chimed by pulling a rope attached to the clapper, thus bringing the clapper in contact with the inner edge of the bell in a rhythmically controllable manner. But still there are considerations of size and weight - of the clappers rather than the actual bells. Large, heavy clappers, or the large bells, will move more slowly and thus chime more slowly than small, light ones.

It is entirely due to these physical aspects of bell-size, bell-weight, clapper-size and clapper-weight that the different sized bells in a collection create a complex pattern of what one might call 'phasing' (an intentional reference to the rhythmic phasing of Steve Reich and the other minimalists).

As this is a performance-based investigation, the performance issues are those that loom particularly large. It is one thing to understand at the conceptual level, that Debussy, for example, habitually sub-divides into layers his musical 'space' according to three registral regions of the instrument. But it is another thing altogether to try and conjure from the instrument the sonorities and textures that will bring such conceptual ideas to life, in actual sound.

In some cases it can be seen from the score that the composer clearly wishes to create several layers of musical texture, but the dynamic markings provided in the score can make this rather difficult to communicate in performance (the case of Messiaen's *Amen de la Consommation* for example, discussed in detail in Chapter 3). In these circumstances it has sometimes been necessary to moderate, adjust and interpret the composer's dynamic markings in order to achieve a performance that produces the desired sound. In several such

cases it has been the consideration of layering that has assisted the decision-making process in rehearsal.

In view of the fact that pieces by Debussy appear in the list of recordings for this project it is worthwhile at this point reflecting some pertinent observations made by the Polish musicologist, Stefan Jarociński, in his insightful book about the composer. Jarociński identified a principle of subdividing the sound into different layers:

Not long ago the notion of verticalism was always associated with harmony; and yet these two conceptions are not identical since, according to the sound material employed, vertical structures will always be homogeneous and compact, and will either dissolve into a single sonorous stratum or, on the contrary, will be heterogeneous or 'polygeneous', and it will then be possible to distinguish two or three strata (purely sonorous, and having nothing in common with melodic lines). The horizontal structures will not necessarily present a melodic design, and the vertical ones may be decomposed or divided into separate sonorous levels, while their harmonic links may be weakened.³²

Jarociński's perceptive comments about harmonic layers in the music of Debussy can be explored in relation to orchestral works, but in the context of this study they can be particularly useful in reaching an understanding of the harmonic and rhythmic layer of textures in the piano pieces inspired by bell sounds.

³² Stefan Jarociński: *Debussy, Impressionism and Symbolism* (London: Eulenburg, 1976), pp.147-8. The original version of his book is in Polish: *Debussy a impresjonizm i symbolizm* (Krakow, 1966). It also appeared in French: *Debussy, impressionism et symbolisme* (Paris, 1970). The English version was translated from the French version by Rollo Myers. The above passage about harmonic layering of musical texture was quoted by Charles Bodman Rae in *The Music of Lutoslawski* (London: Faber and Faber, 1994) p.162 in order to explain some of the Debussian influence on Lutoslawski's treatment of harmony in layers.

If Debussy's approach can be used as a springboard for investigating the layering of musical ideas in the French tradition, then one might home in on the music of Stravinsky as a springboard for investigating similar principles in Russian music. This is not to say that Stravinsky originated the idea in the early twentieth century - it is already present in the music of Mussorgsky from the 1860s. But the Stravinskian examples are particularly interesting, because they have been so influential on later generations, including the American so-called 'minimalists'. If one were to take just one example from Stravinsky's output it would have to be the Shrovetide Fair music from his ballet, *Petrushka* (a work, incidentally, that Debussy greatly admired). Not only do we find in this section of Stravinsky's score a treatment of the orchestral texture in several, distinct layers of harmony and independently conceived rhythmic patterning, we also find reference to the fact that this music is intended to evoke the bustling activity of the Easter Fair in St. Petersburg. It is well known that the Easter Fair was one of the times of year when itinerant bell-founders from different parts of Russia converged in the new capital in order to sell their wares³³. So bells and bell-chiming would have been an intrinsic part of the city soundscape at that time of year.

The pianistic perspective on the layering of harmonic fields and rhythmic patterns is all about how best to bring the sounds to life in a convincing manner taking into account the characteristics of the instrument. There are some obvious differences of resonance between the lowest and the highest registers that need to be considered and 'managed'. For example, a dynamic marking of *ffff* in the highest register (as one often has in Messiaen's *Amen de la Consommation*) does not work well either in terms of attack on short, thin strings, or in terms of balance with the other registers of the piano (let alone the balance between multiple registers of two pianos). Such dynamic markings (like those that abound in the upper

³³ In other parts of Europe bells tended to be made in sets, or pitch collections, but in Russia they were usually made individually, without reference to any sense of harmonic or melodic scheme. Prospective buyers would come to St. Petersburg from far and wide in order to shop for individual bells according to size and budget.

registers of Liszt's *Sonata in B minor*) seem to be merely suggestive and need to be moderated if the sound quality at the top of the instrument is not to become harsh and unpleasant (as well as putting the instrument out of tune and thus adversely affecting the harmony).

Of all the pieces selected for inclusion in this study one stands out as being particularly well-written in terms of its dynamic markings and dynamic differentiation between the various melodic and harmonic layers: the *Carillon Nocturne*, by George Enescu.³⁴ There will be further reference to the performance problems (and solutions) presented by this piece. In this chapter it is the principle of layering that matters most.³⁵

Enescu takes a monodic line and gives it to the fourth and fifth fingers of the left hand with a dynamic marking of forte and a strong accent on each note. The first phrase of the lowest melodic layer has only three notes: E \flat , F and G. The second phrase extends the melodic line up to B \flat and descends through A \flat . With each phrase Enescu gives dynamic shaping, but the most interesting feature of his aural conception for the piece is his detailed dynamic differentiation between the bottom layer and the four upper layers of the five-part parallel chords. The four upper parts (three in the right hand and one for the thumb of the left hand) are all marked pianissimo, and this marking of pp is re-stated again and again with each phrase and sub-phrase of the parallel melody. The bottom part is doubled at the higher octave by the thumb of the right hand (but pianissimo) whereas the remaining three parts are, respectively, a major sixth, a perfect twelfth, and an octave and major seventh above the main

³⁴ This piece has been discussed at various conferences in recent years by Prof. Tibor Szasz who has made available via the internet the text of his unpublished lectures, mostly dating from 2011: <https://docs.google.com/uc?export=download&id=0BzX1SSMURfdmZXZJaEM2VDNWMWM>.

³⁵ There is also a fine performance by Tibor Szasz available on YouTube: <https://www.youtube.com/watch?v=VUDMWEzZ9qU>. This performance is accompanied by a scrolling version of the composer's autograph score. This makes for fascinating listening and viewing, because the autograph score is far more detailed in terms of performance markings than the published versions (which make many editorial changes to Enescu's non-standard notation).

line. This parallel layering mimics the upper harmonic partials that Enescu would have heard in the carillon bells that inspired the piece. Tibor Szasz comments on the notion of inspiration in this context:

The opening themes... were not 'inspired' but arrived at by accurate observation of natural phenomena. Hence Carillon is onomatopoeic music par excellence where the composer is not Enescu but the mediaeval bells themselves.³⁶

It is not known whether those carillon bells were heard in his native Romania or somewhere else, on his European travels. As carillon bells rather than swinging tower bells they would have been chimed rather than 'rung'. The overall effect is particularly rich in upper partials, but differentiated in their dynamic strength both to acknowledge the acoustic weakening of partials as they 'ascend' and also to suit the capabilities of the piano in simulating these effects of bell resonance. Messiaen also uses parallel lines in *Amen de la Consommation*, and also uses the harmonic effect of parallel major sevenths to simulate the dissonant brightness of bells, but his dynamic markings lack the subtlety and aural sensitivity that we encounter in the Enescu score. Hence the Enescu solutions to these pianistic challenges have been transferred to several of the other works contained here.

Tibor Szasz takes issue with various unidentified and unreferenced 'analysts' and challenges the modernist interpretations of Enescu's sonorities:

Analysts have suggested that the mesmerizing aural effects of Enescu's Carillon are a by-product of the modernistic trends in Europe at the time of its creation

³⁶Tibor Szasz: 'Traditional/Oriental Models of Enescu's bell-inspired piano music' (2011), unpublished conference paper available via google docs (see citation above).

(1916)... they have mistakenly labelled Enescu's Carillon [as] post-Debussyism, metatonalism, politonalism, atonalism, and even spectralism. These various 'isms' expose the shortcomings of current research vis-à-vis... the tonally/modally ambivalent mediaeval tuning pattern of European bells.³⁷

In the Russian tradition, the differences between harmonic and rhythmic layers are far more pronounced than in the other European traditions. These differences are accounted for by several factors. As previously mentioned, Russian bells are hung 'dead' and do not swing or move at all, and are therefore capable of being larger and therefore lower in pitch (far larger than in the other European traditions where bells are required to swing or ring). Additionally, Russian bells were rarely designed or made as sets according to a particular harmonic scheme (and thus not created with relatively small increments of difference between the adjacent bells of a set, as elsewhere).

The differences of size and pitch are very pronounced in the Coronation Scene of *Boris Godunov* (see Example 1). One very large and very low bell intones the tritone of C/F# (enharmonically changing to G \flat) in the lowest range of the piano/orchestra. The oscillating dominant seventh chords of D7 and A \flat 7 represent two mid-sized bells in the middle (tenor) register, and at the top there is a cluster of small bells (in this case also oscillating between the D7 and A \flat 7 chords, but with controlled rhythmic patterning/chiming. This is not intended for performance as a piano work, although Mussorgsky was evidently sensitive to pianistic resonance and this is borne out by the piano part of the vocal score. The point about harmonic and rhythmic layering becomes a significant consideration in other works that either refer to *Boris Godunov* or that also simulate Russian bell collections of this type. Mussorgsky's *Great Gate of Kiev* from *Pictures at an Exhibition* (see Example 2) is,

³⁷ Szasz, *op.cit.*

however, written for piano. The above mentioned principles of harmonic layering are applied here in a thoroughly pianistic manner, starting from bar 81; both in terms of harmonic layering and rhythmic layering (and rhythmic patterning) these two works by Mussorgsky have some striking (pun intended) similarities.

Example 1. Mussorgsky, extract from the Coronation Scene from *Boris Godunov*

Here one can see the layering effect, even though the piano score is on two staves rather than three. The low tritone (C-F#-C) in the second half of each bar changes from F# to G \flat depending on the enharmonic context of the dominant seventh chord above. The alternating dominant seventh chords appear in their ‘normal’ positions at the beginning of bars 5 and 6 (D7 and A \flat 7, respectively). Significantly, they both have C as both the top note and the bottom note of each chord inversion (the D7 is always in third inversion, whereas the A \flat 7 is always in first inversion (to keep C as the common tone). The semibreve D7 chord sounds in the alto register, whereas the semibreve A \flat 7 chord always sounds in the tenor register. In the top register, marked 8va, we also have an alternation between D7 and A \flat 7 chords, but initially broken into quavers patterns. The rhythmic pace of the top layer quickens with some

semiquaver patterns. We note Mussorgsky's stage direction: "a great peal of bells on the stage". These 'real' bells will be off stage, but they should be Russian ones.³⁸

From the mid-point of *The Great Gate of Kiev* (see Example 2, below), Mussorgsky intones a common E \flat in the alto register. This becomes the harmonic axis for the whole of the long section to follow. The characteristic tritonal resonance is provided by F-C \flat in the first chord. There is an oscillation of a minor third in the alto register (C \flat -A \flat), an oscillation of a major sixth in the lowest register (A \flat -C \flat), and a chromatic oscillation of F-F \flat in the tenor register (note that the right hand thumb notes are positioned beneath the left hand thumb notes). The same oscillating chords appear in the upper registers/layers, but with increasing rhythmic subdivision and thus increasing rhythmic urgency. The octave displacements in the upper register of the right hand part create a joyful effect of bell 'pealing', while the tritone dissonances and chromatic voice leading of the lower parts maintain the harmonic character of a genuine Russian Orthodox bell collection.

³⁸ One might hope - even assume - that recordings of *Boris Godunov* would use the correct kind of Russian Orthodox bell sounds for this Coronation Scene in between the cathedrals of the Moscow Kremlin, but one might be surprised to find that this has not always been the case. For example, the 1970 Herbert von Karajan recording with the Vienna State Opera, recorded at the Sofiensaal in Vienna in November that year, has 'off-stage' bells of entirely the wrong tradition dubbed onto the recording. Instead of dubbing the sounds of Russian bell-chiming the producers and engineers of the recording over-dubbed the sounds of bell-ringing from St. Stephen's Cathedral in Vienna (recording later reissued on 3 CDs as Decca 000747902). For the correct, Russian Orthodox bell sounds one needs to hear the Valery Gergiev version (Philips 462230).

Example 2. Mussorgsky, extract from *The Great Gate of Kiev* from *Pictures At An Exhibition*

There are also two changing harmonies: unlike in the Coronation Scene, which features two dominant seven chords, *Great Gate Of Kiev* alternates a half-diminished-seventh chord (F, Ab, Cb, Eb) and a major seventh chord (Fb, Ab, Cb, Eb) having three notes in common (whereas the alternating Boris chords have two notes in common). This way of writing has a very clear predecessor: a relatively unknown piece by Liszt called *Glocken von Rom (Ave Maria)*. Starting from bar 76 onwards Liszt uses principles of harmonic and rhythmic layering as well as rotating two half-diminished seventh chords with insertion of the tonic harmony between them (see Example 3). Liszt uses three-stave writing to make the layers very clear. Other composers later adopt this feature, including Rachmaninov in his Prelude in C# minor, Op.3 (see Example 4) which uses four staves to differentiate the layers.

Example 3. Liszt, extract from *Die Glocken von Rom*

The image shows a musical score for Liszt's 'Die Glocken von Rom'. It consists of three staves. The top staff is marked '8 trionfante' and 'ff'. The middle staff is marked 'ff' and 'poco a poco dimin.'. The bottom staff is marked 'marcatoissimo il basso'. The middle staff features a sequence of chords: E major triad in first inversion, half-diminished-seventh chord on A# (A#-C#-E-G#), and half-diminished-seventh chord on F# (F#-A-C-E). The first and second half-diminished-seventh chords are circled in red. The bass line consists of a steady eighth-note pattern: C#-A-G#-C#-A-G#-C#-A-G#-C#-A-G#-C#-A-G#-C#-A-G#-C#-A-G#-C#-A-G#-C#-.

In the middle staff we can see how Liszt alternates the harmonies, with an E major triad in first inversion as the point of harmonic stability around which the two half-diminished-seventh chords rotate. These half-diminished-seventh chords have been shown above with red circles. The first, when taken with the bass C#, produces the half-diminished-seventh on A# (A#-C#-E-G#), but in first inversion. The second is the half-diminished-seventh chord on F# (F#-A-C-E). They each contain a tritone, but not a common tritone (as we find between the Boris chords). They have only one tone in common, E natural, whereas Mussorgsky's bell chords have either two or even three notes in common. Even so, the similarities of harmonic character, harmonic layering, and rhythmic layering are striking.

One can easily appreciate why Rachmaninov's *Prelude in C sharp minor Op. 3* (see Example 4, below, and also CD 2, track 7) was dubbed 'The Bells of Moscow', on account of the low ostinato pattern of C#-A-G#, but even this is not as obvious as the bell-chiming in the last piece of the Op. 5 *Suite for two pianos* (see CD 1, track 9). Later there is rhythmic quickening of the upper registers, but in the early iterations of the harmonic progression Rachmaninov simply uses extensive octave doubling - across registers - to simulate the rich harmonic spectrum of upper harmonics generated by a very large bell chimed loudly.

Example 4. Rachmaninov, extract from *Prelude*, op. 3 in C sharp minor ('The Bells of Moscow')

The musical score is presented in a four-staff format. The top two staves are for the right hand, and the bottom two are for the left hand. The tempo is marked 'Tempo primo'. The dynamics are 'ff pesante' and 'sff'. The key signature is C sharp minor (three sharps). The score shows a series of heavy, block-like chords with some melodic movement in the upper voices.

Interestingly, the bell simulations in both the *Prelude Op. 3* (1892) and the third and fourth movements of the *Suite Op. 5* (1893) were composed when Rachmaninov was still a teenager. He was later - between 1911 and 1917 - to achieve far greater sophistication in his use of bell sonorities and was to incorporate them within pieces that were not just about bells, but which arrive at moments of jubilation created by bell effects. Examples of this more sophisticated and less literal interweaving of bell sonorities with other ideas can be found in the various *Etudes-Tableaux* included here: Op. 33/7 (see CD 1, track 3, and the discussion in Chapter 3); Op. 39 (see CD 1, track 4); Op. 33/9 (see CD 2, track 5); and Op. 39/9 (see CD 3, track 7).

Die Glocken von Rom was written in 1862, *Boris Godunov* composed between 1868 and 1873, and *Pictures at an Exhibition* in 1874. Liszt was a giant figure in European culture (and had a very high opinion of Mussorgsky's vocal cycle '*Detskaya*'), and it is most likely that Mussorgsky was familiar with *Glocken von Rom*, but even if he was not familiar with the work the resemblance remains and reminds us that composers of different backgrounds have been sensitive to bell sounds and have come up with similar pianistic ideas.

Rachmaninov's early representations of bells - dating from 1893 - in his *Suite for Two Pianos Op. 5* are of two kinds. The third movement, *Tears*, has a hauntingly repetitive ostinato pattern that falls through B \flat , A, G, D. Russian musicologist Yury Keldysh states that there was evidence of Rachmaninov being inspired by monastery bells in Novgorod. As Keldysh describes, "a slowly, monotonously descending melodic figure of four notes is associated with the equal, heavy strikes of a big bell, and simultaneously the image of dropping and freezing tears".³⁹ But it is the fourth and final movement, *Easter* (ie the Russian Easter Festival) that depicts the rhythmic and harmonic layering. The first piano part concentrates on the fast semiquaver repetitive patterning of the top strand, representing a cluster of small bells operated together (probably by one hand of the bell-chimer, holding three or more ropes). The second piano part (in the first section, at least) cascades downwards through the registers until it reaches a very low tritonal bell resonance akin to the lowest Boris bell. It can be said that the simulation of bells may be too literal, however the repetitive effect is redeemed by the appearance of a 'grand chant' melody in B flat. The combination of these two kinds of material in alternation and simultaneously does create a soundscape that evokes exterior sounds (of the bells) and interior sounds (of the choral chant) and the rhythmic effect of layering at different rates of activity is exciting, albeit as a short dose of an idea that could be a little wearisome if extended

³⁹ Keldysh, Yu. V.: *Rachmaninov i ego vremya* (Moscow: Muzyka, 1973), 115.

(in a non-developmental manner) for too long. This short piece is a self-contained study in how to evoke bells. The most significant test, at the compositional level, is perhaps how to extend and develop the limited idea over a longer time span.

Similar considerations seem to apply to Ravel's earliest essay in the simulation of bells: the *Entre Cloches* piece from his *Sites Auriculaires* (1895-97). Like Rachmaninov's *Easter*, it is short and not really developmental. Both Rachmaninov and Ravel were only about 19 or 20 when they composed these pieces, and they both went on to produce far more sophisticated solutions to the problem of how to incorporate bell rhythms and bell harmonies into their piano works. But in both cases, the emphasis is on rhythmic and harmonic layering. In the first section of Ravel's *Entre Cloches* he has a four-note bell motif in the upper register of the first piano part - enhanced by parallel fifths and fourths - and exploration of the lower registers and lower bell resonances in the second piano part. After a quieter, more reposeful middle section, Ravel returns to the opening idea, but this time with the upper layer in a rhythmically more active pattern of falling semiquavers, underneath which we hear a second layer in quavers, a third layer mostly in crotchets, and a bottom layer largely in dotted minims. The rhythmic interaction of these rhythmic layers produces an effect that could be described as Stravinskian, were it not for the fact that Ravel's little essay pre-dates *Petrushka* by some sixteen years.

The layering principle also forms a significant part of Charles Bodman Rae's *Golden Ring* (2012). This is perhaps unsurprising, given that the piece was intended as a kind of tribute to Mussorgsky and his *Boris Godunov*. The layered effects of a very low C/F# bell, plus Ab 7 and D7 chords in the middle register (both directly quoting the Coronation Scene of *Boris*), are complemented by ideas in the upper register (in the middle section these quote the ending of Stravinsky's *Les Noces*), and the whole thing is extended beyond the two chords of Mussorgsky's original to have a progression (or succession) of four chords all containing the common tritone of

C and F#. In many situations the four-note dominant seventh (and half-diminished seventh) chords that appear in the middle register are dynamically differentiated from the tritones in the lowest register, with the the four-note chords marked forte and the low tritones marked mezzo-piano or piano. In the passages that use three staves to separate the linear progression of the three layers there is detailed dynamic differentiation. In the Coda there is differentiated layering between a pentatonic top register in 5/8 (against the prevailing 6/8 metre), a slightly different pentatonic melody in the upper-middle register in dotted crotchets, and a rhythmically 'stretched' line in the low register.

Returning to the example of Debussy, we find some very sophisticated bell-inspired layering in *Cloches à travers les feuilles*. It is often erroneously thought that the opening section of this piece is where bells are represented; but that is not the case. In the opening section there are contrary-motion whole-tone scales in quaver motion, against an inner line that moves more quickly in rhythmic counterpoint. But it is actually the middle section of this piece, from bar 24 to bar 39, that represents the pentatonic bell tradition of Central and Western Europe. The right hand has a falling pentatonic motif as an inner part, with top and lower lines added. The masterly aspect of this passage is that Debussy does not restrict himself to a depiction of a fixed set of bells, at a fixed pentatonic tuning. Instead, he allows himself the flexibility to modulate through a sequence of different pentatonic patterns, chords, and scales. Thus the overall effect of pentatonic bell harmony is achieved, and yet the harmony is not static. Harmonic stasis was an issue with the early bell-sonority exercises by the nineteen-year-old Rachmaninov, and the nineteen-year-old Ravel, but here, despite the use of the (static) whole-tone scales in the opening and closing sections, Debussy makes his piece both bell-like and developmental. The bell sounds are not merely and obviously descriptive and pictorial, they are subtle, changing, harmonically varied and developmental, and they symbolise bells in an artistically imaginative way rather than a restrictively representational manner. The performance challenge with this

pentatonic middle section is to steady the tempo so that the bell sonorities have time to resonate in the instrument and to register on the ear and mind of the listener. Many commercially published performances of *Cloches à travers les feuilles* misunderstand the location of the bells, take this middle section too fast, and lose the beautiful effect of the bell sounds.

Layering of bell sounds is also a feature of the Grail Castle bells in Acts I and III of Wagner's *Parsifal*. As already noted, Wagner's four-note bell motif (derived from the bells of Beuron Abbey) modulates through many different key areas. Thus he, too, avoids the pitfall of the music becoming too static. The layering relates to the four-note motif of interlocking falling perfect fourths (C, G, A, E) in the low register, with the march theme (the procession of Grail knights) as a counterpoint (but still thematically connected). It is tempting to speculate about the possible influence of *Parsifal* on the young Debussy. It is known that he admired the work, but that admiration may have focussed on the Good Friday Music in Act III rather than the Grail Castle music in Acts I and III. It is unlikely, though, that the young Debussy would have failed to notice or to appreciate the pentatonic character of the bell motif and its many transpositions.

The later sonatas of Scriabin have many bell sounds incorporated in them. Of the three piano sonatas chosen for this submission, *Sonata No. 7, Op. 64*, called *White Mass* by the composer himself,⁴⁰ displays the greatest variety of both harmonic and rhythmic layers. The bars preceding the recapitulation (the 'growing *zvony*'⁴¹), and the recapitulation itself can be described as one of the most exciting, comprehensive and masterful examples of polyphonic and bell-writing in piano music (see Example 5).

⁴⁰ Sabaneyev, Leonid: *Vospominaniya o Scriabine* (Moscow: Classica-XXI, 2003), 157.

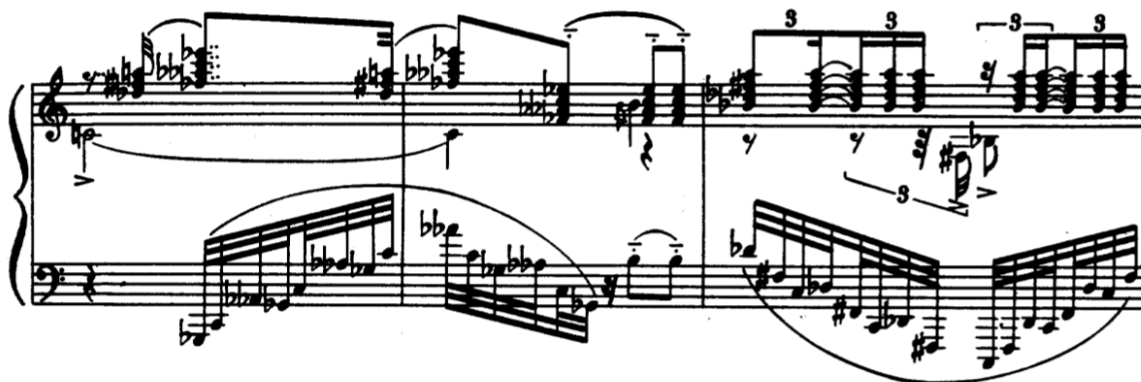
⁴¹ Sabaneyev, 160.

Example 5. Scriabin, Piano Sonata no. 7, bars 157-162 (preceding the recapitulation).

The image shows a musical score for Scriabin's Piano Sonata no. 7, bars 157-162. The score is annotated with colored circles to highlight specific harmonic and rhythmic features. The top system (bars 157-162) is marked 'de plus en plus sonore et animé' and 'cresc.'. The bottom system (bars 161-162) is marked 'molto più vivo come de éclairs', 'm. s.', 'f', 'p', and 'cresc.'. The annotations include red circles around major-minor chords in the upper register, blue circles around tritones in the middle register, and green circles around chords made of two tritones in the lower register.

In this example, multiple colours are used to show different layers. From a harmonic (or vertical) point of view, blue marks the tritone, red highlights two major-minor chords (ie four-note chords containing the major third of the triad at the bottom and the minor third of the triad at the top), and green shows a chord made up of two tritones. From a rhythmical (or horizontal) point of view, this is a classic example of different speeds of ringing in different registers: the top (red) layer is the fastest, the middle (blue) layer rings every half a bar, and the bottom (green) layer strikes once a bar. All together, this creates a beautiful polyrhythmic texture, taking Liszt's and Mussorgsky's ideas to a further extent. (Similar principles apply in Example 6).

Example 6. Scriabin, Piano Sonata no. 7, bars 171-173 (fragment of the recapitulation).



Multi-layered rhythmic patterns and the use of all the registers of the piano make this passage sound as if one was immersed in the rhythms and resonances of a Russian *zvon*. For Scriabin, they were “bells hung to the sky, which would call the world's folks to the act mysterium”.⁴² According to Leonid Sabaneyev, who was a frequent visitor to the composer’s home,

...he loved those bell echoes, which sounded under his hands as if in two layers, one close and the other far away, so not all the notes of the harmonies were equally strong, but one part sounded bright and real, whilst the other was a repercussion, as if a response to the first.⁴³

In conclusion, the selected pieces mentioned above are merely indicative and by no means exclusive examples of the principles of harmonic and rhythmic layering that extend throughout much or most of the repertoire selected for this study. Once the feature of layering has been noticed and understood - from the score - the greater challenge becomes how best to communicate these features of the music through performance, so that they can really be heard. In order to address these performance challenges it was necessary not only to moderate some of the tempos normally associated with the chosen pieces but also to moderate and carefully to

⁴² Sabaneyev, 157.

⁴³ Sabaneyev, 157.

differentiate the dynamic levels of the superimposed layers. It was not enough simply to play the pieces in a literal manner and hope that they might speak for themselves. It was necessary to interpret in order to communicate the ideas and the sonorities. Those challenges will be explored in the next chapter.

Chapter 3: Creating the Sound

The piano is not an ideal instrument to imitate all other instruments. It is capable of suggesting strings, woodwind, brass, and even the human voice, but it lacks the capacity to sustain. After the initial attack, the sound decays. There are no true, expressive crescendos, and there is no expressive vibrato. But precisely the characteristics that are limitations when trying to suggest the more expressive instrument become ideal for simulating the attacks and resonances of bells. The percussive action of hammers hitting the strings provides a similar attack and strike-tone articulation as that of the tongue (or clapper) of the bell striking the sound bow. The sustaining quality of the right pedal, lifting all the dampers from the strings, enables the whole instrument to vibrate with sympathetic resonances according to the upper partials of the harmonic series, just as a single bell vibrates with a complex harmonic spectrum.

To achieve good quality forte and fortissimo sounds, the pianist needs to employ arm weight and hard weight to depress the keys of the piano. The muscles of the arm must be relaxed and the wrist supple to absorb any shock, and the fingertips activated to create a focused, yet deep and full, not shallow and harsh sound. These and other aspects of the pianism relevant to my training in Moscow are covered by Josef Lhévinne,⁴⁴ and Samuel Feinberg.⁴⁵ Both books discuss the connection between gestures and sound quality, tone and type, that relate to the techniques that have been attempted here in simulation of bell sonorities.

When working to create bell sounds on the piano, the pianist must use a quick type of attack on the note using very firm fingertips with curved fingers, similar to a staccato or striking effect, imitating the motion of the tongue striking the bell. The wrist, instead of absorbing the shock of

⁴⁴ Josef Lhevinne: *Basic Principles in Pianoforte Playing* (New York: Dover, 1972; reprint of the original 1924 edition).

⁴⁵ Samuel Feinberg: *Pianism kak iskusstvo* (St.Petersburg: 'Lan', 2017) 560 pp.

the impact on the notes, is used to bounce out from the key bed. The effect on the sound is a sharp, clean and clear tone that is reminiscent of the striking of a bell. In differing dynamic sections, this general technique is reduced or amplified accordingly. This particular touch is not to be confused with traditional staccato with the pedal engaged. The sound has a definite core, and does not have the same lightness as staccato.

The pedal is a vital tool for the recreation of bell tones on the piano. As bells do not have mutes, overtones keep ringing once the bell is struck, overlapping and mixing harmonies. Therefore on the piano, one should endeavour to use pedalling techniques that allow such effects to sound. It is important to find a balance in the use of the pedal, so as to avoid muddy, unattractive sonorities that detract from the intended harmonies of the piece. In general, when using the pedal to achieve bell imitation sounds on the piano, the pedal cannot be cleared rapidly or too obviously between harmonies. When there are longer phrases featuring multiple harmonies, techniques such as fluttering pedal, quarter pedal and half pedal can be employed. When the bell effects are in the upper register of the piano, the pedal can be engaged fully, without the need to change frequently as the strings in this register are shorter and the sound fades away naturally. The lower the register on the piano, the more carefully the pedal must be treated and the more sophisticated techniques must be employed to avoid indistinguishable sonorities whilst still maintaining resonance.

The proliferation of overtones in bells means that when imitating these sounds, it is vital to employ overtones on the piano too. This is a task that requires careful balancing of harmonic chords. Traditional chord voicing often demands that the pianist accentuates the top note of the chord, giving immediate focus to the harmony and allowing all the other notes to form a complete sound with the upper note leading the way. The main point of difference between traditional chord voicing and bell imitation chord voicing is that the main emphasis in bell

imitation chords is that the upper note can act as a resonator or overtone, as opposed to a melodic device.

Arguably the most contentious feature of the discussion regarding pianistic techniques to imitate bell sounds is the timing. The more resonant the requirements of the sound, the more time is needed. Therefore, it is possible to adopt slower tempi than those generally expected or accepted by today's performance standards to allow this resonance to occur. These judgements of tempo are subject to the performance venue as well as the instrument. It is possible to allow more time for resonance in larger halls with larger pianos; smaller venues and instruments have limitations in this regard, and therefore have reduced capacity in this area. It should be noted that the performances on these recordings approach the subject of tempo in a relatively experimental manner, and many of the tempos that have been adopted differ significantly from the received wisdom of how particular items from the repertoire are treated. Often they are slower, in order to give more time for the bell striking tones to activate sympathetic harmonic resonances from the upper partials of the instrument (for example, in the central, pentatonic bell pealing section of Debussy's *Cloches à travers les feuilles*, which is usually played faster than the performance presented here).

An experimental approach has also been adopted with regard to dynamics and articulation. The dynamic levels have been interpreted in relation to the register of the piano in which they appear. The dynamics shown in the score have not necessarily been adhered to, particularly when they cause certain problems, such as undue harshness in the top register of the piano (where the strings are short and thin) or undue loudness in the bottom register (where the strings are long and thick and can overpower the upper registers).

One of the greatest challenges of this project has been to achieve a satisfactory compromise between fidelity to the notated score, on the one hand, and bringing the bell sounds to life, on the

other hand. The submitted performances are not ‘cautious’ in this respect. They are intentionally experimental, and some of them may even be regarded as a little provocative. In the context of performance-based investigation, in which an aim is to produce performances that are out of the ordinary, pushing the boundaries of a conventional approach to the interpretation of the chosen pieces, such provocation has been deemed desirable. It is hoped that the unusual aspects of interpretation will enable the listener to hear the bells as they have not been heard before. Furthermore, there has been no attempt to try and document the pieces with performances that are in any sense ‘definitive’. Although recorded performance is the medium of communication, the longer aim is live concert performance. The act of recording a performance can, unconsciously, lead the performer to try and achieve an interpretation that is in some sense definitive. Therein lies a danger when one is attempting to investigate in an experimental manner. In the final analysis, artistic integrity must come into play. The performances must ‘work’ and each bell simulation must be appropriate to the context of the piece in which it appears.

In order to test these ideas of interpretation this chapter will now examine in a more detail three pieces which can be regarded here as case studies: Liszt’s *Sposalizio*; Enescu’s *Carillon-Nocturne*; and Rachmaninov’s *Etude-Tableau Op. 33/7*.

3.1 Ferenc Liszt, *Sposalizio*, S.161

Liszt seems to have been the first European composer to simulate bells through harmonies that contain a spectrum of bell partials. Saint-Saëns and then Enescu are among those composers to discover that a carillon-effect could be successfully produced on the piano in both major and

minor tonalities by melodic layering of interval and dynamics (Saint-Saëns),⁴⁶ by ‘cloning’ the major sixth (Enesco)⁴⁷ or minor sixth interval (Enesco)⁴⁸ respectively.⁴⁹

There are several short pieces by Liszt that have titles making explicit references to bells (such as *Cloches de Genève*, *Carillon*, or *Abendglocken*). But one of the most interesting examples of Liszt making extensive reference to pentatonic bell sonorities does not in its title make any reference to bells. *Sposalizio*, the opening piece of Liszt’s *Années de pèlerinage, Italie*, alludes to the Marriage of the Virgin, depicted in Raphael’s painting of the same name. Liszt first saw the painting in Milan in 1838,⁵⁰ and chose it to be included on the title page in the first edition of the work (see Example 7), thereby pointing to its programmatic influence.⁵¹ Calella considers it to be one of the first compositions to have been inspired by visual art,⁵² and therefore ahead of its time.

⁴⁶ His Piano Concerto No 5 dating from 1896 has bell sonorities in the second movement. They are discussed in some detail by Myron Levitsky: ‘Saint-Saens scores bell-like piano tones’ in *Physics Today* 68, (2015) available on the web as <https://doi.org/10.1063/PT.3.2703>.

⁴⁷ Carillon nocturne in 1916.

⁴⁸ Piano Sonata No. 1 in F-sharp minor in 1924.

⁴⁹ Szasz, Tibor. *Eternity and the Passing Moment: Decoding the “Total Mystery” of Church and Carillon Bell Evocations in European Piano Music including George Enesco’s Choral – Carillon nocturne and Sonata for piano in F-sharp minor op. 24*, 2011, 3. (Szasz 2011)

⁵⁰ Calella, Michele. "Raphael, the Virgin Mary, and Holy Matrimony: Recontextualizing Franz Liszt's *Sposalizio*." *Studia Musicologica*, vol. 59, no. 1 (2018), 5.

⁵¹ Calella 2018, 3-4

⁵² Calella 2018, 5.

Example 7: Liszt, title page of *Sposalizio* (Mainz: Schott, 1858)

PLATE I Title page of Franz Liszt's *Sposalizio* (Mainz: Schott, 1858)



Although neither the title of the painting nor the image itself indicate the presence of bells there may have been an association in the composer's mind with an indoor marriage (the figures in the painting are outside and in front of the church, not inside it, and there is no obvious bell tower). It is not far fetched, then, to make a sonic connection with an image of betrothal. There are also some biographical factors that could suggest some personal significance for the composer and his then partner. The piece was composed while he was travelling through Italy with Marie d'Agoult (mother of Cosima von Bulow, later Cosima Wagner), hence some researchers have suggested a biographical inspiration and direct correlation between the Virgin as d'Agoult, and Saint Joseph as Liszt himself.⁵³ Liszt's devoutly religious status seems to support this theory

⁵³ Calella 2018, 8.

(although Marie was unable to divorce and remained married to her husband, she and Liszt had three children together). Liszt and d'Agoult eventually 'separated' from their de facto relationship, and the composer entered into his de facto relationship with Princess Carolyne zu Sayn-Wittgenstein. Disappointed by the barriers in the way of their marriage, Liszt opted for a simpler life in 1863, moving into a modest apartment in the Madonna del Rosario monastery on the outskirts of Rome. It was here that he received the four minor orders of the Catholic Church in 1865. In the biographical context of these de facto relationships, neither of which could be legitimised by marriage, the focus of inspiration for *Sposalizio* may be regarded as somewhat ironic.

The most significant musical feature of *Sposalizio*, announced in the opening melodic phrase, is its anhemitonic pentatonicism. This phrase, descending from a middle B natural in the tenor register to a low B natural in the bass register, emphasises as adjacent melodic intervals only major seconds and perfect fifths (with one perfect fourth). This type of pentatonicism could also give rise to minor thirds (in this case the minor thirds would be D#-F# or G#-B), but Liszt does not feature those intervals in the theme. It has already been noted that anhemitonic pentatonicism in its various sets and sub-sets is a feature of the Central European and Western European traditions of bell installation and bell ringing (but it is not a feature of the diatonic English Change Ringing tradition, or the more dissonant Russian Orthodox tradition). Here the pentatonic set could be described as a "major pentatonic" on B (ie B, C#, D#, F#, G#). Although the line is modal rather than tonal (the absence of semitones means that there are no diatonic tetrachords or leading note functions) the tonal effect is of a dominant preparation on B (preparing for E, as suggested by the key signature). It should be noted that this opening pentatonic phrase is slurred indicating a legato treatment of the line. Most performances treat the line melodically in this legato manner, but the bell character of the pentatonic line can be brought out if the finger and wrist articulations are not legato, but detached (they will not, however,

appear to be detached, because the whole line should be bathed in pedal, thus producing what can be called a ‘harmonic shadow’ of the line). It is also thought that the question and answer phrases that ensue are in some way representative of the ‘question and answer’ of the groom’s proposal and bride’s acceptance.⁵⁴

This case study compares two recordings (by myself) performing *Sposalizio*. The first recording was undertaken in what might be considered a conventional style of interpretation (i.e. one in which the bell sonorities and pentatonic bell phrases were not brought out with detached articulations, but played legato). The second one was performed in a more experimental manner with the bell sounds emphasised by means of detached articulations, longer pedalling than usual (enabling the pentatonic lines to resonate as pentatonic chords), and a steadier tempo, particularly in the later part of the piece where the pentatonic bells cascade downwards in a joyful and exuberant manner from a high register.

Example 8 shows the opening line. Significantly, no pedalling is indicated, thus leaving the performer to decide what might be appropriate. Many performances have little or no pedalling for this opening phrase, but such interpretations seem to miss the point about pentatonic harmony. One could argue that the score does not disallow pedalling for the melodic phrase. One could even stretch the point and suggest that the long phrase marking implies some degree of pedalling. Blurring of the line is not really a problem, though, because the absence of semitone relationships means that the dissonances (of major seconds) are mild.

⁵⁴ Laurence Le Diagon-Jacquin, *La musique de Liszt et les arts visuels. Essai d’analyse comparée d’après Panofsky, illustrée d’exemples, “Sposalizio”, “Totentanz”, “Von der Wiege bis zum Grabe”* (Paris: Hermann, 2009), 380 (as found/translated in Calella 2018, 5).

Example 8. Liszt, *Sposalizio*, bars 1-2

The pentatonic line returns in bars 5 and 6, and then in the left hand in bars 10, 12, and so forth. By the time we reach bars 19 to 22 we have chordal arpeggiations in the right hand that create an effect of rhythmic layering (in quavers) against the melodic line in the tenor and bass registers (in crotchets). It would not be ideal for such a passage to be played ‘dry’, with little or no pedalling. Perhaps then, it is justified to treat the opening statement of the melodic line in a similarly sustained and resonant manner. Harmonically, the effect of this passage is transformed by taking the line down to a low C#, whereas previously it had cadenced on B.

Example 9. Liszt, *Sposalizio*, bars 19-22

As at the beginning, the left hand line is marked with a legato slur, which would suggest that this is to be performed as a melodic line with an appropriately changed pedal. However, the pentatonic pitch pattern indicates that this motif is a bell imitation. If viewed in this manner, it is arguable that legato sign means only phrasing and does not indicate physical articulation. An

interpretative decision was made, therefore, not to change the pedal too often or to make the line clear. It was allowed to become blurred and for the pentatonic set to resonate.

The fact that two recordings of this piece have been included in this submission requires some explanation. One version is not necessarily better than the other: there is no right or wrong. But one is more conventional (one might say ‘safe’) whereas the other is intentionally experimental.⁵⁵

After reviewing several recordings of *Sposalizio* I managed to arrive at what was more or less a ‘traditional’ or ‘conventional’ interpretation (see CD 2, track 1). This was a somewhat difficult task as everything is relative: every artist has a different style and sound. This ‘traditional’ interpretation is characterised by melodic lyricism, emphasising the lines (rather than the pentatonic harmonies they produce in the pedal). The first indications one sees are the tempo marking of ‘Andante’, the dynamic marking of ‘piano’, and a long legato mark over the left hand in bars 1 - 2. If interpreted as a single melody, this line should be played with either no pedal or pedal that is changed on every note (for some pianistic resonance), producing a manual legato. To be able to connect the sounds before they fade away too much, one needs to choose an appropriate movement, treating Liszt’s mark of ‘Andante’ in the manner of ‘non troppo lento’ or ‘Andante moderato’. Different sources suggest a very wide range of ‘Andante’ speed: from 56 BpM in some cases (commonly used Maetzl metronome at 84), to indications on modern metronomes at 80-100, and even up to 108 BpM sometimes.⁵⁶

In order to create a lyrical atmosphere one chooses to produce a lighter, brighter and ‘clean’ cantabile sound which of course corresponds with the multiple ‘dolce’ remarks in the score. By

⁵⁵ An apology is offered because of some unintended ringing sounds caused during pedal changes. These were due to unregulated dampers on the piano used. They could not be regulated before these particular recording sessions.

⁵⁶ Metronome differences are discussed in the following web-based source: [http://www.goodwinshighend.com/music/classical/tempo_glossary.htm].

balancing chords using the top note (and marking it), one can create a clear and bright tone. The work is connected together by following long melodic and chord progression lines such as from bars 60 - 64 and 46 - 49. Together with 'con moto' movement, a lighter use of the pedal produces an effect of purity, a theme tied deeply to the piece itself.

The pedal plays a very significant role here. Traditional use of the pedal suggests changing it with every new harmony (for example, in bars 19 - 20, 68 - 69) or, in case of highlighting the importance of certain melodic lines, it could be changed on every note of melody or not used at all (for example, in bars 1 - 2, 32 - 30 or 50). However, if we take into consideration the pitch design of the melodic lines (bars 1 - 2 and similar) it becomes quite clear that these are pentatonic bell sonorities. In this light, one's interpretation can experience a significant alteration. What if the legato markings (bars 1 - 2, 75 - 76 and similar) are taken only as a phrasing indication, and not as physical articulation? When one makes an effort and articulates those lines in a certain 'striking' manner (for example, detached finger staccatos, but pedalled), taking care of general phrasing, a totally different - and far more bell-like - effect is produced. Remembering that bells do not have mutes or dampers, and continue to ring for some more time after being struck, one may allow longer pedalling to the point of mixing different harmonies to a certain extent defined by artistic taste.

By following bell imitations throughout the piece and using them as a thread, one comes up with a different principle that holds the work together. If in the more traditional interpretation the tempo had to be moved forward to make chords connect from bar to bar before they fade away (e.g. as in bars 60 - 67) and long lines focused on (contradicting the marking of ritardando in the score); with this new approach, the general forward movement should be slowed down in order to allow all the resonating to take place, paying more attention to smaller units and particular sonorities and using those to hold the music together.

Example 10. Liszt, *Sposalizio*, bars 59-67, transformed bell motives marked in red.

The image shows a musical score for Liszt's *Sposalizio*, bars 59-67. The score is in two systems. The first system shows the right hand (treble clef) and left hand (bass clef). The right hand has a 'rallentando a piacere' marking above it. The left hand has 'un poco marcato' and 'sotto voce' markings above it. Red circles highlight specific bell motives in both hands. The second system continues the piece with similar markings and red highlights.

At the same time, use of a longer pedal allows longer structures to be formed, stronger climaxes (such as in bars 68 - 74 or 108 - 112). Overall, the chordal balance is moved to the lower registers, making the piece sound less youthful but more deep, mature and possibly more colourful. All of these more experimental ideas about interpretation of the bell sonorities (affecting articulation, phrasing, dynamics, blurring, pedalling, and tempo) are represented by the second recording (see CD 2, track 4).⁵⁷

3.2 George Enescu, *Choral and Carillon Nocturne*, Op. 18, from *Pieces Impromptues*

George Enescu was born in the Moldovian region of Northern Romania on 19 August 1881.⁵⁸

One of eight children, Enescu was the only of the children to survive a diphtheria epidemic which hit the family. In 1884, at age three he relocated with his parents to the nearby village of Cracalia,⁵⁹ where he spent his childhood surrounded by nature and Romanian liturgical music,

⁵⁷ One must, of course, be cautious about the extent of such experimentation, but testing the limits of what is possible, and artistically desirable according to taste, helps one to judge where the boundaries of taste lie.

⁵⁸ Sadie, Julie Anne, and Stanley Sadie. *Calling on the Composer: A Guide to European Composer Houses and Museums*, Yale University Press, 2005, 170.

⁵⁹ Sadie 2005, 170.

having adopted his mother's Orthodox religious beliefs.⁶⁰ Romanian liturgical music is a fusion of Byzantine, Greek and Russian music,⁶¹ and these sounds, particularly the bells of surrounding churches and monasteries ring throughout Enescu's compositions.⁶²

The *Choral & Carillon-Nocturne* make up the last of seven works in the posthumously published Op. 18 collection.⁶³ The work was composed in 1916, however Enescu's original autograph manuscript was lost during World War I, and it was feared the piece was lost forever. An additional challenge faced by performers lies in the fact that in three published editions released in 1958, 1982 and 1983, the editors disregarded Enescu's request that all piano works published after his *Piano Sonata No. 1* in F# minor be published with his written explanation of rarely used signs attached.⁶⁴

Although only the *Carillon Nocturne* is relevant to this study, *Choral* is included here too because of thematic links between two pieces, not to mention that they are intended to be played together, and connected by pedal (see example 13).

Instead of using conventional notation, Enescu adopted the Saint-Saëns method of notating with size-coded large and small notes (Example 11). The large notes in the Carillon cadenza indicating the hierarchical supremacy of the E-flat major tonality, and the small notes indicating

⁶⁰ Rus, Livia I. *A Comprehensive Study of George Enescu's Piano Suite no. 2, Op. 10 in D Major*, University of Houston, Ann Arbor, 2008, 1.

⁶¹ Sandu-Dediu, Valentina. "The Beginnings of Romanian Composition: Between Nationalism and the Obsession with Synchronizing with the West." *Nineteenth-Century Music Review*, vol. 14, no. 3, 2017, 315–337.

⁶² Rus, 1.

⁶³ Szász, Tibor. Traditional and Oriental models in the bell-inspired piano music of Georges Enesco. Delmenhorst, 18-20. November 2011, Symposium Handout (page 1) (Szász 2011).

⁶⁴ Szász 2011, 8.

to the performer that they do not assume any major tonal function, merely providing the bell like harmonious layers sought.⁶⁵

Example 11. Saint-Saëns, *Piano Concerto No. 5* (1896), II, cadenza, I6/4, size coded clusters with large strike notes.⁶⁶

Although works by Saint-Saens were not selected for inclusion in this project, it is worth noting in passing that he had a particular interest in bell resonances, and this interest was explored in the second movement of his fifth piano concerto. His approach to layers bell harmonics has been discussed in some detail by Myron Levitsky who explains thus:

The bell-like quality of the sound that comes from the piano is an artifact of the way Saint-Saëns scored the piano part. The left hand plays a series of notes moderately loud (mf), which the listener hears as the melody.

Simultaneously, the right hand plays the twelfth above each lower note, and the sixth above that, very softly (pp). Those two notes are harmonics (3:1 and 5:1, respectively) of the lower note, and when they are played together

⁶⁵ Szász 2011, 9.

⁶⁶ Szász 2011, 5.

with it, they blend with the lower note and give it an exotic, bell-like timbre.⁶⁷

Enescu's notational solution to the challenge of upper partials is shown below in Example 12. Whereas Saint-Saëns used parallel major triads, with no added dissonance (apart from the false relations resulting from the parallelism) Enescu adds a major third above each of the strike tones and, above that, an augmented octave in the top register. If these parallel augmented octaves were to be played at the same dynamic as the primary part in the lowest voice the dissonances would be strident, and there would be a disproportionate emphasis on the top part (because of the short strings in this high register of the instrument). Another feature of Enescu's notation worth noting is the long, legato slur over the left hand line, but with a strong accent on each individual note. Clearly, the long slur is indicative of the melodic shape rather than the left hand or finger articulation (this observation can be related to the discussion, above, about the opening line of *Sposalizio*).

⁶⁷ Myron Levitsky: 'Saint-Saens scores bell-like piano tones' in *Physics Today* 68 (2015), 3-9.

Example 12. Enescu, *Carillon Nocturne*, cadenza, I6/4, notation of large strike notes.⁶⁸

The image displays three systems of musical notation for a piano cadenza. Each system consists of a piano (left) and right-hand (right) staff. The first system is annotated with 'Inverted V-shaped melodic contour: ascent and descent' and 'Repeated notes' above the right-hand staff. Performance markings include *ben animato*, *ten.*, *pp*, *first stophe*, *zigzagged up-and-down*, and *pochiss. rit.*. The second system is marked 'a tempo ben animato second stophe' and includes *pp*, *ben f*, *(sempre Ped.)*, and *sf*. The third system features *poco a poco rit.*, *ten.*, *ppp*, *f*, *ppp*, *mp*, and *f*. A bracket on the right-hand staff of the third system is labeled 'augmented octave interval span (inside this span: major sixth and major third intervals)'. The score is written in a key with two flats and a 6/4 time signature.

What is very clear from Example 12 below is the performance detailing of Enescu's writing. Every aspect of interpretation - the dynamics, articulation, nuanced pedalling and even *rubati* - has been thought through and written down by the composer with great precision. The number of performance remarks in every bar is countless, and virtually every note has something written about it. The same is true of the opening (see Example 13):


⁶⁸ Szasz 2011, 5.

Example 13: Enescu, *Carillon Nocturne* (beginning).

L'istesso tempo (moderato, non troppo lento)

PIANO

One notices that in the high registers of the piano Enescu rarely uses any dynamics above single *forte*, which makes for an interesting comparison with, for example, Rachmaninov's *Easter* or Messiaen's *Amen de la Consommation*. Why is this the case? Perhaps it is because Enescu discovered how to balance - and how to notate the balancing - of different layers of music in order to achieve subtle sonorities without overpowering the texture. The bottom notes have the heavy *forte* grounding, and everything above is *pianissimo*. As a result, we hear that the key is E-flat major with some 'overtone' at the very top, a perfect impression of an imperfectly tuned carillon. In his perceptive discussion of the layered dynamic differentiation in the autograph score, Tibor Szasz discusses in some detail the need for the composer and the performer to emphasise the "strike note" [or strike notes] in the lowest part and to ensure that the upper partials played in parallel with the lowest line blend with rather than overwhelm the harmonic resonance of the leading part.

A special mention must be given to Enescu's pedal indications. He uses two signs for pedal- one is the standard *Ped.* mark, the other one is marked with . Historically, the latter sign could have a number of meanings but there is a document where Enescu's intentions are explained: the preface of the published score of his *Piano Sonata No. 1*:

Example 14. A fragment of the preface of the first edition of Enescu's Sonata No. 1.

Le signe O veut dire qu'on enlève à moitié la pédale forte, pour la remettre ensuite, de telle façon que l'harmonie précédente continue encore à vibrer en partie.

(The symbol O means that one half-releases the pedal strongly then pushes it down again, thereby letting part of the previous harmony resonate).

Enescu perfectly described the principle of changing the pedal so that the main harmony keeps resonating whilst other parts (in higher registers) can be cleared, enabling very long lines of music to be connected by the same harmony and yet not overcrowding harmonies. This is possible on the piano because the long thicker strings in the low register take a little longer to be muted than the thinner and shorter strings at the top (subject to a well-regulated piano). This pedal technique is used by many of the great masters, and Enescu was not an exception. It is possible to speculate that if Enescu made an edition of *Sposalizio* he could suggest such pedal markings.

Choral and *Carillon*, where all rubato is written down so exactly by using variable note durations, can seem 'mechanical' or abstract if the performer keeps counting the visually complicated rhythms. This is perhaps a disadvantage with such precise writing; the performer can be a bit overwhelmed with counting. However, particularly in *Choral*, if the performer imagines the image of a choral conductor, everything changes. A conductor performs some 'passes' with his hands and arms, and the choir reacts. The 'passes' are not strictly in time, but very flexible. If interpreted in this manner, the *Choral* starts to make sense as a very natural composition, and the rubati make perfect sense. The solution is to study the score rigorously, but then 'forget' what is written and use rubato within the phrasing to give the sense of improvising on the spot.

3.3 Sergei Rachmaninov, *Etude-Tableau*, Op. 33 No. 7

As the origins of much Russian music derive from folk and church music, it follows that much of Rachmaninov's compositions resound with the ringing of bells, frequently interspersed with folk melodies and his plainsong of preference, the *Dies Irae*. Rachmaninov composed to "give tonal expression to [his] feelings, just as [he] would speak to give utterance to [his] thoughts",⁶⁹ suggesting that unless evidence of programmatic intention existed, his compositions were very much an indication of internal feelings or nostalgia represented in musical form. Rachmaninov's childhood was significant in terms of his compositional style. Though he was born into a musical family of nobility,⁷⁰ family circumstances forced the sale of the family home, Oneg,⁷¹ ultimately leading to the separation of his parents and the departure of his father shortly after.⁷² Rachmaninov had been close to both parents but particularly his father, and his departure devastated the young Rachmaninov and his mother Lyubov', who never recovered, losing interest in her children as she mourned for her husband.⁷³ However, Rachmaninov's grandmother, Boutakova, doted on the child, and prior to his departure to Moscow in August 1885, Rachmaninov spent three months living with her at Borisovo, a small estate she had purchased for his benefit by the river Volchov. In Borisovo he spent countless hours listening to the Vesper bells fill the air from neighbouring Novgorod.⁷⁴

⁶⁹ Ewen, David. "Music Should Speak from the Heart," Rachmaninoff interview, *The Etude*, no. 59 (December 1941), 808-848 (Ewen). Quoted in Martyn, Barrie. *Rachmaninoff: Composer, Pianist, Conductor* (England, USA: Scolar Press, Gower Publishing, 1990), 32. (Martyn).

⁷⁰ Sergei Bertensson and Jay Leyda, *Sergei Rachmaninoff, A Lifetime in Music*, (New York: New York University Press, 1956), 1. (Bertensson).

⁷¹ Sergei Rachmaninoff, and Oskar Von Rieseemann, *Rachmaninoff's Recollections: Told to Oskar Von Rieseemann*, trans. Dolly Rutherford (New York: The Macmillan Company, 1934), 26. (Rieseemann).

⁷² Bertensson, 4.

⁷³ Rieseemann, 30.

⁷⁴ Rieseemann, 37 – 38.

Rachmaninov refers to his Grandmother Boutakova as being one of the two most profound musical impressions on him as a child.⁷⁵ Being devoutly religious, Boutakova frequently took Rachmaninov to church with her where he recalls spending hours listening to church music. Evidence of its influence on the composer, even if only subconscious, stems from his recollections of how naturally he memorised the music. After visiting church with his grandmother, they would return home where he played from memory what he had heard and in return receive twenty-five kopeks from a doting Boutakova.⁷⁶

Rachmaninov composed the *Etudes-Tableaux, Op. 33*, in 1911. The etude in E-flat Major was described by the composer as ‘*yarmarka*’, which can be translated into English as carnival or public event, a mix of a market and entertainment. The renowned Soviet musicologist Yury Keldysh claims that the names given by Rachmaninov are not particularly accurate, and may not represent the character of the music correctly.⁷⁷ He states that this particular etude is much more epic than a simple carnival scene. The middle section of the etude is certainly not epic but rather a humorist scene or sketch, which is very clear in the composer's own performance. However, the beginning and especially the end have depth and monumentality. Festive bells can be heard in all layers of the texture, and the key of E-flat major brings to mind *Great Gate of Kiev* by Mussorgsky. This Etude-Tableau is thematically and texturally very close to Rachmaninov’s Prelude in E Major, Op. 32 written just one year earlier in 1910.

This well known work has developed a traditional style of interpretation throughout the 20th century and into the 21st. In this section I will compare one of the best known interpretations, by Vladimir Ashkenazy⁷⁸ and recorded in 1981, with a recording made by myself using the bell performing techniques, track number 3 on CD 1.

⁷⁵ Riesemann, 32.

⁷⁶ Riesemann, 33-34.

⁷⁷ Keldysh, Yu.V.: *Rachmaninov i ego vremya* (Moscow: Muzyka, 1973), 371-372.

⁷⁸ YouTube, < <https://www.youtube.com/watch?v=bD-RzA4KvGE> >. accessed 20 March 2020.

It is worth mentioning that Rachmaninov's own recording of the piece, undoubtedly one of the greatest, has been omitted from this analysis as it cannot be considered 'traditional'. It is unlikely that many modern performers produce Rachmaninov's unique type of sound and articulation. In my opinion this is largely due to the different instruments featuring an action conducive to a virtuosic and light tone. Ashkenazy's pianism is much more 'typical' and 'traditional' for our times, and will therefore be used in this study.

Rachmaninov indicated tempo and dynamic markings of 'allegro con fuoco' and '*ff* molto marcato' at the beginning of the piece. No pedal indication is given, leaving it to the discretion of the performer. Ashkenazy takes full advantage of the mark *ff*, producing an assertive, if not to say aggressive, and dry sound, balanced by a very strong and brilliant top. All semiquavers (see bar 4 for example) are extracted in a highly bravura style, making the title 'etude' fully relevant. At the climax, (bar 44 onwards) Ashkenazy uses this opportunity to take the etude at full speed, using a direct, dry and bright touch. In my opinion, this approach may be a bit harsh, and is very right-hand orientated.

In my interpretation, I tried to pay more attention to the fact that in the first bars and later on there are tenuto markings instead of the commonly interpreted sforzando:

Example 15. Rachmaninov, *Etude-tableau*, op. 33 no. 7, bars 1-3.

The image shows a musical score for the first three bars of Rachmaninov's 'Etude-tableau, op. 33 no. 7'. The score is written for piano in 2/4 time, key of B-flat major. The tempo is 'Allegro con fuoco' and the dynamics are 'ff molto marcato'. The score consists of two staves: a treble clef staff and a bass clef staff. The treble staff contains a series of chords and moving lines, with tenuto markings (horizontal lines above notes) over the notes. The bass staff contains a series of chords and moving lines, also with tenuto markings. The first bar has a whole note chord in the treble and a half note chord in the bass. The second bar has a half note chord in the treble and a half note chord in the bass. The third bar has a quarter note chord in the treble and a quarter note chord in the bass. The score ends with a double bar line.

Why did Rachmaninov specifically write these tenuto markings? It is arguable that he didn't intend an acute, sharp sound but instead a warmer and deeper one, which is normally associated with tenuto. Another possibility is that these markings were intended to soften the effect of marcato and *ff*.

In my interpretation, I decided to use the performance techniques discovered whilst exploring Enescu's approach by balancing the opening bars by the bass voices and letting the treble notes reflect as overtones. This was done in order to leave room for later dynamic development, and to avoid giving everything away in the very beginning. I chose to add light pedal throughout the staccato quavers so they would not make a severe dry contrast with the warmer tenuto notes. In bars 6 - 8, 17 - 18 and later on 39 - 40, I tried to produce the effect of three layers of bells.

I evoked the deep and slower low bell in the lower voice (marked in red), on which all the other harmony 'hangs'; slightly more movable bells in the middle register (marked in green); and very fast and colourful bells in the upper registers (marked in blue):

Example 16. Rachmaninov, *Etude-tableau*, Op. 33 No. 7, bars 6-11.

The musical score for Example 16 consists of two systems. The top system is a grand staff with a blue oval around the right-hand melody and green ovals around the left-hand accompaniment. The bottom system is also a grand staff with a red oval around the left-hand accompaniment and green ovals around the right-hand accompaniment. Performance markings include 'cresc.', 'poco rit.', 'a tempo', 'ff', and 'p'. Fingerings are indicated with numbers 1-5.

I used the pedal in a different manner by resting on the notes slightly longer and without clearing it abruptly, allowing a stereophonic illusion to take place. This is augmented in the climax (bar 44 onward), demanding a slight *meno mosso*.

Example 17. Rachmaninov, *Etude-tableau*, Op. 33 No. 7, bars 44-49.

The musical score for Example 17 consists of two systems. The top system is a grand staff with a blue oval around the right-hand melody and green ovals around the left-hand accompaniment. The bottom system is also a grand staff with a red oval around the left-hand accompaniment and green ovals around the right-hand accompaniment. Performance markings include 'm. d. molto marcato' and 'ff'.

3.4 Interpretive Challenges

At this point, it is worth mentioning that there were certain cases where I believe this different approach to performance was not as successful. As previously mentioned, one of the techniques involved in imitating bell sounds is approaching works at a slower tempo to allow resonance and overtones to ring. As I experimented with different approaches and tried to find my own unique interpretation of Scriabin's Ninth Sonata, I found myself more and more immersed in the bell sonorities. These sounds begin right at the start of the piece in the bottom voices, featuring tritones (highlighted in red in the following example). Among Scriabin's late sonatas, the Ninth gets played the most, and has developed more or less a 'common tradition' of interpretation, which follows the melody in the upper voice and overlooks the bell imitation in the lower voice.

Example 18: Scriabin, Piano Sonata no. 9, opening bars.

Moderato quasi andante
legendaire

The image shows the opening bars of Scriabin's Piano Sonata no. 9. The music is in 4/8 time and marked 'Moderato quasi andante' with the subtitle 'legendaire'. The piece begins with a piano (*pp*) dynamic. The score is written for piano, with a treble clef on the upper staff and a bass clef on the lower staff. The bass line features a tritone (F# and C) in the first measure, which is highlighted with a red circle. Other tritones are also highlighted in red throughout the opening bars.

I ended up making a number of recordings, of which the last seemed to me the most successful, and it was the slowest out of all. As a result of this slower tempo, all the bells were heard because there was enough time to resonate. However, after some time, I listened to it again and realised that the natural flow of the music was disturbed and that the whole piece felt stagnant, as if it was divided into sections. This recording was therefore rejected entirely and the recording from the live recital was used instead. It is hard to imagine Scriabin's music without 'air' and lightness, something he would mark *volando*, even in such a dark work. In my opinion, Scriabin

wasn't a composer who would create a compositional 'system' and religiously follow it, unlike composers such as Olivier Messiaen (even his philosophical views never formed a 'proper' system).⁷⁹ It would be, however, interesting to continue experimenting with this sonata to continue to search for a convincing and clear bell interpretation, yet without disturbing the flow. This sonata has been included into future programs, and is discussed in the next chapter.

I experienced interpretative challenges in Liszt's *Sposalizio*. This work, one of the central and most important in my submission, has been the most problematic for both the 'common' and 'bell' versions. The reason is simple: it is very famous and often performed, and I have heard it many times in concerts and recordings which results in a familiarity with the piece which is hard to shake when striking out and formulating one's own ideas. An idea for the sake of an idea can easily turn into a scholastic exercise. I have performed this work quite extensively, trying out both approaches, and find that I am still not 100% convinced with either interpretation.

Sposalizio has been an experimental and continuing journey. The challenges encountered in *Sposalizio* such as pedalling, tempo, phrasing and touch, are all discussed above. The pedal technique marked by 'O' and indicated in Enescu's score can certainly take place in this work.

Interesting questions relating to the pedal have undoubtedly been raised by many performers of Debussy's *La Cathédrale Engloutie*. Starting from bar 28, there is exceptionally daring writing, especially for Debussy's time. Many different parallel harmonies are "hanging" over a striking low C:

⁷⁹ As discussed by Sabaneyev in his book *Vospominaniya o Scriabine* (Moscow: Classica-XXI, 2003).

Example 19. Debussy, *La Cathédrale Engloutie*, bars 28-36.

No pedal indication is given by the composer. The most straightforward decision would be to employ the sostenuto (middle) pedal holding the low C note, whilst the right pedal could be changed accordingly. This is a commonly used approach, however some pianos don't have this pedal, or it may be unregulated. In this case, Enescu's pedal marked 'O' could be employed. However, it doesn't completely solve the problem because the chord texture is very thick and chords appear in low registers too, being too close to the very bottom note. Their resonance continues almost as much as the resonance of the bottom note after a slight pedal change. This is up to the performer as to what extent different harmonies can mix, or if at some stage the bottom note can be slightly 'compromised'. In this study, the sostenuto pedal was used in the end, although the right pedal was not changed too cleanly either so as to deliberately leave some mixing resonances. The most radical approach would be not to employ sostenuto pedal at all, and in dry halls this may be preferable.

Another difficulty encountered in the interpretation of bell-inspired performance techniques was discovered in *Amen de la Consommation* by Messiaen. It would be worth mentioning that Messiaen's prevailing dynamic levels in this piece are marked constantly high and loud, and this

created a particular performance problem that required some interpretative intervention. Whilst practicing both parts, I had to keep it quieter than indicated in the score because a lot of sound stress was placed on ears if this piece was practiced at the indicated dynamic level. When both pianists came together and performed the piece at the specified dynamic level, it appeared to be painfully loud, even in the large hall. Another problem that occurred was an unclear low level noise emanating from the bass (Piano 1, *ff* starting from bar 18, *fff* from bar 38 and even *ffff* in bar 49), which completely overwhelmed and cancelled the other layers except for the very top which sounded extremely harsh (in *ff* sections). We still recorded it and listened back, and the impression was not any better. At this point, some radical decisions and corrections were made in terms of dynamics. As the piece is not very short (over 8 minutes) the dynamic shaping, in my opinion, is important. It is very possible that very large halls can acoustically withstand such dynamic pressure; but smaller venues and recording studios may not work. Very high volume and numerous repetitions of similar musical material can have a very static and suppressive effect on the listener; as well as create a stagnant atmosphere in the music. Things became easier in bars 71 and especially in bar 95 (*Encore plus vif* markings) when music starts to move a bit. A decision was made to deliberately start at a moderate dynamic level, growing very slowly, not reaching *fff* where written, and thereby saving the main climax right at the very end, aiming for an impression of an iceberg, which always has more underwater than is apparent to the eye above water.

The same problems occurred and a very similar approach had to be taken for Rachmaninov's *Easter*. Even though Rachmaninov's movement is significantly smaller than Messiaen's *Amen* and less complicated, it still could create a sense of inertia and loudness since Rachmaninov's score dynamic markings only indicate *ff* and above. In this case, I took the score markings indicatively rather than religiously. These matters depend on the acoustic of the room, the pianos, and the composer in question. Such liberties are to be avoided with the interpretation of

works by Maurice Ravel, who said “Il ne faut pas interpréter ma music, il faut le réaliser” (you should not interpret my music, you should execute it”);⁸⁰ and “Je ne demande pas que l’on m’inprète mais seulement qu’on me joue” (I do not ask that one interpret my music, but simply that one play it),⁸¹ states this very clearly.

The two examples mentioned so far, Rachmaninov’s *Easter* and Messiaen’s *Amen de la Consommation* both needed significant dynamic manipulation to achieve a result I was more satisfied with. To contrast with these two examples, I would like to mention a case of piano writing that uses dynamics to excellent musical and pianistic effect. The last movement of Mussorgsky’s *Pictures at an Exhibition*, called *Great Gate of Kiev*, has a famous moment at bar 81 when ‘bells’ start ringing. Mussorgsky is in fact using his resources here very wisely. The bell section, featuring the tonally unstable combination of half diminished 7th and major 7th chords, starts at *mf*, and only 13 bars later a marking *cresc.* appears, leading to one *forte*. This first *crescendo* marking at bar 93 coincides with the beginning of the dominant bass of B \flat , and *forte* appears as the very first theme (*Promenade*) comes back in bar 97. A dynamic drop to *mf* at bar 105 employed, before growing in volume with indications at *f* and *poco a poco più cresc.*, this time finally reaching *ff* at bar 114, which is strengthened by *Meno mosso, sempre maestoso*. But then once again, Mussorgsky drops dynamics at bar 136 and starts another 26-bar build-up in order to achieve the final and greatest climax from bar 162 to the end, which in that case is not *ffff*, nor even *fff*, but only *ff*. The reason that the *ff* achieves the same effect as *fff* for example, is clever manipulation of the timing which is marked *Grave. Sempre allargando*. A dazzling build and climax is reached using very simple but well thought out expression markings.

⁸⁰ Schuller, Gunther: *The Compleat Conductor* (New York: Oxford University Press, 1997), 7-8.

⁸¹ Long, Marguerite: *Au Piano avec Maurice Ravel* (Paris: Julliard, 1971), 21.

Chapter 4: Communication through programming

In this day and age there are many ways for listeners to experience music, and live concert experiences form only part of the picture. One could argue that the reality for many people is to hear repertoire from CDs, from live streaming internet sites, or from radio broadcasts. The purpose of the present chapter is to consider how the selected repertoire might be presented - and the ideas communicated - through various types of programming.

As previously stated, the recital I was asked to undertake at the Adelaide Festival in 2012 was the catalyst for this project. At that point in time, I found myself linking together repertoire using my artistic intuition, as opposed to formulating ideas methodically. Much of the included music was Russian, or Russian-inspired music owing to my familiarity with this repertoire. As I furthered my research in this area, I discovered that despite the clear differences in the different traditions of bell-inspired music, there were also very noticeable similarities and linked influences amongst the repertoire.

To begin with, there will be an explanation regarding the CD submission for this project. Each CD is programmed using a similar approach to that I would use when programming a live recital, although with some differences. Pieces are chosen for their mood and their relationships to one another. Another factor that influenced the programming of the CDs was that in 2012, I commenced my Adelaide Festival bell recital with Scriabin's 7th Sonata. Over the duration of my research, I have deepened my knowledge and have come full circle and my bell-dedicated recital at Elder Hall in 2018 concluded with the very same sonata.

CD One is programmed around Russian and Russian-inspired piano repertoire. The first half features music recorded as part of the 2012 Adelaide Festival recital. Track number one is Alexander Scriabin's *Sonata No. 7*. This is a striking, extroverted and colourful work featuring a

wide range of dynamic contrasts and using a large range of the piano. I chose this piece to begin with to create a sense of awe and immersion in the audience. The virtuosic and stereophonic piece features multiple layers of bell ringing and tritones, which float across the hall. Track number two is *Golden Ring* by Charles Bodman Rae, a piece inspired by the Russian-Orthodox bell-chiming in the Coronation Scene of Mussorgsky's *Boris Godunov*. Though *Golden Ring* dates from 2012, its inspirations draw from a much earlier era, creating stylistic contrast with the work by Scriabin and making the 7th Sonata sound comparatively more modern.

Following *Golden Ring* are two highly contrasting Etudes-Tableaux by Sergei Rachmaninov. Track number three is Opus 33 No. 7, also known as *Yarmarka* (which translates as Carnival). This piece features cheerful and bright festival bells. Track number four, Opus 39 No. 7, is a dark piece which features dramatic bells at the climax point. The tempo marking is Lento Lugubre. This concludes the programming taken from the 2012 recital.

The next piece, track number five, is Debussy's *Reflets dans l'Eau*, possibly the lightest piece on the CD. This work was chosen to provide a sense of clarity and peace after the tumultuous and highly emotionally charged repertoire preceding and succeeding it. This piece was also chosen to emphasise the Franco-Russian connections that link Debussy with Russian music through his fondness for the music of Borodin and Mussorgsky and his friendship with Stravinsky. As previously mentioned, Debussy was hired as a music tutor for the children of Nadezhda von Meck, the patron of Tchaikovsky. In her service, and in her various houses, Debussy was exposed to scores of recent Russian music.

After *Reflets dans l'Eau*, come Liszt's *Ave Maria (Die Glocken von Rom)* as track number six and Mussorgsky's *Great Gate of Kiev* as track number seven. These two pieces share certain connections as previously discussed. By including *Great Gate of Kiev*, I feature Mussorgsky twice in this CD, as his work is referenced in *Golden Ring* by Bodman Rae. Concluding the

CD.1, tracks number eight and nine, are two movements from Rachmaninov's First Suite for Two Pianos, *Tears*, and *Easter*. The programming of CD.1 is determined by the Russian tradition of bell-chiming as well as the intercultural connections and influences between Liszt-Mussorgsky and Mussorgsky-Debussy.

CD Two is programmed around Central and Western European bell repertoire. Track number one begins with what I consider a 'common' interpretation of Liszt's *Sposalizio* (please see Technical Case Study 1), which is a lyrical version of this piece.

Track number two is *Prelude, Chorale and Fugue* by Franck, a work permeated by a four-note bell motif (B, F#, G, D) transforming through many transpositions and keys and finishing as B, F#, G#, D#, the same as the four-note pitch set (known in continental-European campanalogical circles as the Salve Regina motif) that opens Liszt's *Excelsior*, that also opens the Prelude to Wagner's *Parsifal*, and that represents the bells of the Grail Castle later in Act 1 of *Parsifal*.

Track number three creates contrast, after such a large scale, majestic work the introverted and quiet *Le Gibet* by Ravel, featuring a lonely, tolling bell, appears striking in its differences. The significance of this choice is that a single bell invites the composer to exercise harmonic imagination and ingenuity with reharmonizations that change the timbre and harmonic colour.

On track number four, we return to Liszt's *Sposalizio*. This is the 'bell' version, in which the interpretation is governed by a desire to achieve bell resonances and to enhance those resonances in terms of touch, articulation, differential dynamic layering and pedalling. One hopes that this second version is enhanced in terms of context by coming after Franck's *Prelude, Chorale and Fugue*.

Track number five presents a total contrast to everything that has come before. Rachmaninov's powerful *Etude-Tableau*, Op. 33 No. 9 in C-sharp minor (in some editions printed as No. 8),

features multiple layers of *zvон*. It is worth noting that this piece is in the same key as the composer's early Prelude op.3, also featured on this CD. Track number six is programmed to contrast against Rachmaninov: *Entre cloches* (Between Bells) from Ravel's early pair of pieces for two pianos, *Sites Auriculaires*. Track number seven is the other C-sharp minor bell-inspired piece by Rachmaninov, his famous *Prelude, Op. 3*, often referred to as The Bells of Moscow. Concluding CD 2, track number eight is an excerpt from Wagner's *Parsifal* (arranged for solo piano by Klindworth) featuring the four-note Salve Regina bell motif of C G A E (presented as interlocking and falling perfect fourths) travelling by transposition through multiple keys. The tonal plan of the CD is mostly connected. E - b - (eb) - E - c# - Db - c# - A (at the start of Wagner's fragment). The juxtaposition of Rachmaninov, Ravel, and Rachmaninov creates musical contrast, yet keeps three tracks together by tonal connection.

CD Three begins with Debussy's *La Cathédrale Engloutie*, chosen for its harmonic timbres and broad range of dynamic resonance. Although bells are not explicit in this piece, there are several passages, in different timbral layers and registers, that could be interpreted in terms of bell sonorities. The title for the piece (appearing at the end rather than at the top of the score, as with the titles of all Debussy's Preludes) suggests that bell sounds might be associated with the symbolism of a sunken cathedral.

Track number two is *Fulgura Frango*, by Charles Bodman Rae. This piece, for two pianos, was chosen for its explicit connections with the pentatonic tradition, derived in this case from three German locations: the bells of St. Kilian's Cathedral at Würzburg; the single, great bell of the cathedral at Erfurt in Thuringia (the renowned Maria Gloriosa bell), represented here in the middle section of the piece by both pianos in an antiphonal exchange of chords on the black keys; and the (mostly) pentatonic bells of the cathedral at Frankfurt-am-Main (the descending pattern of C#, B, A, G#, F#, E, C#, A, F#, E). Only the presence of the high G#, and the semitone created against A, departs from the prevailing sound of anhemitonic pentatonicism.

After *Fulgura Frango*, track number three features a work by Liszt: *Cloches de Genève*. There are two versions of this work. The later and better known version is a relatively short nocturne, but the earlier version (part of Liszt's *Album d'un voyageur*) is an expanded piece with extensive use of bell sounds. A decision was made to combine the two versions: to use the expanded part of the earlier version, and then go to the second part of the later version (featuring the main theme which was not in the first version) and continue to the end. This is the first recording of such a hybrid version. One hopes that the decision to fuse them together is justified on the basis that the obviously intended bell-sonorities are enhanced and the work then forms a more substantial and dramatic element of a programme.

The next three tracks feature the *Cloches* suite by Félix Blumenfeld: *Cloches et Clochettes* (track 4); *Glas Funèbre* (track 5); and *Cloches Triomphales* (track 6). The suite features both Germanic bell-ringing and Russian bell-chiming traditions, and has been included in the submission as an unusual example of the two traditions being combined.⁸² The three languages present in the score of this work, both in the Suite's title (Zvony - Cloches - Glocken) as well as the title of each individual piece may simply indicate different translations; or make the point that this suite combines different bell traditions (e.g. the first piece is based on a *Parsifalian* pentatonic motif E B C# G#, whilst the second uses tritonal combinations, typical in Eastern traditions, and the beginning of the third work has texture in the upper register which reminds of Eastern *zvon*).

Track number seven is Rachmaninov's *Etude-Tableau Op. 39*, a true masterpiece which concludes the whole Opus 39 with a bright and very powerful climax.

⁸² Felix Blumenfeld (1863 - 1931) was a Russian musician of exceptional talent and artistic merit. A student of Gustav Neuhaus (Heinrich Neuhaus' father), Fyodor Stein and Nikolai Rimsky-Korsakov, Blumenfeld graduated from Saint-Petersburg's conservatory with the Gold medal. A giant in his field, he was in contact with many prominent musicians. Blumenfeld conducted a Paris premiere of *Boris Godunov*. Among his students were Vladimir Horowitz, Maria Grinberg, Maria Yudina, Alexandr Tzfasman and others.

To create a sharp contrast, I programmed track number eight as Scriabin's *Sonata No. 6*. The composer was said to have never performed this piece publicly (only parts of it for his friends), partially because he had never learnt it properly⁸³, but also because it was rumoured that he was scared to summon 'evil spirits'. This work is full of dark bells imitated by tritones in all registers, a 'festival of *lugubre* tritones'. The contrast with Rachmaninov is made even more clear because of the tonality: the *Etude-Tableau* is written in D major, known as a majestic, happy key; Scriabin's Sixth Sonata starts with the same low D's yet harmonised completely differently.

Track number nine, *Cloches d'Adieu, et un Sourire* by Tristain Murail, can be taken as a 'postscript' for the *Sonata*. Its abstract and calm character allows it to link to the next and final piece on this CD.

Messiaen's *Amen de la Consommation*, track number ten and the final piece on this CD, was chosen for its climactic ending. It may have seemed more logical to have included the other work by Messiaen here (quoted by Murail in *Cloches d'Adieu, et un Sourire*), the prelude *Cloches d'Angoisses et Larmes d'Adieu*, but it had to be placed in CD 4 in order not to break a live recital program.

CD Four is a recording of a live recital given at Elder Hall as a part of 'The Firm' recital series of 2018. It represents the core idea of a bell-dedicated recital, and proves its viability on the concert stage. The recital consisted of two halves, with applause requested only at the end of each half to allow the connections between the repertoire to resonate with the audience. For an immersive effect, it was performed in a completely dark hall with a dim light shone only at the keyboard.

⁸³ Sabaneyev, 161.

The first half of the recital started with Borodin's *In a Monastery* from his *Petite Suite*. The work has bells in the beginning and end, making a little prelude and postlude for Russian folk melody in the centre. Written in C-sharp minor, it corresponds with the next work of the same key by Ravel, *La Vallée des Cloches*, which was also programmed here because of Ravel's admiration for Borodin. Then the contrasting, cheerful and light *Glockenspiel* by Liszt breaks the serious atmosphere. The next piece is the most profound and least pictorial work in the recital, *Angelus*, by Liszt. This piece features calm, peaceful and unique sounding bells appearing at the beginning and throughout the piece. The melodic lines themselves are so static that at times, they may give an impression of bell sonorities. This is followed by *Choral and Carillon Nocturne* by Enescu, another deeply profound work, and yet after Liszt's *Angelus* it might feel as a release of energy. This concluded the first half, showing three traditions but with the Central European tradition holding court.

The second half of the recital features many Russian-French musical connections and influences (Borodin and Mussorgsky influenced Debussy and Ravel, Scriabin had an impact on Messiaen, Scriabin also lived in France for a time, and knew the culture from inside), and so it seemed quite appropriate to combine three of those composers together. The second half started with Scriabin's *Sonata No. 9*, also known as the '*Black Mass*' Sonata, then it moved to Debussy's *Cloches à Travers les Feuilles*. Debussy's piece might impose a very similar feel after the end of the *Black Mass*, but then the listener senses the different intensity come in: that of a picturesque, landscape painting as opposed to a charged and dark landscape.

Cloches à Travers les Feuilles is followed by Messiaen's prelude *Cloches d'Angoisses et Larmes d'Adieu*. The prelude ends with the quietest possible three notes (*Adieu*).

Then comes the stormy opening of Scriabin's *Sonata No. 7*, which makes another strong and emotional contrast. This work served as a 'loud climax' of the program, as opposed to Liszt's *Angelus!* being a 'quiet climax' in the first half.

I made the decision to find links between repertoire, composers and inspirations in one singular approach. Sometimes strong contrasts were used, for example short pieces versus long, very bright and dynamic works combined with very quiet and peaceful works. Keys and tonal relations often played a role in programming decisions.

A format well worth exploring is that of radio programs. As a volunteer radio presenter, I know that radio programs have their specifics. First of all, the content programmed depends very much on the time of the day. In the morning programs, short and lighter pieces are preferred, therefore pieces like *Svadebka* or *Amen de la Consommation* would not be a preferable choice; whilst for example combinations such as Liszt's *Abendglocken*, *Carillon*, and *Die Glocken von Rom* followed by Mussorgsky's *Great Gate of Kiev* and Rachmaninov's *Yarmarka*, or Borodin's *In a Monastery* followed by Ravel's *Vallée des Cloches* would be ideal. To apply these ideas to a bell-inspired program, the presenter could give a brief introduction for each tradition (without going into detailed analysis as appropriate for the time constraints of each program) and play an example of each. The main purpose would be to make the listener aware of different bell traditions, and to give suggestions on what to listen for. In the afternoon or evening, programs of greater length and complexity can be suggested. Much longer explanations, more detailed analysis, more complicated music material (including modern music such as Murail or Kurtag), and larger forms are appropriate. In such programs, a presenter could take the listener on a full journey through the bells of either one country (Russia, for example); through the works of one composer (Liszt, Messiaen or Scriabin come to mind); the influences of one composer onto another/others (Liszt vs Wagner, Scriabin, Ravel etc); or even influences between different cultures and traditions (Russian and French ties come to mind).

The format of radio presentation is fundamentally different to a CD production (or electronic equivalent) and a live concert, because spoken words can explain the choice of the repertoire and the reasoning behind the order as well as relationships between chosen pieces, preparing the listener's ears and mind, instead of providing background information via CD booklets and concert program notes which listeners and audience members are not guaranteed to read. In some ways it may make things clearer for the listener and therefore more entertaining, but on the other hand may take away the joy of discovery, when the listener uncovers the reasoning for oneself. It is worth noting that for each listener, the experience may be different.

A very important factor in radio programs is timing. Whilst CDs can vary between 62-74 mins and a recital can be of any duration, radio programs have specific and very precise time constraints down to the second in some cases. Unless it is a pre-recorded program, it is likely that there will be time to fill, especially at the end (where some extra time should always be left). These couple of minutes can serve the purpose of an *encore*, and smaller pieces can be played. For example, at the end of a radio show where the complete *Visions de l'Amen* is performed, the presenter may leave 5-6 minutes of time at the end. Ravel's *La Vallée des Cloches* or Debussy's *Reflets dans l'Eau* would make a calming farewell to the show and gently hint at one of the predecessors who had an influence on Messiaen. If there are only 2-3 mins left at the end of the two-piano version of *Petrushka*, then Liszt's playful *Glockenspiel* or Rachmaninov's joyful *Etude-tableau in E-flat major* would make a bright final impression, and serving the purpose of releasing the tension of the major work. Encores of the same style and character in general do not work as well (e.g. Rachmaninov's *Etude-tableau in D major* would be an unsuccessful choice after his *Suite No. 1* as they are too similar in style to provide adequate contrast, and therefore would not stimulate the listener.

Conceptually, a radio program sits in between a CD and a live recital. A CD recording and a radio program are both addressed to each listener in their own surroundings and atmosphere. A

person might listen with full attention, but also may do other things simultaneously. Whilst the recording can be either listened to in full or in parts, a radio show is happening live, just as a solo recital, and can't be paused. In order to keep the listener's attention, both radio programs and live concerts need to have an idea or concept. A CD does not necessarily need to have a strong dramatic effect, which is absolutely essential for a live performance. In fact, some works may function better on a CD, such as long cycles of short pieces. There is an example of Tchaikovsky's Opus 72, which has 18 characteristic pieces, together lasting over an hour. In my own experience, by the end of the cycle both performer and listeners are exhausted, and the last few pieces bear joy because the end is near. Unlike Bach's *Goldberg Variations*, (which are very impressive in live performances despite their length because they are conceptually unified and make an exceptional dramatic effect), Tchaikovsky's opus may be more difficult to pull together in concert, whilst remaining ideal for a recording. At home, the listener can relax and listen to music for a long time, but a live performance is always associated with certain tension. It is very hard to make a live performance entirely from small pieces, which can work well on a CD, or a morning radio program. CD Three of this submission illustrates how a program that works as a recording wouldn't form a successful recital program because there isn't an effective build-up and climax.

A recital program must hold specific artistic tension in it. It is the place where the artist can work as an architect, experimenting and taking risks to the full extent. As the public is settled in their chairs and can't move around and release their tension for the duration of each half, interest must be kept and built up constantly. If a recital is in two halves, each needs to have its own climax, and the whole program needs an overall climax too. Larger works serve very well as ending works. Long pauses between works or conversely the lack of almost any rest in between pieces play an important part in forming the whole artistic impression, but this effect should never be executed artificially. There is also another aspect to recital programming that I would

like to discuss: the Golden Ratio principle.⁸⁴ If this principle is taken and applied to selection of repertoire, then there can be more than one climax. It is important to note that this would not be explicitly noticed by the listener, but may serve to maintain interested subconsciously⁸⁵. CD 4 of this submission, as mentioned above, is a recording of a live recital. Ending the first half of the recital is Enescu's *Carillon*, and ending the second half (and the recital) is Scriabin's *Sonata No. 7*. These two pieces appear to be the two obvious climaxes, as the last pieces of each half.

However, when we apply the principles of the Golden Ratio (multiplying the timing of each half by 0.618 and then discovering exactly what piece occurred at the timing result of the calculation), the pieces of the recital coinciding with these calculations are the ending bars of *Angelus!* in the first half, and last seconds of *Cloches d'Angoisses et Larmes d'Adieu* in the second half.

Interestingly, both are the quietest and probably the most tense points of the entire program.

This sensation of contrast between climaxes (bright and exuberant, soft and quiet) creates more complexity and interest to the listener.

To extend the project going forward, five possible approaches to concert programming are presented below. They are options that can lend themselves to adjustment, as required by circumstances. They are not intended in any sense to be 'conventional'. Instead, they are intended to be experimental, to stimulate, to provoke, to surprise, even. They are thematic, in different ways. They juxtapose works in ways intended to help the listener to hear connections, to hear similarities, to hear differences, to become aware of traditions, of influence.

⁸⁴ I hasten to add that there is need or desire at this point to apply the Golden Ratio principle and proportions in the ways explored in architectural, compositional, or analytical terms, variously, by Le Corbusier, Erno Lendvai, or Roy Howat.

⁸⁵ Sabaneyev discusses the Golden Ratio principle (and takes it to almost an extreme, yet very curious extent, when applies it to human's life) in an article 'Golden ratio in nature, in art and in human life', published in *Vospominaniya o Rossii* (Moscow: Classica-XXI, 2004), 219-223.

Program One: Bells Across Europe⁸⁶

- F. Liszt; *Sposalizio*
- C. Debussy; *Reflets dans l'eau (Images, Book 1)*
- C. Debussy; *Cloches a travers les feuilles (Images, Book 2)*
- G. Enescu; *Choral and Carillon Nocturne from "Pièces impromptues", Op. 18*
- C. Franck; *Prelude, Chorale and Fugue.*

(interval)

- A. Scriabin; *Sonata No. 9, Op. 68 'Black Mass'*
- A. Borodin; *In a Monastery*
- S. Rachmaninov; *Three Etudes-Tableaux, from Op. 33 and Op. 39*
- A. Scriabin; *Sonata No. 7, Op. 64 'White Mass'*

This program gives an overview of bell traditions in Europe, from West to East. The first half concentrates on the Central and Western traditions, and second is dedicated entirely to the Russian tradition. Although the program includes well-known works such as *Sposalizio* or *Prelude, choral and fugue*, it is not too 'conventional': relatively unknown *Choral and Carillon-Nocturne* in the first half, and two late sonatas by Scriabin (in a way overshadowing/eclipsing the more 'bell-famous' Rachmaninov) in the second half show less explored bell paths to the public.

The next programme explores the significance of Liszt and positions him in relation to German and Hungarian repertoire.

⁸⁶ to be performed on 27 June 2020 in Hanson Dyer hall, Melbourne, subject to COVID-19 advice.

Program Two: The Influence of Liszt

- F. Liszt; *Sposalizio*
- G. Enescu; *Sonata Op. 24 No. 1*
- F. Liszt; *Cloches de Genève*
- G. Enescu; *Choral and Carillon Nocturne, Op. 18*
- F. Liszt; *Angelus! Prière aux anges gardiens*
- R. Wagner; *Parsifal Bells paraphrase* (planned new version by K. Shamray)
- Encore: F. Liszt: *Ave Maria (Die Glocken von Rom)*

This is probably the most ‘daring’ out of all recitals, and it is less likely to appear in full in front of the general public. It contains works inspired by religious meaning (such as *Sposalizio* or *Angelus*) or associated with quasi-religious acts (such as *Parsifal*) or having allusions to celestial moods. It makes the connection between Liszt and Wagner (and a well-crafted programme note would explain the connection between Liszt’s *Excelsior* and the Prelude of *Parsifal*). It also makes the less obvious connection between Liszt and Enescu.

The proposed new paraphrase of *Parsifal* would incorporate the Grail Castle bells from Act 1, and the March of the Grail Knights that ensues, but in an extended form it could also begin with the Prelude (because of the close connection with Liszt’s *Excelsior*) and conclude with the return of the Grail Castle music from Act 3. Such a longer version, spanning the outer acts of the drama would be a major undertaking. It is possible, perhaps, for this project to be constructed in such a way that it can be performed in various permutations, thus allowing for some flexibility in programming.

The next programme concept focuses on the Russian Orthodox tradition.

Program Three: The Bells of Russia

- A. Scriabin; *Sonata No. 6, Op. 62*
- C. Bodman Rae; *Golden Ring*
- A. Borodin; *In a Monastery*
- S. Rachmaninov; *Two Etudes-Tableaux, from Op. 33*
- A. Scriabin; *Sonata No. 9, Op. 68 'Black Mass'*
- N. Medtner; *Fairy Tale, Op. 20 No. 2 'La Campanella'*
- N. Medtner; *Marche Funèbre, Op. 31 No. 2*
- S. Rachmaninov; *Two Etudes-Tableaux, from Op. 39*
- A. Scriabin; *Sonata No. 7, Op. 64 'White Mass'*

The title speaks for itself, however the program is clearly dominated by works of Alexander Scriabin. His three sonatas with bells form the thread of the program. A general listener's associations with Russian bells would refer straight to Mussorgsky and Rachmaninov, who are also presented here. Rachmaninov is represented in two sections by four of the Etudes-Tableaux, and Mussorgsky's Boris bells appear in a transformed and quoted form embedded within *Golden Ring* by Bodman Rae. In this proxy manner Mussorgsky would be contextualized with his fellow composer from the Mighty Five group, Borodin. Rachmaninov and Scriabin are contextualized against their slightly lesser known contemporary, Nikolai Medtner. The main purpose of this program would be to communicate the considerable significance of Scriabin's bell-inspired works and their place in the Russian *zvon* tradition.

The next program features the Western European tradition interpreted in terms of Franco-Belgian connections.

Program Four: Franco-Belgian Bells

- C. Debussy; *La Cathédrale Engloutie (Preludes, Book 1)*
- C. Debussy; *Reflets Dans l'Eau (Images, Book 1)*
- C. Franck; *Prelude, Chorale and Fugue*
- C. Debussy. *Cloches à Travers les Feuilles (Images, Book 2)*
- O. Messiaen; *Preludes*, to include *Cloches d'angoisses et larmes d'adieu*
- T. Murail; *Cloches d'Adieu, et un Sourire*
- R. Sherlaw-Johnson; *The Bells of Rennes Cathedral*
- Encore: M. Ravel; *La Vallée des Cloches*

This would be a shorter recital, without an interval, but it could also be expanded into a lecture-recital in two halves (with an interval after the Franck). It is called Franco-Belgian primarily to acknowledge the nationality of César Franck who was Belgian by birth. Having lived his adult life in Paris, he is deeply associated with France and the French traditions. This recital points out the inspirational connection from Debussy through Messiaen to Murail's bell-inspired memorial piece paying homage to Messiaen (the title of which makes clear reference to the earlier piece).

The program contains a short bell-inspired piece by Robert Sherlaw-Johnson (*The Bells of Rennes Cathedral*), on account of his close connections with Messiaen (as one of his composition pupils) and as author of one of the most significant studies on the composer.

Finally, there is a program which would require an associate artist to take part.

Program Five: The Bells of Two Pianos

- S. Rachmaninov; *Suite No. 1, Op. 5*
- M. Ravel; *Sites Auriculaires*
- C. Bodman Rae; *Fulgura Frango*
- O. Messiaen; Selection from *Visions de l'Amen*
- I. Stravinsky; *Petrushka* (new two-piano transcription by M. Zambrano)
- Encore: G. Kurtag; *Harangok (Bells), Hommage à Stravinsky (Játékok, Vol. 4)*

This program consists of two-piano bell inspired works, as well as a new transcription of *Petrushka*, intended specifically for two pianos (versus Stravinsky's own famous 4-hand transcription). In this new arrangement many more orchestral voices, omitted in the 4-hand version, will be included and special attention is paid to the scenes of Russian Easter. In the orchestral version there are no bells heard, but when different harmonic and rhythmic layers are performed on the piano, bell sounds begin to surprisingly appear. This is an example of the piano being an ideal instrument for bell imitation.

Well known works such as Rachmaninov's *Suite No. 1* and Stravinsky's *Petrushka* feature in the program, whilst relatively less known works by Ravel, Bodman Rae and Messiaen (selection from *Visions*) form the centre of it. This program is built in the shape of concentric circles, where in the outer circle are Russian works, the middle circle French works, and the centremost circle is a German tradition inspired work (*Fulgura Frango*). This piece is interchangeable for another *Glocken* influenced work by the contemporary composer Paul Fake, called *The Bells of Cologne Cathedral* (2015).

Programs can be created where bell-imitation and bell inspired repertoire would not necessarily be advertised but instead integrated into a recital, inserting a number of examples throughout and

forming a *thread* in the program. This then allows the listener to form an impression that they may or may not be able to articulate at the concert's end.

There is another format worth mentioning: the lecture-recital. This format combines the spoken aspect with the excitement that occurs at a live performance and is ideal for educational institutions of all levels, as well as all sorts of societies and thematic groups. At this stage, lecture-recitals are not common on large concert stages. One very important benefit of this format is that the public may ask questions, and there is always room for discussion. In my personal experience, Enescu's *Carillon* provokes many questions and comments from the general public since it produces such unusual aural effects. Scriabin's late sonatas can be listened to from a different perspective once their bell aspect is explained prior the performance.

Creating a recital program is not an easy task, many things have to be taken into consideration. It is the responsibility of a performer to make the listener interested and attracted to the music, especially when it comes to repertoire which is not too common on a concert stage. As mentioned in the previous chapter, shaping the program could be helped by thematic, tonal and even philosophical links; as well as contrasts and the scale of works. It is important to prepare the climax of the program. There is an interesting article by Alfred Schnittke on a recital given by Alexei Liubimov,⁸⁷ in which the author praises the artist and points out the importance of programming for deeper understanding of the music. I believe that these words can be taken as an imperative for any performer:

...But had there been no such performance, the audience could not have had so many thoughts about the music. And undoubtedly the supreme virtue in a performer is to assert the music he is playing, not himself.⁸⁸

⁸⁷ Ivashkin, A.: *Besedy s Alfredom Schnittke* (Moscow: RIK Kul'tura, 1994), 219-222.

⁸⁸ Ivashkin, 222.

Conclusion

Extending the traditions and Liszt as the central figure

This performance-based research project has essentially been about two intertwined strands of investigation. The first strand has been a personal journey of musical and artistic exploration through bell-inspired piano repertoire. The second strand has been a gradual process of combining three different lines of musical heritage, corresponding to the three regions identified here: the Eastern-European tradition of Kolokola, the Western-European tradition of Cloches; and the Central-European tradition of Glocken. The personal journey has unfolded through different stages of my life, and in each of these I have gradually become aware of a different aspect of bell-inspired repertoire. My years in Russia, first in Siberia and then in Moscow, made me aware of the Russian Orthodox traditions; my studies in Freiburg opened my ears to the German traditions; and, finally, working with Charles Bodman Rae in Adelaide made me aware of the differences and connections between the three traditions.

The more immersed in the topic I became, the more I felt that all roads lead back to one important figure: the titanic figure of Franz Liszt. The overall importance of Liszt, his close engagement with many of the most significant composers of his time (including Chopin and Wagner) and his impact on music and piano writing is well known, and has been comprehensively covered not least in the magisterial three-volume study by Alan Walker.⁸⁹ But even though the significance of Liszt is well understood there is perhaps a gap in this understanding: it needs to be emphasised, here, that his impact on the pianistic repertoire through his bell-imitation is profound. It appears that he was really the first composer to start imitating bells on the piano in sonoristic ways that went beyond the merely picturesque and literal (for

⁸⁹ Volume 1: *Liszt: the virtuoso years 1811-1847* (Ithaca NY: Cornell University Press 1987). Volume 2: *Liszt: the Weimar years 1848-1861* (Ithaca NY: Cornell University Press 1989). Volume 3: *Liszt: the final years 1861-1886* (Ithaca NY: Cornell University Press, 1997).

example, Couperin's harpsichord *Les Timbres* or Alkan's *Cloches* can't be really taken into consideration as they are just short pictorial pieces).

Towards the end of this research investigation, as I found myself reflecting more and more on the significance of Liszt, not only on the Central and Western European musical traditions, but also on the Eastern European tradition of my native Russia, I came across a highly pertinent article, written as a conference paper for the 2001 International Liszt Conference, by a friend and associate from Moscow, Konstantin Zenkin. In his article Zenkin discusses the profound significance of Liszt personally, and the Lisztian pianistic tradition generally, for the development of musical life in Russia through the teaching and other activities emanating from the Moscow Conservatoire. Although Zenkin does not write about bells, specifically, he does make some strikingly bold statements that now seem to resonate loudly in the context of this project:

...even today [2001] certain professors at the Moscow Conservatoire consider their artistic and pedagogic as a continuation of the Liszt tradition...all the great Russian composers of the last century...recognised its importance...⁹⁰

On a personal level, having studied in Moscow, Zenkin's remarks, such as the one above, helped me to understand how the different stages in my own journey of discovery could be traced back to the formative influences on me as a young pianist, being part of a tradition that I did not yet fully understand. But before exploring Zenkin's ideas further, let us return to consider the scope and sustained character of Liszt's pianistic exploration of bell sounds.

⁹⁰ Konstantin Zenkin: 'The Liszt Tradition at the Moscow Conservatoire', in *Studia Musicologica Academiae Scientiarum Hungaricae*, 2001, vol.42 (1-2), 93.

Bells keep appearing in Liszt's music through most of his life: from 1837-38 in the *Album d'un Voyageur* (publ.1842) where the first version of *Cloches de Genève* appeared (the second version appearing as No. 9 'Nocturne' in the first collection of *Années de Pèlerinage, Première année: Suisse*); *Sposalizio* written around 1839 (appearing as No. 1 in the second collection of *Années de Pèlerinage, Deuxième année: Italie*); *Funerailles* published in 1853; *Glocken von Rom* in 1862; *Weihnachtsbaum* (containing *Abendglocken* and *Carillon*) from 1873-76; and *Angélus! Prière aux anges gardiens*, and *Aux Cyprès de la Villa d'Este I*, both composed in 1877 (and both appearing in the third collection of *Années de Pèlerinage*). But why did Liszt begin this tradition in music? It is possible that the roots of this tradition can be traced to French literature and poetry of the 19th century. There is an insightful article by Aimée Boutin in which she reviews French poetry of that period and the significance of bells in it.⁹¹ After the French revolution the old world was shattered, and among the other changes, there was a strong and ever changing impact on bell-ringing. First, bells were used to make coins, then were recast as cannons, and in 1796 the religious use of church bells was forbidden. (This action was performed to reduce church's influence on people's lives). This ban lasted till 1802.⁹² But even after the ban was lifted, parishes did not return to the old regime of bell-ringing.⁹³ The sound of bells started to take on another meaning, a sign of nostalgia, of looking back to the past. French poetry began to teem with bell imagery. Lamartine, Chateaubriand and more than anyone, Hugo, referenced bells (the latter even formed a theory of poetry on the image of the bell).⁹⁴ Liszt admired French literature and Hugo in particular, had a close friendship with him, and composed several songs on Hugo's poems. It is very likely that through these influences, Liszt started including bells in

⁹¹ Aimée Boutin: "Ring out the Old, Ring in the New": The Symbolism of Bells in the Nineteenth-Century French Poetry, in *Nineteenth-Century French Studies*, Vol. 30, no.3&4, Spring-summer 2002, 267-281

⁹² Boutin, 267-268

⁹³ Alain Corbin: *Village Bells: Sound and Meaning in the 19th-Century French Countryside*. Trans. Martin Thom. New York: Columbia University Press, 1998, 34-35

⁹⁴ Boutin, 269-270.

his music. In turn, as one of the most influential artistic figures of the time, Liszt started this tradition of including bells in instrumental music which was then taken on by others.

It seems that towards the end of Liszt's life bells started to appear elsewhere: *Boris Godunov* in 1873 and *Pictures at an Exhibition (Great Gate of Kiev)* in 1874; *Parsifal* in 1882; *Prelude, Choral and Fugue* in 1884; *Petite suite (In a Monastery)* in 1885; and then continued all the way into the 20th century. There are many possible paths of influence that seem to originate with Liszt:

- Liszt - Wagner - Franck
- Liszt - Mussorgsky - Stravinsky
- Liszt - Mussorgsky - Rachmaninov
- Liszt - Mussorgsky - Scriabin - Rachmaninov
- Liszt - Mussorgsky - Debussy
- Liszt - Debussy - Ravel - Messiaen - Murail - Sherlaw-Johnson
- Liszt - Wagner - Scriabin
- Liszt - Enescu - Ligeti - Kurtag

The line Liszt - Wagner - Scriabin may seem tenuous, and needs explanation. Influence is rather indirect. All three composers expressed interest in mysticism (although all three encompassed far more than just mysticism). For all three, bells represented something symbolic rather than literal. Wagner's *Parsifal* and his quasi-religious idea for it to be called not an opera but a *Bühnenweihfestspiel* (a *Consecration of the Stage*) most certainly made an impact on Scriabin and his idea of *Mysterium*. Scriabin's 'bells hanging off the sky'⁹⁵ therefore could be (indirectly)

⁹⁵ Sabaneyev, Leonid: *Vospominaniya o Scriabine*, 157.

inspired by the bells of *Parsifal*. These mystic bell connections and influences are yet to be researched, and could potentially make an interesting study.

Perhaps the most intriguing ‘triangle of influence’ is the one involving Liszt, Mussorgsky, and Debussy, because this particular triangle seems to be at the centre of the Franco-Russian idea that draws in Stravinsky and Messiaen. It seems that there were direct lines of influence from Liszt to Mussorgsky, and from Liszt to Debussy, and from Mussorgsky to Debussy. It has become a commonplace observation that the repertoire of Diaghilev’s Ballets Russes became a kind of meeting ground for many different kinds of Franco-Russian cultural exchange. In terms of music, and in terms of composers, one immediately thinks of the connections that were established between Debussy and Stravinsky (who became friends and even played pieces at the piano together - four hands), and between Stravinsky and Ravel. But one needs to remember that, even before the Paris seasons of the Ballets Russes, Diaghilev had presented seasons of Russian operas in Paris, most notably the six performances of Mussorgsky’s *Boris Godunov* (in the Rimsky-Korsakov version) that took place as early as 1908 (the first season was in 1907), and Borodin’s *Prince Igor*. The name of Liszt is usually omitted from such discussions of Franco-Russian musical exchange, but perhaps he was a kind of ‘godfather’ who served as a common source of inspiration for both sides.

Returning now to Zenkin, he reminds us that “Before Liszt’s 1840s recitals in Russia all Russian piano music was written for domestic purposes, not for the concert platform”.⁹⁶ He goes on to relate, at some length, how Liszt directly influenced the development of the Moscow Conservatoire through his advice to the founding Director, Nikolai Rubinstein (brother of Anton) and to his nomination of musicians suitable for appointment to salaried teaching positions. Among those nominated by Liszt, and appointed to the staff on its foundation in 1866, were

⁹⁶ Zenkin, 94.

Josef Wieniawski (pianist brother of the Polish violinist, Henryk Wieniawski), the violinist Ferdinand Laub, and the cellist Bernhard Cossmann (Laub and Cossmann had been members of Liszt's orchestra in Weimar, and Laub had been the Concertmaster). Liszt continued to provide advice about teaching appointments and in 1867 he recommended to Nikolai Rubinstein the pianist Karl Klindworth who had been taking piano lessons with him in Weimar from 1852 until moving to London in 1854. Klindworth remained in Moscow as a staff member of the Conservatoire until being appointed conductor of the Berlin Philharmonic Orchestra in 1882, the year in which *Parsifal* was completed and first performed. This close connection between Liszt and Klindworth was the main reason for choosing to include for this study the Klindworth version of the short score of *Parsifal* (see the last track of CD.2).

Zenkin goes on to explain how the Liszt influence at the Moscow Conservatoire cascaded down through the generations. He identifies many Liszt pupils and 'disciples' who served on the staff at different times, including *two* of the teachers of Yelena Gnesina, Paul Scholtzer, and Ferruccio Busoni (who taught at the Moscow Conservatoire just for one year, from 1889 to 1890).⁹⁷ He also explains how certain teachers who had not been pupils of Liszt still embraced the tradition and promoted his works through their teaching. One such was Vasili Safonov, who became Director of the Moscow Conservatoire in 1889, after the tenure of Taneyev. Scriabin studied with Safonov and later taught at the Conservatoire, from 1898 to 1903. One of his pupils, Maria Nemenova, recalled how Scriabin was connected with the Liszt tradition:

On hearing that I had brought Beethoven and Liszt [Scriabin] said "today I do not want Beethoven, show me the Liszt"...[Scriabin] loved Liszt

⁹⁷ This connection with Yelena Gnesina (1874-1967) has a strong significance for me, because I studied at the music institute she founded and which was named in her honour. She had established it with her sister in 1895 as a private music school. In 1926 it became the Gnesin Institute, supported by the state.

and...[through his playing]...demonstrated wonderful moments of elevation and enchanting sonorities...I do not believe many people ever heard such Liszt.”⁹⁸

We do not know and will probably never know if those “enchanting sonorities” included bell-inspired rhythms and harmonies, but it would be surprising if such a sensitive musical personality as Scriabin could overlook such a significant element of Liszt’s pianistic sound world. Bell sonorities certainly became central to the pianistic sound world of Scriabin in his later works, and it is hoped that this investigation has helped to draw attention to both sound worlds and the connections between them.

Being or becoming aware of one’s place in a tradition, in this case a pianistic tradition, carries certain responsibilities. One feels the responsibilities to respect the tradition, to understand it, to do justice to it, and to maintain it. But above all one feels a responsibility to continue to extend it. It is hoped that this process of extension has been present to some degree in this study and that other pianists of the future who may find it of some interest will, in turn, feel part of that process. The extension can come from performing the bell-inspired works and curating them in unusual ways in stand-alone public recitals, in themed strands of related recitals (for example, in festivals), through radio broadcasts, and via published recordings. All these activities will continue well beyond the completion of this project and will form a process of public dissemination that will, without doubt, be one of the featured strands of my concertising for the rest of my career. But the tradition can also be extended by commissioning new pieces from composers, ideally from composer-pianists, who also feel some connection with one or more of the pianistic bell traditions. Most of the repertoire for this study has been drawn from the past hundred years or so, but a few of the works have been of relatively recent composition, and one (dedicated to me in 2012) has been presented here as a recording from the world première.

⁹⁸ Related by Zenkin, 106.

Clearly, there is considerable scope for further work in this area, and it is hoped that this study may help to stimulate the interest of young composers, in various countries as inheritors of different traditions (Russian, German, French, or other), to take up the challenge of adding to this repertoire. Composers may be inspired either by pieces from the existing repertoire or by hearing bell collections ringing or chiming in their natural soundscapes.

Finally, the experience of carrying out this investigation has enabled me to reach a realisation that the bell sonorities in great works, such as the Scriabin sonatas, are not merely representative, are not mere reminders of everyday aural phenomena, are not merely picturesque. They can operate at a deeper level and communicate via the unconscious mind of the listener rather than the conscious awareness of quoted sounds. When they are deeply embedded in the composer's musical sound world, as they are with Liszt, with Scriabin, with Rachmaninov, with Messiaen, with Debussy, and with others included here, they transcend the limited idea of quotation and become part of the composer's expression of emotions and psychological states. They can express joy with exuberance, as in *Entre cloches* by Ravel, as in *Easter* by Rachmaninov, and as in *L'amen de la consommation* by Messiaen. They can express a haunting sadness or melancholy, as in *Tears* by Rachmaninov, or *Le Gibet* by Ravel. They can express a sombre yet stirring mood of resolve, as in the Grail Castle march by Wagner in *Parsifal*. In the selected sonatas of Scriabin they perhaps find their most powerful expression, all the more powerful because his bells are not obvious, but are woven into the musical fabric as one of the strands of his peculiar brand of aesthetic mysticism. This journey of musical discovery began with Scriabin, and it has come full circle, back to Scriabin, but with the realisation that sonic sensitivity and pianistic prowess of Liszt lie at the centre of this pianistic tradition, like the hub of a wheel that has many spokes leading in different musical directions.

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Die Glocken und ihr Geläute. Geschichte, Technologie und Klangbild vom Mittelalter bis zur Gegenwart, ed. Kurt Kramer (Munich, Deutscher Kunstverlag, 1986). LP recording of bells in 52 German locations with extensive and detailed notes in an accompanying booklet written by Kurt Kramer, Erzbischöflicher Glockeninspektor.

Die Glocken des Freiburger Münsters, ed. Andreas Philipp (Freiburg: Phillip, 2001). Duration 76:35, contains 32 tracks that present the bells in all the various pitch sets and sub-sets (including all the permutations of anhemitonic pentatonicism). The final track is the Plenum of all 15 bells sounding in ensemble.

Die Stimme unserer Stadt: Das Frankfurter Domgeläute und das Frankfurter großes Stadtgeläute, ed. Konrad Bund LP BE33 (Frankfurt-am-Main: Amt für Wissenschaft und Kunst der Stadt Frankfurt-am-Main, 1986). LP recording of the bells of Frankfurt Cathedral and the other city churches accompanied by an extensive and very detailed booklet of notes written by Konrad Bund. Re-issued in CD format in 1999.

James R. Lawson: Bells of Riverside CD HR00887 (Portsmouth, Virginia: Hudson Recordings, 1998) contains 21 CD tracks recorded on the Rockefeller Carillon of the Riverside Church in New York City.

Frankfurt-am-Main: Glocken, Glockenspiel, Großes Stadtgeläute, ed. Konrad Bund (Haselbach, Germany: Axel-Gerhard-Kuhl Verlag, 1999) duration 77:13, contains 17 CD tracks. The first 16 identify the bells of the Cathedral/Dom and the following city churches: Alten Nikolaikirche, Dreikönigskirche, Leonhardskirche, Karmeliterklosterkirche, Paulskirche, Peterskirche, Katharinenkirche, Liebfrauenkirche, Dominikanerkirche. Track 17 has a duration of 25:25 and is entitled *Rundgang unter dem Großen Stadtgeläute* (ie a walking tour of the combined peal of all the various city bells).

Glocken der Heimat, ed. Helmuth Backhaus, LP Ariola 26-101-XAU (Munich, Ariola, n.d.). Later reissued on CD. For the track listing see below under the revised title *Glocken unserer Heimat*.

Glocken der Heimat vol.2, ed. Peter Schaller (Zürich: Schweizer Radio DRS, 2003) duration 69:45. Contains 22 CD tracks presented as 11 pairs. Each pair begins by identifying the individual bells of a particular church, followed by the Gelaute (the bells ringing as a chordal ensemble). The following 11 Swiss churches are featured in volume 2: Arlesheim, Domkirche; Basel, Kirche St. Leonhard; Beromünster, Stiftskirche; Disentis, Klosterkirche und Benediktinerabtei; Luzern, Jesuitenkirche; Munster in Kanton Wallis, Kirche Unsere liebe Frau von Munster; Muttenz, St. Arbogastkirche; Schwyz, Kirche St. Martin; Thum, Stadtkirche; Wettingen, Klosterkirche; Zug, Kirche St. Oswald.

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Mainz, München, Berlin, Nürnberg, Ettal, Königsberg (Kaliningrad, Russia), München, Zürich, Wien.

Die Kölner Domglocken CD BE46 ed. Martin Seidler (Köln: Verlag Kölner Dom, 1992) contains 46 CD tracks of the Cologne Cathedral bells both individually, in pairs, in groups, and in full ensemble. The first edition was released in 1982, the second in 1983, and the third in 1992. The CD booklet contains extensive and detailed notes about the history, installation, musical pitch, and ringing patterns of the bells written by Martin Seidler (in German and English).

The Bells of Christmas CD 12530 (Frechen, Germany: Delta Music, 1995) containing 50 short CD tracks grouped in seven chapters: The Christmas Bells of Southern Europe (Rome, Lisbon); The Christmas Bells of Central Europe (Salzburg, Vienna, Steyer, Paris); The Christmas Bells of Germany (Berlin, Bonn, Munich, Nuremberg, Erfurt, Frankfurt-an-der-Oder, Leipzig, Dresden, Magdeburg, Zwickau, Weimar, Meissen, Schwerin, Havelberg, Wittenberg, Naumburg, Greifswald, Freiburg); The Christmas Bells of England (Westminster); The Christmas Bells of Northern Europe (Brussels, Den Haag, Copenhagen, Oslo, Stockholm, Helsinki); The Christmas Bells of East [sic] Europe (Prague, Warsaw, Belgrade, Sofia, Athens, Moscow); The Christmas Bells of Bethlehem.

Ravel, Maurice, arranged by Percy Grainger: *La vallee des cloches*, arranged for Tuneful Percussion, harp and strings. Performed by the City of Birmingham Symphony Orchestra conducted by Sir Simon Rattle. EMI Classics 7243 5 5641229 (1997) track 7, duration 5:29.

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2. Bodman Rae, Charles: *Fulgura Frango*, for two pianos (1987), Australian Music Centre, Sydney, AMC26773.
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