THE DIGITAL PIANO ACCORDION: A MODERN INSTRUMENT
FOR TRADITIONAL AND CONTEMPORARY
PERFORMANCE CONTEXTS

by

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Declaration

This exegesis contains the results of research carried out at the University of Tasmania Conservatorium of Music between 2010 and 2012. It contains no material that, to my knowledge, has been accepted for a degree or diploma by the University or any other institution. I declare that this exegesis is my own work and contains no material previously published or written by another person except where clear acknowledgement or reference has been made in the text.

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My special thanks go to my wife Zoe and our son, Alexander, for supporting me throughout this study.
To my Grandfather

Donald McDonell

(1915 – 1998)
ABSTRACT

This research investigates traditional and contemporary performance contexts using a modern, digital piano accordion. It has been conducted through a series of performances that highlight idiomatic playing styles, the adaptation of playing techniques for digital instruments, those circumstances where the use of a digital instrument is most convincing, and my own skills as an accordionist. Recordings of these performances are included with the accompanying exegesis, which examines repertoire, playing styles and techniques traditionally associated with the stradella accordion. In addition, the exegesis addresses questions concerning the degree to which the digital instrument serves as a replacement for an acoustic accordion, the use of non-reeded sounds to enhance performance outcomes and opportunities, and the identification of performance contexts that validate the use of a digital instrument.

A variety of potential solo and group performance contexts that explore the use of reeded and non-reeded or electronic sounds are promoted, leading to discussions of technical and aesthetic considerations that guide and refine performance practice where a digital instrument is used. Research findings show that in many respects the digital instrument is a plausible replacement for its acoustic counterpart, and that performance applications are context-driven; their success dependent on the manner in which they confirm and enhance the identity of the piano accordion as an instrument in its own right.
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INTRODUCTION

The advent of digital technologies in the manufacture of the piano accordion has prompted players of the instrument to question the degree to which the digital instrument might serve as a replacement for an acoustic instrument, and also to consider ways in which the use of a digital instrument might enhance performance outcomes, particularly in respect of traditional accordion repertoire. This research project is performance-based, designed to investigate the playing techniques of the acoustic accordion, the application of these to a digital accordion, and to identify various performance contexts that are enhanced through the use of a digital instrument.

The performances featured in this submission of traditional repertoire by Guido Deiro, Pietro Frosini, and Charles Magnante will be used to investigate the degree to which the sounds of an acoustic instrument may be reproduced by the digital accordion, while contemporary repertoire will highlight opportunities for this instrument in popular music. In addition there will be some exploration of performance contexts where the digital accordion is used solely as a (MIDI) control interface.

During the period from 1989 until 1994 I performed extensively using what was then an innovative accordion – an acoustic instrument fitted with MIDI sensors for the control of external sound modules. This instrument allowed accordionists to access sounds from any MIDI tone generator in combination with, and independently of, the traditional accordion reeded sounds. These performance activities provided some background for this study by including experimentation with reeded and electronic sounds. In particular, the ability to
simulate an electronic bass instrument with the left hand opened up tremendous potential for live ensemble performance that was not reliant on a bass player.

There were limitations to acoustic accordions fitted with MIDI conversion kits; treble reed sounds were still amplified using internal microphones, and bellows pressure and manipulation affected the reed sounds only – left hand bass sounds were initially dependant on the volume settings of the amplification device, varied by the use of an expression pedal. For an accordionist, accustomed to the expressive capability of the bellows, this posed some difficulties, since a foot-operated expression pedal did not produce the dynamic nuances of the bellows. Whilst the original MIDI converted accordions opened up new possibilities for performance, they were nevertheless subject to similar limitations of design as acoustic instruments.

In order to understand the rationale for the development of the digital accordion, some preliminary discussion of accordion design is necessary. Traditionally, specific instruments were built for particular repertoire, distinguished in the main by reed tunings and the configuration of the bass buttons. Tuning relates primarily to the treble or right hand part of the instrument. “French tuned” or musette\(^1\) accordions prevail in continental music while “straight-tuned” instruments are most often used in concert performance. To further complicate the issue of design, there are particular flavours of musette tuning that are favoured for Scottish, French and Cajun music for example. Similarly, some “straight-tuned” instruments better suit the needs of jazz players who rely heavily on the warmth and bite of the bassoon reed block. Accordions such as the Excelsior “Symphony Grand”, Scandelli

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\(^1\) *Musette* tuning refers to the middle reeds of the treble register, and the degree to which these are detuned for French music in particular.
“Super VI” and Sonola “SS-20” were popular choices of performing artists in the United States during the middle of the twentieth century.

The second distinguishing feature of acoustic instruments is the design of the bass register, specifically, the physical arrangement of pitches. In this regard there are two main configurations. The *stradella* accordion bass register has two rows of single notes ranging over a single octave and placed in 5ths, and corresponding major, minor, seventh and diminished chord buttons in fixed voicings. Figure 1 shows the central section of the stradella bass:

### Figure 1: Stradella bass configuration

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<td>Eb dim</td>
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The other type of instrument is the *free-bass* or *classical* accordion. In this instrument, all bass buttons produce single pitches ranging over multiple octaves. Chords must be specifically fingered, and the playing technique is therefore quite different. Manufacturers such as the Titano company build *convertor* accordions where the player can select between *stradella* and *free-bass* systems on a single instrument.

Modern digital accordions are reedless; all sounds are produced electronically. They may be programmed with complete flexibility in terms of reed sounds, tuning, and bass
configurations. Moreover, a player can easily change configurations according to repertoire and performance context. Since these are MIDI instruments, almost any sound (in addition to accordion reeds) is available, using internal sounds or external (MIDI) sound sources.

The Roland V-Accordion, selected for use in this research, is designed to replicate an acoustic accordion. Monitored through headphones, the internal reeded sounds closely replicate the sounds of an acoustic instrument. My initial impressions were that, as an ensemble instrument or in a commercial recording context, the V-Accordion would shine; as a solo concert instrument there would be some limitations in creating an authentic acoustic sound and performance experience. These will be discussed at some length in Chapter 1, and examined through the performance of a selection of traditional accordion repertoire using only the reeded sounds of the digital instrument.

With any new instrument, there is an imperative from the player’s perspective to potentially reconceptualise their approach to the instrument. While there will undoubtedly be difficulties in fully realising the possibilities of an unfamiliar instrument, and understanding its limitations, I suggest that by engaging in appropriate reflective processes the player may overcome many of these. These processes may involve experimenting with playing technique, careful identification of viable performance contexts, the selection of appropriate repertoire, and the development of a thorough understanding of ways that the instrument may be manipulated, and the manner in which it produces sound. It is assumed that the player has a secure playing technique, and a high degree of experience using traditional acoustic instruments so that valid and informed judgements are made, particularly in respect of

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2 The Roland V-Accordion series are the first instruments of their kind to provide digital modeling technology in a traditional accordion design, incorporating the performance functions and sounds of the acoustic instruments on which they are modeled.
understanding how a digital instrument and non-reeded electronic sounds might be used to enhance the performance of traditional repertoire.

Fundamental to a digital instrument is that sounds are generated electronically, and therefore must be experienced by both performer and audience using some means of amplification and speaker system. In the case of a digital instrument that itself does not produce sound, there is a need to consider the sound that is heard by the player. While using a public address system for amplification is arguably the only way to serve an audience, this system does not provide the instrument with a localised voice. By that I mean that from the player’s perspective the sound is remote and there is little appropriate aural feedback when playing. These are real concerns that affect playability, and thus the viability of the instrument itself.

The V-Accordion is primarily a digital controller, not dissimilar to a piano-style keyboard, but unique in the sense that nuance and expression in dynamics is controlled by the accordion bellows. With a frequency range that encompasses low bass tones and treble registers simultaneously, full-range amplification is mandated. The extended dynamic range of the instrument (made possible by bellows control and a defining characteristic of acoustic accordions) must also be reproduced. In the absence of commercially available accordion amplifiers, either keyboard amplifiers or powered public address monitors potentially solve the issue of localising the sound of the instrument. In keeping with the acoustic instrument on which it is modelled, the sound of the V-Accordion must be experienced by the player, other musicians and potentially the audience as though it were an acoustic instrument, at least when the aim is to replicate the sounds of an acoustic accordion.
It is the aim of this project to determine those performance contexts that best support the use of a digital accordion, and to investigate characteristics that distinguish the digital instrument and thus lead to new performance applications.

This exegesis will have CD recordings of material selected to interrogate these questions bound unto it. This includes recordings of recitals, musical examples, and other supporting material. A concise guide to writing and arranging for the accordion, together with other reference material, is provided in the appendices.
Background and Review of the Literature

There is little text-based reference material existing that specifically discusses playing techniques and ways of writing effectively for the digital accordion. While method books, such as *Zordan’s Piano Accordion Junior Method* published as early as 1932 provide, with varying detail, sequenced instruction and some detail in respect of playing techniques for the acoustic accordion, it is the repertoire from 1910 until approximately 1950 that clearly documents the development of accordion music in the United States, revealing how best to exploit the potential of the instrument and what is technically possible in performance. Similarly, archival video and audio recordings by accordionists Guido Deiro, Pietro Frosini, Charles Magnante, Anthony Galla-Rini and Willard (Bill) Palmer demonstrate playing techniques. This review will examine not only textual sources, but also canvass representative instructional materials together with repertoire and recordings from the period in order to provide the reader with an understanding of the playing techniques and repertoire of the *stradella* piano accordion in the context of the first half of the twentieth century in the United States. Some discussion of electronic instruments and more recent performance contexts will follow, thus clearly locating this project within the existing body of knowledge in the field, and providing the foundation on which this study is built.

The period from 1900 until approximately 1950 in America has become known as the Golden Era or Age of the Accordion. Jacobson, in the article *Searching for Rockordion*, comments that “it was truly an era worthy not only of the name Golden Age of the Accordion, but

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4 Archival video and audio recordings by accordionists Guido Deiro, Pietro Frosini, Charles Magnante, Anthony Galla-Rini and Willard (Bill) Palmer that demonstrate playing technique are listed in the section “Audio and Visual Resources”.
Golden Age of Music making among middle-class American families.\(^6\) During this time the design of the *stradella* piano accordion reached maturity and the accordion rose to prominence as one of the foremost popular concert instruments of the day. It has been suggested that one might date the birth of the “accordion movement” to 1938,

… the year that witnessed three important events in the life of the accordion: the completed transition to the manufacture of the accordion in plastics; the founding of the American Accordionists Association (AAA); and the introduction of Pietro Deiro’s “advice column” for accordionists in *The Etude*, a magazine devoted mainly to teachers of piano and stringed instruments.\(^7\)

Certainly the popularity of the instrument at this time is difficult to dispute, and it was during this period that, through the efforts of professional artists, the repertoire, playing techniques, and core repertoire were firmly established. In the foreword to *The Golden Age of the Accordion* Willard (Bill) Palmer writes of the pioneers who explored the possibilities of the new instrument and set early standards and traditions in performance.\(^8\) One such pioneer was Count Guido Pietro Deiro (1886-1950), a solo vaudeville artist, who began his career in June, 1910.

Deiro became a celebrity on the vaudeville circuit, making up to $600 per week; a phenomenal income in those days. He was “America’s Premiere Accordionist”, for none could surpass his virtuosity, musicianship, stage presence and sex appeal … for two decades he was the greatest and most popular accordionist on stage, on record, on radio, even in the movies.\(^9\)

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\(^7\) Jacobson: 221


Deiro teamed with publisher Biaggio Quattrociocche in 1916, providing the first work specifically published for accordion, *Polka Variata*.\(^{10}\) This work exemplifies the folk style that is the foundation of repertoire for the instrument, with a tuneful and decorative melody accompanied by a ragtime-derived stride bass that is well suited to the stradella instrument. *Sharpshooter’s March*, probably recorded by Deiro in January 1911, is one of the most famous marches for accordion,\(^{11}\) and provides an example of the first extended bass solo. Authorship of this work is uncertain; the 1911 Columbia recording\(^{12}\) lists Viennese composer Richard Eilenberg (1848-1925), however a recording made by Deiro for the Edison Company later that year (Edison 773) titled *Italian Army March* does not credit a composer on the cylinder case.\(^{13}\) Whilst polkas and march styles are readily identified as “accordionistic”, Deiro, in the waltz *My Florence*, demonstrates the kind of grand operatic opening that has come to form the introduction of much concert repertoire for the instrument (CD-1: Tr. 4).\(^{14}\)

Pietro Frosini (1885-1951) has been credited as having perfected the technique of the bellows shake.\(^{15}\) His own recording of the Rhapsody No 3 in A minor made in 1941 demonstrates this technique. Despite playing what was only in appearance a traditional piano accordion (and in fact a three-tier chromatic keyboard),\(^{16}\) stylistically the performance is consistent with artists using the piano accordion.\(^{17}\)

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\(^{10}\) Guido Deiro, *Polka Variata*, recorded for Columbia in 1911, and recorded by the author on the first compact disc which accompanies this exegesis.
\(^{12}\) Released by Columbia A-984
\(^{13}\) Doktorski, 8.
\(^{16}\) Frosini’s instrument was designed with dummy black keys and three rows of white keys in the treble in order to imitate the appearance of a piano accordion.
Figure 2 shows Frosini’s instrument; the white keys form a three-tiered chromatic keyboard, the black keys are not used and simply give the instrument the appearance of a piano accordion.

**Figure 2:** Pietro Frosini and his chromatic accordion

Flynn et al, *The Golden Age of the Accordion*, 81

This image has been removed for copyright or proprietary reasons

Frosini believed in balancing the melodic and bass parts, in carefully shaped dynamics, and in clean well-articulated passage-playing. He contributed a number of original contributions to the repertoire; *Highlights for the Accordion* was published in 1953, and many of these works are still performed by accordionists today. Frosini was inspired by the bellows “shake” of accordionist Salvatore Porto, and later developed and popularised this technique. Frosini’s compositional style extends the work of Deiro through the use of a more expressive harmonic vocabulary and typically highly decorative right hand parts.

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Amongst the accordion fraternity, Charles Magnante (1905-1986) is arguably the best-known performer, writer and arranger for the stradella instrument. In common with Frosini, he described accordion technique as “being able to play rapidly, without errors, and at the same time to play clean.”\(^{24}\) He is also possibly the single player to acknowledge the importance of bellows technique, beyond the bellows shake of Frosini:

> Just what “proper” manipulation means cannot be explained in a few words. It is a subject for long, careful study. But I do want to call attention to its importance – for it plays a big part in effective syncopation.\(^{25}\)

Unfortunately it seems that there are no documented “long, careful” studies of bellows technique by accordionists of the era, despite the existence of tutors for developing the specific technique of bellows shake.\(^{26}\) As far as syncopation using the bellows is concerned, in a broader sense Magnante is referring to phrasing. Just as a wind player using the diaphragm will restrict or stop the flow of air, accordion bellows may be manipulated similarly. In the final book of the accordion course by Palmer-Hughes, the technique of completely stopping the bellows is explained as being necessary in order to “terminate the sound of the treble and bass exactly together.”\(^{27}\) Magnante’s own accordion method devotes less than half a page to a discussion of the bellows, despite asserting, “the bellows are the heart of the accordion and require the constant attention of the beginner.”\(^{28}\) This lack of detail may be explained by Magnante’s comments that “the manipulation of the bellows should

\(^{25}\) Magnante, 8.
become an involuntary habit”, and “after bellows control is fairly well established, the student will realise that no fixed rule can be applied to its manipulation.”

Magnante adds weight to the notion that the right hand technique used by accordionists is developed much in the same way as pianists develop facility and finger independence, commenting that “about an hour and a half would (then) be devoted to scales, arpeggios, chords, broken chords, thirds, sixths, etc.” Magnante’s arrangement of Beer Barrel Polka is a prime example of the kinds of technical demands required of accordionists. It includes passages harmonised in thirds, decorative passage playing, arpeggiation, the bass solo pioneered by Deiro, and Frosini’s bellows shake.

Charles Magnante wrote, “the next step in daily practice was the Hanon five-finger exercises for the right hand (later for both hands).” The well-known studies for piano by L.C. Hanon have been adapted in a number of formats for accordion. In 1933 Pagani published The Virtuoso Accordionist, the left hand part being notated in treble clef, and consisting of single note scale passages to accompany the right hand. In a later Imperial publication, Sixty Exercises Arranged for the Piano Accordion, the left hand is written in bass clef, and has been modified to include chords as well as single notes.
A review of method books by Zordan, Baker, Pagani, Magnante, Cambieri et al, Pietro Deiro and Palmer-Hughes reveals a common format. Each of these methods commences with an explanation of the instrument, how to hold it properly and introductory music reading and theoretical rudiments, followed by basic studies in the right and left hands respectively. The hands are then combined, and short pieces and studies, which progress in difficulty at various rates, are introduced. In all cases there is limited explanation about actual playing technique beyond the initial introductory remarks. Period recordings by prominent artists best reveal the manner in which to play the instrument. Deiro’s 1920 Columbia recording of *Kismet Foxtrot* displays the clarity of articulation and phrasing that was to become the hallmark of expert playing. This style of crisp finger staccato is well demonstrated in an even earlier 1913 recording by Pietro Frosini of the waltz *Amoureuse*. An arrangement of *Andalucia* by Ernesto Lecuona performed by the Charles Magnante Trio in a short 1946 studio film directed and produced by William Forest Crouch demonstrates the degree of detail in performance for which accordionists strive.

It is clear that the body of traditional *stradella* repertoire, together with an established playing technique for acoustic instruments, emerged from the United States during the first part of the twentieth century. However, with the advent of digital, reedless instruments, there are posed

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35 Zordan’s *Piano Accordion (Junior Method)* (Chicago: Chart Music, 1937).
new questions about the ways in which these ‘controllers’, in the form of piano accordions, may be used. Waksman notes that “electric and acoustic instruments engender distinct kinds of relationships between the techniques of the performer and the sounds that result from the application of those techniques; and those sounds, in turn, can be put to very different musical uses.”

Smith observes, “It is possible to devise real-time computer algorithms which produce sounds so realistic that most people cannot distinguish the synthesized sound from real recordings, under normal listening conditions.” Smith further recognizes “a potentially large variety of new realisations in terms of sensitive physical controllers coupled to sound rendering engines”, and that “there is no limit to the range of new sounds controllable by the player.”

The digital accordion is such “a sensitive physical controller”, and through the language of MIDI, affords the player unprecedented sonic performance opportunities, a feature that is useful at a time where “contemporary music-making demands that any musical sound be as available as any other.”

The expressive potential of the accordion may now be broadly applied, and is not limited to the idiomatic reeds of the acoustic instrument. Thus, in respect of playing technique, the player might now equally value “the creative use of sound over the sort of physical dexterity ordinarily associated with musical technique.”

Whilst it is the study of style, sound and technique from the “Golden Age” of the accordion that is the focus of this research project, an understanding of ways in

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47 Smith, 283.
48 MIDI stands for Musical Instrument Digital Interface. It is a language that allows musical devices to communicate and exchange data.
50 Waksman, 255.

which the digital accordion may serve as a MIDI controller is fundamental to enhancing the performance of traditional repertoire through the use of an expanded sonic palette.

In an article for Keyboard Magazine by Jerry Gerber, film composer Jonathan Price states “I’m a big advocate of capturing a real-time performance with MIDI … I try to use controllers that are as expressive as possible.” Price’s belief that “if you capture real-time performances, the result will sound musical” prompts one to seek out the most expressive control devices available. In the text, *Synthesizer Performance*, author Jeff Pressing discusses “the synthetic implementation of expressivity.” With respect to controllers, Pressing suggests that

The most versatile choices are those that will allow both slow and rapid dynamic change, enabling not only crescendo and decrescendo but accents and the execution of figures like *fp*. The best controller for this purpose, in many ways, is the breath controller.

The digital accordion is clearly such a controller, combining a familiar piano-style keyboard with an expressive wind or breath controller in the form of bellows. That is not to suggest that the controller or playing interface is the only critical aspect of performance using synthesized sounds. Mulder notes that in many cases there is a degree of dissatisfaction amongst musicians when comparing the expressive properties of digital instruments to the acoustic originals, commenting that “the sound synthesis system that is driven by the

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53 Gerber, 30.
55 Pressing, 191.
gestures, usually via MIDI, is not adequate to satisfy the auditive needs of the performer."\textsuperscript{56}

Fortunately advances in sampled, software instruments now provide players with near limitless sources of quality sonic material. Gerber agrees, acknowledging “technological advances foster new sample libraries that offer ever-increasing control of expression and realism.”\textsuperscript{57}

The maturity and continued rapid development of MIDI controllers and sonic material makes a compelling argument in favour of performance using instruments that retain the playing characteristics of their acoustic counterparts, convincingly reproduce the sounds of the originals, and consequently open the doors to new performance genres through the language of MIDI. Therefore, it is important to raise awareness of the accordion’s potential as an instrument for contemporary performance, to demonstrate the use of the instrument in new ways, and to provide a resource that allows musicians to write for and understand the capabilities of the instrument. In essence, these are the issues that this exegesis seeks to address.

CHAPTER 1

The Application of Acoustic Playing Techniques to Digital Instruments

When playing a ‘new’ instrument for the first time, the initial impressions formed by the player will concern how the instrument feels and responds, and importantly, how the instrument sounds in a traditional performance context. These impressions begin to take shape as soon as the instrument is played, and tend to change as familiarity increases. My personal experience of this process suggests that subtle changes of technique are required in order to adapt to the particular playing characteristics of the digital instrument, and are gradually adapted further in order to realise one’s musical intentions. Where a modified technique does not produce the desired result, or perhaps a limitation of the instrument itself is identified, there may be an interpretative or musical change made by way of alternative. This chapter examines these issues, and considers the degree to which a digital instrument might serve effectively as a replacement for its acoustic counterpart.

There are three fundamental physical aspects to playing the piano accordion: right hand technique, left hand technique, and bellows technique. In particular, it is the coordination and proper manipulation of the bellows that lends refinement and nuance to performance, and which distinguishes experienced players such as Charles Magnante, who claims that bellows control is “the key element in obtaining the correct sound out of the accordion.”58 In the early twentieth century Magnante, together with colleagues Guido Deiro and Pietro Frosini, became prominent performers, contributing a body of original repertoire for the instrument. Most importantly, the creative output of these musicians, amongst others, established the

foundations of stradella accordion technique. John Barsuglia has observed that Magnante was “a leader whom everyone emulated in technique and style.” 59 I have therefore selected a range of material by Magnante, Deiro, and Frosini for performance using a reedless accordion. This music clearly illustrates playing techniques that emerged from America during the first half of the twentieth century, and therefore is a useful tool in assessing the capabilities of a digital instrument with traditional repertory.

**Right Hand Technique**

As noted in the review of literature, there is very little detailed documented commentary concerning the right hand technique used by accordionists. I suggest that since the instrument uses a piano style keyboard for the treble register, a reasonable assumption has been that the finger technique is much the same as for a piano. 60 This general assumption is supported in the literature, with many of the tutor books of the day little different to piano methods, and popular studies such as Hanon 61 adapted for the accordion. 62 Both Magnante and Frosini promote the importance of finger dexterity, agility and clarity in performance, Magnante acknowledging his personal use of the Hanon exercises to build finger independence and strength. 63 There is, however, more to accordion right hand technique than simply transferring generic keyboard skills. To achieve clarity, particularly in passage playing, finger articulation together with well-controlled bellows pressure is of fundamental importance. Acoustic techniques were developed for certain required musical outcomes, and an initial

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60 It must be noted that the acoustic accordion keyboard, unlike the piano, does not respond to variations in finger velocity.
61 *The Virtuoso Pianist* by Charles-Louis Hanon is a collection of sixty exercises for the development of finger technique. It was first published in Boulogne in 1873.
The descending triplet passage in the right hand is marked with a slur, indicating a legato touch. I suggest that this does not signify a pianistic overlapping legato, but rather suggests a form of legato touch where the notes are actually slightly separated for the sake of clarity. Some accordionists refer to this as “fingertip” playing, since by endeavouring to play using the tips of the fingers an overlapping legato is less likely to result. The following excerpt from Magnante’s arrangement of *Tea for Two* provides a further example of this discrepancy between notation and articulation:

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65 An “overlapping legato” refers to touch alone, whereby each note is so well connected to the next that they virtually overlap. It is not a legato that is enhanced by using the sostenuto pedal.

66 The legato touch employed in pipe organ playing may also be slightly detached for clarity. In the case of this instrument the acoustics of the room in which it is located together with the response of the pipes play a part in determining finger articulation, whereas the detached style suggested for accordionists relates only to the sounding of the reeds.
Here the quintuplets that decorate the melody are marked slurred, however would typically be played lightly and slightly detached so that each note sounds cleanly and the melody is well projected. Later in the same score Magnante clearly seeks detached articulation, actually marking this semiquaver passage staccato (Figure 5). This excerpt is reproduced using the same “staccato” notation as the original.

While it may seem that this discussion about articulation is more about the musical interpretation of a score, the well-documented remarks by Magnante and his colleagues concerning clear and clean playing give weight to the notion that accordionists must articulate in a manner which takes into account the reeded nature of the acoustic instrument. I propose therefore, that where articulation or phrasing is not indicated in a score, the player

\[\text{Figure 4: Fingertip Style - Youmans/Arr. Magnante, Tea for Two,}^{67}\text{ bars 25-28 (CD-4: Tr. 2)}\]

\[\text{Figure 5: Detached Passage - Youmans/Arr. Magnante, Tea for Two, bars 55-58 (CD-4: Tr. 3)}\]


\[^{68}\text{A true staccato is not possible at the indicated tempo, and indeed if attempted would result in the notes being so short that the reeds (of an acoustic accordion) would have insufficient air and time to sound. I suggest that what is intended is not so much a pure staccato, but a detached legato or “fingertip” style.}\]
should refrain from adopting a legato touch by default, and instead be guided by listening carefully to ensure that all notes sound with clarity.

In terms of true legato playing, the pianistic technique of overlapping legato is of course applicable to accordion keyboard technique, although most effectively at slower tempi where maintaining clarity is less problematic.

Figure 6: Legato Phrasing - Pietro Frosini, Florette, bars 1-15 (CD-4: Tr. 4)

In this example the player luxuriates in the production of a rich legato, however in the second section of the work, marked *piu mosso* (more motion), the touch becomes slightly more detached as the tempo increases. This change in articulation is made despite the marked legato phrasing of the passage (Figure 7).

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69 Frosini, “Florette,” Highlights For the Accordion, bars 1-15.
When playing legato the accordionist should consider the degree of connectivity according to tempo, ever mindful that as tempo increases a degree of detachment is required in order to maintain clarity. In the case of a reedless, digital accordion, the application of a variable legato technique may not be required for reasons concerning the manner in which reeds respond to air pressure, although stylistically this kind of articulation is important when seeking to reproduce an authentic performance of repertoire for the acoustic instrument. It was my experience in recording CD-1 that any unevenness in finger articulation was more obvious given the less forgiving nature of the electronic accordion; it is, in this respect, more responsive that its acoustic counterpart.

In common with piano technique, flexibility in the right wrist is essential for the performance of the bravura style music common to stradella accordion literature. The repeated octaves of La Mariposita (Figure 8) provide an example of articulation using the wrist rather than the fingers:

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Similarly, the repeated chords in the first four bars of the coda may offer challenges in terms of avoiding tension and articulating cleanly.

When playing this passage, I found that the reeded sounds of the digital instrument were less responsive than an acoustic accordion in terms of the rapid repetition of full chords. The electronic sounds did not speak as quickly as the acoustic instrument, resulting in some blurring of the sound. This possibly results from an issue concerning the transmission of MIDI data, since single notes can be rapidly executed with clarity.

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71 Frosini, “La Mariposa,” *Highlights for the Accordion*, bars 170-175.
73 This characteristic may be unique to the Roland range of digital accordions, and not necessarily apply to all reedless instruments.
74 Interestingly, where non-reeded sounds are used, there is no evidence of latency in sound production, suggesting that this characteristic is related to the programming of reeded sounds. Similarly, full-chord glissandi using reeded sounds result in a blurred cluster of pitches, yet when using organ sounds for example, glissandi are executed cleanly. This major technical issue is worthy of further investigation by the manufacturers.
Arpeggiated passages require a rotary rather than vertical wrist movement to be used in combination with finger articulation. The upper and lower notes of the passage locate hand position and a movement similar to opening a door handle is made.

**Figure 10:** Rotary Movement – Di Capua/Gaviani, *Sunny Skies*,\(^{75}\) bars 136-138 (CD-4: Tr. 8)

In this example the player is able to execute the notes by both rotating the wrist and finger articulation, the combination of wrist and fingers promoting flexibility and clarity respectively.

In a tribute to Charles Magnante, accordionist Joan Cochran Sommers comments that in performance “that perfect right hand was always apparent.”\(^{76}\) The preceding discussion sheds some light on what is meant by “that perfect right hand”, and draws attention to points of difference between a pianistic keyboard technique and the right hand technique required for the piano accordion. Furthermore, I suggest that rather than any significant modification when playing digital instruments, the right hand technique is simply refined by taking into account the electronic nature of the keyboard, and the absence of physical reeds. Keyboard response, particularly where the rapid repetition of full chords is desired, must also be considered when transferring repertoire to the digital instrument.

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Left Hand Technique

Accordionists employ a specific and unique technique for playing the buttons or bass section of the instrument. Left hand technique involves not only playing the bass part, but at the same time independently manipulating the bellows. Bellows are moved *out* by the back of the hand (pressing against the bass strap), and *in* by the palm of the hand pressing against the end of the instrument. It is important that the palm only is used to move the bellows, thereby allowing the fingers to play the bass buttons without restriction or tension.

Usually only two buttons are depressed at any one time when performing using a stradella bass system, although sometimes two chordal buttons may be combined. Fingers are rounded; the thumb is seldom used. Desirable qualities include crisp, clean articulation, and the use of both the 4th and 5th fingers to achieve stretches. The player must learn where individual buttons are by feel and a sense of the geography of the instrument since the bass cannot be seen while playing. Familiarity with the location of the basses is most easily acquired where writing takes into account the arrangement of the bass buttons, and the music of accordionist Guido Deiro exemplifies this approach.

Deiro’s early music was clearly influenced by Ragtime, the popular music of the day. In *Deiro Rag* (1913) the alternating bass pattern common to this style is readily adapted to the left hand bass system of the stradella accordion, where bass notes and chords are arranged according to the circle of fifths or fourths (refer to Appendix 2, Figure 33). An excerpt from the score of *Deiro Rag* is provided in Figure 11:

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77 By combining a major chord with the minor chord a minor 3rd lower, a 6th chord is created. For example, combining the chords D Major and B minor results in a D\(^7\) harmony.
This kind of bass writing is arguably the most idiomatic style for the stradella accordion. In order to balance the bass and chords, the bass may be projected by dragging or slightly lengthening bass notes (but not slurring the bass and chords). This allows the lower reeds more time to sound and also gives the sense that the single bass notes are “stronger” than the chords. Accenting with the bellows alone may produce unwanted accents in the treble part.

An obvious example of projection by lengthening bass notes is found in Deiro’s My Florence Waltz, where single bass notes are sustained for an entire bar while chords are played in a staccato waltz pattern.

Deiro further developed left hand bass technique by writing an extended melodic bass solo in Sharpshooter’s March, which he recorded in 1911 on Columbia A-984 (Figure 13).
Although the bass solo is accented in the score, the bass melody cannot actually be played in this way without accenting corresponding beats in the treble part. The accents are shown to inform character, and indicate that the melody should project, but are not actually played. The bass solo, by virtue of the marked legato phrasing, will naturally be heard as the strongest part in any case, provided that the staccato articulation in the treble is observed.

In La Mariposita, composer Pietro Frosini marks almost all of the basses staccato, as if to impress upon the player the importance of clarity in the left hand.

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82 Frosini, “La Mariposita,” Highlights for the Accordion, bars 7-12.
Whilst marking all basses staccato is not typical of accordion notation, I suggest that unless otherwise marked, basses should be articulated in a detached manner. The following score by Charles Magnante illustrates this approach (Figure 15). Despite an absence of staccato markings, clearly the composer intends basses to be played detached, except where marked as being slurred in the bass solo.

Figure 15: Slurred Bass - Charles Magnante, Accordiana,\(^{83}\) bars 23-27 (CD-4: Tr. 13)

The remarks made to this point in respect of the playing technique for the left hand do not suggest that any real changes are required when using a digital instrument, however since the role of the left hand is two-fold, the manipulation of the bellows must also be considered as part of this discussion.

Bellows Technique

Unlike other players of other keyboard instruments, the accordionist causes the instrument to sound not only by pressing keys, but also simultaneously through gesture in the form of bellows manipulation. Keyboard technique, be it right or left hand, does not operate in isolation from bellows movements, and in fact without an associated bellows movement the instrument does not produce sound. Jazz accordionist Art Van Damme writes,

\(^{83}\) Charles Magnante, Accordiana (New York: Wm Smith Music Co., 1925), bars 23-27.
The fact that we have two separate keyboards, as such, controlled by one force, is a problem. I refer to the bellows, which is the source for both sides, and should be used in the same vein as a trumpet player or sax man as a breathing device. A pianist is free to use either hand as he pleases, but not the accordionist.\textsuperscript{84}

On acoustic instruments the flow of air from the bellows causes reeds to vibrate, and sound to be produced by the accordion. Attention must be paid to the degree of air pressure required in order that the reeds sound with a full tone, thereby determining the minimum dynamic level possible for a specific instrument. Similarly, the player must also determine the upper limits of bellows pressure such that the reeds do not “choke”, and fail to sound properly. Whilst retaining bellows for expression and articulation, the digital accordion uses a highly sensitive bellows pressure sensor to control volume.\textsuperscript{85} Since these instruments rely on external amplification, dynamic levels and dynamic range are affected by the type and power of amplification and speaker systems used. In transitioning from an acoustic to digital instrument, of particular interest from a player’s perspective is the dynamic sensitivity, range and response that is possible through bellows movement, and the way in which “virtual reeds” decay as bellows pressure is reduced. It is likely that the expressive capabilities of the bellows will differ from an acoustic instrument, given that the bellows are controlling an air pressure sensor and not the flow of air through physical blocks of reeds.


\textsuperscript{85} On the Roland V-Accordion at least, this sensor seems far more sensitive than the bellows and reeds of an acoustic accordion.
Changes and direction

Bellows technique is seldom fully discussed in literature for the accordion. Players generally accept that changes should be, as much as is possible, inaudible, and that bellows movement should be smooth and unrestricted. Beginner accordionists typically plan bellows movements – for example: 2 bars out followed by 2 bars in. As experience grows bellows movement becomes free and intuitive, controlling volume, expression, and articulation. Movement is also affected by the mechanics of specific instruments, and in experienced players becomes an automatic aspect of the playing technique.

Bellows are not changed during a sustained note or chord, since no matter how carefully this is done a break in the sound will result. Inaudible changes are possible where notes change, and can be executed without a gap in the sound. For musical styles that feature sustained sounds or long phrases, bellows may sometimes be extended beyond the “normal” playing range. A “normal” range allows for comfortable and expressive playing without excessive changes and arm extension, although from time to time this “normal” range may change for musical reasons. Control is greater when bellows are minimally extended: the greater the extension, the lesser the control. This is why when executing a bellows shake (which requires a great deal of control) the bellows are kept almost closed.

Dynamics

Crescendi and diminuendi require control and a steady increase/decrease in bellows pressure for well-graded changes. Movement must also be smooth so that unwanted surges and

86 Restrictions may result through contact with the left leg. Bellows movement may also be affected by moving other parts of the body, such as tapping the right foot or moving the left leg, on which the bellows rest when seated.
accents do not occur. A useful parallel in this instance is with the expressive techniques employed by players of wind instruments, and breath control.

**Accents**

Accents are achieved through bellows movement alone, since neither the piano keys nor buttons respond to variations in finger velocity. In certain dance styles the “feel” relies on specific accents in the bass pattern. A challenge for the player is to execute these without upsetting the phrase shape of the treble part (Figure 16). Note that in this example the composers have omitted accent markings in the bass when there is a sustained melody; an opportunity for the player to create a similar effect by slightly lengthening rather than accenting.

**Figure 16:** Accents with Bellows - Palmer-Hughes, *P. H. Rhumba*, bars 9-16 (CD-4: Tr. 14)

(Molto Moderato)

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In the following popular tango, a strict reading of the score would produce unmusical accents in the treble part.

Figure 17: Tango (as written) - Rodriguez, *La Cumparsita*, bars 17-24 (CD-4: Tr. 15)

To avoid these unwanted accents the player judiciously shortens certain notes.

Figure 18: Tango (as played) - Rodriguez, *La Cumparsita*, bars 17-24 (CD-4: Tr. 16)

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In cases where accents are common to both bass and treble parts, no rhythmic modifications are required.

**Figure 19:** Common Accents - Guido Deiro, *Variety Polka*,\(^8^9\) bars 1-4 (CD-4: Tr. 17)

Such writing may also allow the player to employ the technique of “stopping” the bellows.

**Stopping the bellows**

Just as a wind player, using the diaphragm, “stops” the flow of air through the instrument, the accordionist “stops” the bellows to achieve a similar effect. This technique allows the sound of the reeds to decay naturally rather than abruptly stopping when keys are released. The most common application occurs in cadential chordal passages.

**Figure 20:** Stopping Bellows - Pietro Frosini, *Florette*,\(^9^0\) coda: bars 6-8 (CD-4: Tr. 18)

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\(^{9^0}\) Frosini, “Florette,” *Highlights For the Accordion*, coda: bars 6-8.
Typically the player would stop the bellows after sounding each of the final three chords. This technique requires care when using a digital instrument due to the increased sensitivity of the bellows, particularly as a sound fully decays. By attempting to stop the bellows, the player may inadvertently move the bellows in the opposite direction, and, as a result of the sensitivity of the bellows pressure sensor, quietly sound the note again. This artefact may be avoided by releasing the keys just prior to the note completely decaying, thus modifying a standard bellows technique for acoustic instruments.

**Bellows shake**

Bellows shake involves rapidly alternating bellows changes, resulting in a dramatic rhythmic effect that is not possible by repeating notes using a wrist movement. Figure 21 provides an example of notational conventions for this technique.

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*Figure 21: Bellows Shake (as written) - Pietro Frosini, Jolly Caballero, bars 132-137*

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*Frosini, “Jolly Caballero,” Highlights For the Accordion, bars 132-137.*
In order to play this, bellows change direction every semiquaver. The bellows shake is notated as it will sound, however the playing technique requires that notes in the right hand be sustained except where the pitch changes, and the bass played staccato such that it is not affected by bellows movement.

Figure 22: Bellows Shake (as played, hand movements only) - Pietro Frosini, Jolly Caballero, bars 132-137 (CD-4: Tr. 19)

There is little doubt that a refined bellows technique is a complex skill to develop. The left hand must not only play the bass part, but also do so while moving the bellows. Similarly, articulation in the right hand can depend on coordinating finger movements with the bellows.

The annotations on the following excerpt show bellows movement in context.
Figure 23: Bellows Movement - Youmans/Arr. Magnante, *Tea for Two*,\(^92\) bars 1-20 (CD-4: Tr. 20)

← bellows OUT
→ bellows IN

By this point the bellows are well extended on the acoustic accordion.

Pressure is gradually increased to create the crescendi.

An increase in pressure together with an accented movement at the fortissimo marking gives direction to the glissando and highlights the climax of the phrase.

Opening bellows during chords with pauses avoids risking running out of "air". If bellows are moving in, the length of pauses must be judged accordingly.

Bellows are "stopped" in order to musically shape the decay of the final chord.

Here the goal is to move the bellows with an even pressure, and to avoid any "jerking" with each crotchet in the bass.

A change in bellows direction often coincides with the beginning of a new section, particularly where the character and tempo change.

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Note the five suggested bellows changes for the acoustic instrument (where the consumption of air varies according to the number of notes played simultaneously), whereas the digital instrument with fixed air consumption requires only three changes. This tactile difference has a noticeable impact when performing since one tends to make counterintuitive bellows changes, and experiences a feeling of restriction in the left arm during full chordal passages. It is, in my view, a major obstacle that stands in the way of feeling comfortable with a reedless instrument.

**Concluding Comments**

Tonally, the digital instrument used for CD-1: *Solo repertoire by Deiro, Frosini, Magnante* is quite convincing, often difficult to distinguish from an acoustic accordion. However, the bellows are not as easily manipulated, particularly at phrase endings and when playing at quieter dynamic levels. Achieving an even and expressive sustain is challenging, and the sensation of moving the bellows differs dramatically from an acoustic instrument where the more notes that are played together, the more reeds that are opened and bellows resistance is reduced. Bellows resistance in the digital instrument is constant.

It has been my experience that the transfer of bellows technique from an acoustic to digital instrument poses the most significant challenge to playing technique. I am far more aware of bellows movements than ever before; in actual fact I seldom pay any attention to this aspect of playing when using an acoustic accordion, since through extended experience with acoustic instruments changing the bellows has become an intuitive movement. I have found myself extending the comfortable range of movement to avoid excessive changes, and even creating moments of silence in which to make changes. There is some forgiveness in
vibrating reeds because when a bellows change is made, the reeds continue to vibrate for a moment. It seems that a digital instrument abruptly stops sounding once air-pressure reaches a certain level; this characteristic is more easily identified when executing a diminuendo to silence on a sustained note. In this instance, a slightly premature end to the sound is not necessarily audible, but when this occurs during bellows changes it is difficult to disguise. The use of sound processing may partially resolve this sonic characteristic.

This examination of playing techniques and the degree to which modifications are required when using a digital instrument at first seems to indicate that few changes are necessary. However, this is potentially misleading, since the overall modification to playing technique when changes are considered together is significant. Accordionists who expect that they will play a digital instrument in exactly the same way as an acoustic instrument will be dissatisfied. This does not mean that the digital instrument should be immediately dismissed, but rather indicates to the player that some time is needed to adapt before judgements are made.

Notwithstanding the difficulties in refining bellows technique that I have mentioned, the research and recordings presented in this chapter attest to the high degree of playability in the design of the V-Accordion, and to the largely realistic way in which the sounds of accordion reeds are digitally reproduced.
CHAPTER 2

Characteristics of the V-Accordion and Ensemble Performance

The development of digital technologies in the form of the “V-Accordion” over the past decade has resulted in the most significant design changes to the piano accordion since the 1920s. These advances prompt accordionists to consider ways in which they may utilise the additional capabilities of the digital instrument in performance, both as a solo instrument and in ensemble performance.

The commercial success and rising popularity of Rock and Roll in the early 1950s encouraged accordion manufacturers to reflect on ways in which they could reinvigorate the instrument so that it might be seen as contemporary, and useful in performing this new style. In America, the Titano accordion company released the ‘Tiger’ accordion, a reeded instrument with internal microphones and an extra set of reeds tuned a fifth above for the performance of Rock music. Leo Mazzei, whose father Ossie operated the largest accordion school in Brisbane (Australia) during the 1950s, commented “we imported the Tiger accordion … it was available in a variety of bright colours … but it didn’t sell very well.”

During the 1960s the Chicago Musical Instrument Company introduced the ‘Cordovox’, a reedless electronic instrument in the form of an accordion wired to an external tone generator. Its sound, when played electronically without moving the bellows, has been described as “a

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93 The V-Accordion range is manufactured by the Roland Corporation. These instruments follow traditional accordion design, with the exception that there are no physical reeds or acoustic means of producing sound. Rather, the air pressure generated by the bellows is sensed electronically, and in turn sounds are generated digitally. These instruments allow accordionists access to both reeded and other sounds, particularly when used as a MIDI controller with external devices.

94 Leo Mazzei (accordionist and teacher), in discussion with the author, June 2011.
tinny, faint organ-like timbre, never evoking the rich texture of the accordion reeds.”

Farfisa, manufacturers of electronic keyboards and organs, launched a similar instrument, the ‘Transicord’, in 1962. Later instruments incorporated both reeds and non-reeded sounds, giving the player access to a wide variety of sounds. Of these instruments, one of the most popular was the ‘Elkavox’. Reedless accordions like the Roland V-Accordion generate all sounds electronically, seamlessly integrating traditional reeded and non-reeded sounds, all of which are subject to the expressive control of the bellows.

**Design**

The physical design of a digital accordion closely follows that of an acoustic instrument, and is promoted as one that players will adapt to easily. My personal experiences support this notion in terms of being able to “play” the instrument, however making a transition that does not cause the player to feel technically limited by the instrument is challenging, and not so immediate. This challenge has been mentioned in the first chapter in respect of modifications to playing style; the discussion here focuses on design elements which distinguish the digital accordion from the acoustic instrument, and which are advantageous in realising new performance opportunities. It is not intended that this be a detailed technical discussion about the design of the Roland V-Accordion series, but rather an opportunity to highlight certain distinctive features that have influenced the selection of repertoire for this research project.

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96 In this paper I refer to sounds that are not representative of an acoustic accordion as “non-reeded” rather than “electronic”. This terminology acknowledges that all sounds produced by a digital accordion, including reed sounds, are in fact “electronic”.
97 This instrument relied on a bulky, external organ-like tone generator; the volume of electronic sounds was controlled by foot-pedal, while reeds were sounded and controlled by the bellows, usually amplified using internal microphones.
Reed tunings

The tuning of the reeds is arguably the single most important factor in determining the timbral qualities of a particular accordion, and consequently the styles of music that it might suit. The tuning of the middle reeds, and the degree to which these sets of reeds are detuned shapes the sound of the instrument.\(^98\) This may be described as ranging from “dry” (no detuning) to “wet”; if an alternate tuning is required a different instrument must be used. On the other hand, a digital instrument allows the player to select and change the reed tuning according to the repertoire being played.\(^99\) The acoustic accordion used in the *Budget Direct* jingle (CD-4: Tr. 24)\(^100\) has French musette tuning, whereas *Por Una Cabeza* (CD-4: Tr. 25, 1:20-2:05)\(^101\) features a straight-tuned acoustic instrument. By way of illustrating the progression from dry to various wet tunings using a single digital accordion, excerpts from *Die Fledermaus* (CD-4: Tr. 21),\(^102\) *The Mason’s Apron* (CD-4: Tr. 22),\(^103\) and *Under Paris Skies* (CD-4: Tr. 23)\(^104\) provide examples of dry, French and Scottish musette tunings respectively.

Aside from the tuning of the musette reeds, the digital instrument is programmed with many different versions of the other reed sets, affording the player great scope in sound selection. This, together with the ability to access geographically and genre specific tunings is a

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\(^{98}\) A professional accordion typically has four sets of reeds in the treble register. These comprise a “bassoon” reed (corresponding to a 16’ stop on an organ), two sets of “musette” reeds (corresponding to 8’ stops), and a single set of piccolo reeds (corresponding to a 4’ stop). Generally the low, high and at least one set of middle reeds are tuned to the same reference pitch, e.g. A=440Hz. The second set of middle reeds may be tuned to A440, or may be slightly detuned, resulting in the “beats” or tremolo-like effect that characterizes what is referred to as musette or “wet” tuning. A straight-tuned or “dry” instrument is so called because the middle reeds are not detuned.

\(^{99}\) The French musette sound is characterised by a very wet tuning; the German or continental style falls somewhere between the wet French tuning and a totally dry tuning. For chamber music or “classical” performance a dry-tuned accordion causes fewer intonation difficulties within the ensemble.


\(^{103}\) *The Mason’s Apron* is a traditional Irish reel.

distinguishing feature of the instrument, and one that leads towards authentic timbral qualities in the performance of music from other countries.

**Bass systems**

The bass system, or the layout of the basses, is another fixed element of traditional instrument design that affects the types of music that may be played. In common with fixed reed tunings, most acoustic accordions are built with either a *stradella* or *free-bass* bass system (see Appendix 2: Bass Systems). The digital accordion overcomes this restriction by affording players the ability to freely change between systems. It is particularly useful for accordionists who use in the main a stradella bass, but who occasionally require the versatility and increased range of a free-bass system.

**Non-reeded Sounds**

Digital instruments produce a variety of non-reeded sounds that may be used either independently of, or in combination with the traditional reed sounds of the acoustic accordion. The availability of on-board, or internal “orchestral” sounds depends on the design of specific instruments, however where instruments are MIDI capable, there is the potential to access sounds from external devices, thus expanding the sonic palette available to the performer. These sounds generate new playing techniques in pursuit of authentically reproducing the sounds of other instruments, and shaping those sounds with the bellows. Later in this chapter I will discuss a performance of *Bugler’s Holiday* by Leroy Anderson.

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105 Some stradella instruments incorporate free-bass systems by mechanically converting chord buttons to single notes (hence the term “convertor” accordion). Free-bass may also be added through the addition of three additional rows nearest the bellows, however this adds to the weight and bulk of the accordion.

106 In this research project a Roland FR-5 V-Accordion has been used for all (digital) performances. A complete listing of internal sounds is provided in Appendix 5.
where I have used the digital accordion as a controller for every orchestral part, producing a multi-track recording. Other repertoire included on CD-2 has explored the use of internal “orchestral” sounds to enhance idiomatic reed sounds, and the use of the digital accordion as a MIDI controller for sounds produced by external devices.

**Group Performance**

During the first half of the twentieth century in America the burgeoning interest in playing the accordion and the proliferation of accordion schools led to the establishment of accordion bands and orchestras.

![Figure 24: Rizzo Accordion Ensemble, 1936](image-url)

Flynn et al, *The Golden Age of the Accordion*, 241

This image has been removed for copyright or proprietary reasons

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Bands, together with solo, duet, and other small group performances featured in concerts devoted solely to the accordion.\(^{108}\) Solo repertoire was reworked into multiple band parts, each part played by a “section” of accordionists. For clarity, not all accordionists played a left hand (bass) part, and to reinforce the bass a special bass accordion was often used.\(^ {109}\)

Ensemble performance using multiple accordions magnifies a number of challenges associated with the acoustic instrument, regardless of the number of players. Not the least of these challenges concerns the timbral blend resulting from combining the reed sounds of instruments of different make and tuning style. Typically, group members have not played identical instruments, thus forcing some compromises in the pursuit of tonal clarity and purity. If a digital instrument, with its inherent stability of tuning and predictable timbral qualities, is used for ensemble performance, perhaps issues of blend and balance may be alleviated.

To examine this theory, I have recorded both an accordion duet, and an accordion band arrangement, multi-tracking each part. The first recording (refer to CD-2: Tr. 1), a novelty arrangement of the nursery rhyme tune *Three Blind Mice*, illustrates a variety of common styles in duet writing. The use of two players allows harmonised passage playing that would not be technically possible for a single accordionist.

\(^{108}\) Concerts were often presented in the form of accordion club “picnics”. A sample programme from 1937, reproduced in Flynn et al, *The Golden Age of the Accordion* (1984), 19, lists various solo, duet, trio and group performances.

\(^{109}\) This instrument, modelled on the piano accordion, used only a treble keyboard, pitched an octave lower. Single notes of the bass part were played using the right hand. The three octaves allowed for bass solos that were not limited by the single octave of the standard stradella accordion.
Similarly, Figure 26 illustrates melodic harmonisation not dissimilar to the kind of section writing that might be used for a saxophone section in a Big Band.\textsuperscript{111} The idiomatic use of the bassoon reed in this excerpt creates an additional tonal parallel.

\textsuperscript{110} Leo Mazzei, \textit{Nine Blind Mice for Accordion Duet}, (handwritten unpublished score provided to the author by the composer), bars 129-137.

\textsuperscript{111} A “Big Band” is an ensemble comprised of sections of saxophones, trumpets, trombones, and a rhythm section. This grouping is commonly associated with jazz and the music of the Swing Era.
In both of these examples the fundamental challenge for the players is to sound “as one”. This is achieved by rhythmic synchronisation in the first instance, and is refined by matching the timbres of each part. The recordings that accompany these examples have been multi-tracked by a single player using the same instrument for each part, consequently producing common tonal characteristics in the ensemble. However, in live performance where acoustic instruments are used, even where those instruments are of the same make and style, they may not match tonally. The use of digital accordions (of the same make and style) furnishes both players with identical instruments, and provided each instrument is amplified in the same way, they will have the same tonal characteristics. It follows that a reasonable suggestion might be that the use of digital instruments may enhance the performances of

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113 Instruments may be of different sizes, dependent on the physique of the players. Even where instruments are “the same”, it is likely that there will be some discrepancies in tuning.
small accordion ensembles, due to the resultant timbral blend of the instruments. Of interest is the way these instruments work in larger groups of accordions.

*Pietro’s Return* (CD-2: Tr. 2) is a typical four-part accordion band composition written by accordionist Pietro Deiro, first published in 1948.\(^\text{114}\) Clearly, the aforementioned concerns regarding timbral blend are magnified as the number of parts are increased, and particularly when bands utilising multiple accordionists for each part perform four-part arrangements. I suggest that the use of digital instruments aids the pursuit of cohesive tonal qualities when a single player performs as part of an accordion quartet, and retains the integrity of the original arrangement.\(^\text{115}\) However, a “band” of digital accordions essentially defeats the purpose of an orchestral-style group. Large groups were formed to amplify the sound of the acoustic instrument, and to produce a rich sonic texture resulting from the combined reeded sounds of multiple different instruments. This richness of tone, the signature “sound” of the accordion band, would clearly be lost if digital instruments were used. Since digital instruments must be amplified electronically, there is not any need to use multiple players to reinforce each part. There is however, an avenue for using a single digital accordion as part of a band of acoustic instruments, and this concerns the bass part.

*Reinforcing the bass*

For many players, the reeded sound of the acoustic accordion bass might be considered an area of weakness in the instrument. In his autobiography, accordionist Charles Magnante


\(^{115}\) The use of four digital instruments for quartet performance requires care in ensuring that each instrument retains its own “voice”, such that the tonal blend is not so absolute as to result in a sound that is bland and without character. In the studio, the judicious use of signal processing combined with carefully locating each part in the stereo mix alleviates this problem. When performing live, individual local amplification for each part is needed to retain the spatial sense of ensemble.
acknowledges this weakness, writing, “the use of amplification gives the performer the means of getting a better balance between the treble and bass sides of the accordion.”\(^{116}\) The issue of balance is most pronounced in group performance, and manifests itself in two ways. Firstly, many instruments are not well matched in respect of the relationship between the treble and bass reeds. Instruments may be described as having a “weak” bass, typically meaning a lack of depth and the likelihood that when playing with a full set of treble reeds the bass is overpowered. Similarly, the bass may overpower the middle reeds of the treble when only these are used (although this is far less common). The second aspect of weakness is more complex, a detailed analysis of which is outside the scope of this research. It concerns the manufacture of the reed blocks, the instrument itself, and in particular the way in which the lower reeds sound and respond. Generally, the lower reeds are slower to sound, so when playing faster passages there can be a sense that the bass lacks depth, a concern that has been mentioned earlier in respect of a playing technique that slightly lengthens bass notes. The bass sound of individual instruments is determined by factors including the materials used in reed manufacture, the manner of manufacture, air flow through the instrument, internal resonances, and the physical size of the instrument to name but a few. Prolonging the bass when playing is not a complete solution, and at best only alleviates potential problems of balance. The accordion, in common with the guitar for example, when compared to other “full-range” instruments such as piano, harp and organ, does not produce a “true” bass sound. Accordionists have for some time sought to overcome this either by amplifying the bass, using dedicated bass accordions, or more recently, using electronic, non-reeded bass sounds in place of reeds.

Beyond allowing electronic adjustment of the balance between treble and bass registers, digital accordions afford players limitless access to non-reeded bass sounds. Particularly useful are representations of acoustic and electric bass instruments. Including a single digital instrument to play the bass using an electronic sound might therefore significantly enhance the sound of an accordion band that comprises a large number of different acoustic instruments. To demonstrate this point, an electronic string bass sound has been used in place of a reeded bass on the recording of Pietro’s Return (CD-2: Tr. 2). For comparison, an excerpt using a reeded bass has been recorded on CD-4: Tr. 28. By adopting this single feature of the digital instrument alone, the potential exists to enhance balance in the performance of traditional solo and group repertoire.

*Performance with other instruments*

As a part of the process of identifying prospective ensemble performance contexts where a digital accordion may be viable, the foremost consideration concerns the timbral blend that results from combining with other instruments, either acoustic or digital.

In order to illustrate how combinations of sounds using digital instruments might work, I have recorded Fancelli’s *Aquarelli Cubani* (CD-2: Tr. 3),\(^{117}\) a piece of standard accordion repertoire, accompanied by digital percussion.\(^{118}\) This performance approaches a commercial style in the sense that the intention is to create a full-range or band-like sound; consequently an electronic bass is used on the accordion rather than the traditional reeds.

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\(^{118}\) Percussion sounds are made using a Roland “Handsonic”. This is a single controller incorporating multiple drum pads and internal percussion sounds.
A review of the recording reveals a cohesive timbral blend between the instruments. This is not unexpected, given that the instruments employ the same forms of technology for sound synthesis, and were recorded without microphones using the direct inputs\(^{119}\) of a single audio interface.\(^{120}\) A more interesting observation is made in respect of spatial characteristics, and a sense that the ensemble sounds larger than two physical instruments. This quality results from the location of sounds from each instrument in the stereo image of the track, and the depth of the sound field.\(^{121}\) In the case of the accordion, the bass and treble are panned\(^{122}\) so that, in the main, each part is heard from either the left or right channel. Percussive sounds are programmed more intricately, the locations of various “instruments” spread across the entire stereo image. In addition, the reverberant effects included in percussion programming further refine the location of sounds by creating a sense of depth in the sound field. These programming and mixing techniques result in a recording that sonically mirrors the physical placement of acoustic musicians in live performance; when listening there is some sense of an accordionist, percussionist and bass player spread across a stage. The ability to easily produce this kind of result, at least when recording, is a positive feature of digital instruments. With appropriate amplification and consideration shown to the acoustics of the venue, a similar live performance experience would be achievable.

\(^{119}\) Recordings made with microphones are coloured by the acoustics of the recording room. On the other hand, tracking digital instruments using direct or line-level inputs allows the sounds of the instruments to be captured as they were programmed.

\(^{120}\) An audio interface (or sound card) is used for computer-based digital recording, assisting in sending sounds in and out of the recording device.

\(^{121}\) Recorded music is typically monitored using both a left and right speaker to create a stereo or two-channel image. During the mixing process, instruments are panned or located sonically within this field. The notion of a three-dimensional sound field concerns the additional element of a sense of depth in the recording. By this I mean that certain sounds appear to be closer to the listener than others. Effects such as reverberation and compression influence this phenomenon. A sense of depth is created in acoustic recordings by placing instruments at different distances from microphones.

\(^{122}\) This term refers to the positioning of the sound in the stereo sound field.
A potentially revealing performance context is one where a digital accordion is used to play an accordion solo with orchestra. I have arranged and orchestrated Monti’s popular concert piece, Czardas, to explore this combination of digital and acoustic instruments (CD-2: Tr. 9). For reference, the (unpublished) score of this arrangement is included in Appendix 6.

While preparing for this performance, I was mindful of ways in which the electronic accordion could be amplified, and how the method of amplification might affect the overall ensemble sound. The placement of speakers or monitors is critical, since the model of V-Accordion used does not produce any sound of its own. Monitors placed in front of the group potentially result in the accordion sound being too present; placement behind the group gives a blended sound, but a sound that may be remote, and too distant from the player. If the accordionist uses a small, localised speaker system to compensate for this, the instrument may sound unnatural, seeming to emerge from multiple locations. I decided to use a single instrument amplifier of adequate power, located centrally between the conductor’s podium and first row of strings. This, I reasoned, would allow a sound source that was close enough to serve as personal monitoring, but situated so that it was likely the sound of the accordion would blend with the ensemble. Despite the proximity of the amplification system to my playing position, the slight delay between gesture and sound made accurate rhythmic execution of faster passages difficult. A possible solution to this problem would be to use an

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123 Vittorio Monti (1868-1922) was an Italian violinist, conductor and composer. His only famous work, “Czardas”, has become part of the standard repertoire for gypsy orchestras, and a popular concert piece for instrumentalists.

124 Certain models of digital accordions contain built-in speakers. While these are useful for rehearsal and performance in small rooms, they would not provide sufficient amplification for performance with a large group. In such cases additional external amplification would be necessary.
in-ear monitoring system\textsuperscript{125} in addition to external amplification, provided that the acoustic sound of the orchestra can be heard without restriction by the accordionist.

The solo accordion part in this arrangement was initially written for the treble register only. I elected not to include a bass part since the orchestra would cover that element of the music, the addition of the accordion bass unlikely to enhance the overall sound. Ensemble performance without the left hand bass is common amongst jazz accordionists, who understand that reeded bass sounds conflict with dedicated bass instruments. From the accordionist’s perspective however, I was not aware of the degree to which the act of playing a left hand part provides a rhythmic foundation for the right hand. Although I was capable of playing the right hand alone, there was a far greater sense of security when also playing a left hand part. This unconscious reliance on the left hand probably stems from my familiarity with traditional repertoire where the left hand typically provides bass, chords, and rhythm, supporting the right hand part. One becomes accustomed to the rhythmic security that the left hand offers. Consequently, I elected to play a left hand part,\textsuperscript{126} reasoning that it would assist me but probably not be heard due to doubling in the orchestration. This proved to be the case when the performance was recorded.

In accordance with standard practice for orchestral concert recording, a stereo pair of microphones was used. This technique accurately captured spatial elements of the performance, the solo instrument sounding centralised and suitably present. The recording reveals that the use of a digital accordion with orchestra is viable from the perspective of recreating an authentic acoustic accordion sound. The instrument was easily heard (unlike

\textsuperscript{125}“In-ear monitors” are discrete, high quality headphones that fit within the musician’s ears. Depending of design, the degree to which they reject external acoustic sound varies.

\textsuperscript{126}As published in a solo arrangement by Alfred d’Auberge in 1941.
some acoustic accordions that may require microphones to amplify their sound), the location of the amplifier, if not ideal from the player’s point of view, resulting in a musical blending of sound between the orchestral and solo parts. The stable tuning of the V-Accordion facilitated overall intonation, and I would suggest that performance in combination with acoustic instruments further adds to the perceived authenticity of the digital accordion’s sound.

Despite a satisfactory balance between the accordion and orchestra, adjusting the dynamics of the instrument was difficult. When playing an acoustic accordion, minimal bellows effort results in very little sound, while significant bellows effort will produce stronger dynamics. The digital instrument requires external amplification, which, if not carefully adjusted, may produce very loud sounds when only minimal bellows effort is expended. Conversely, the player might expend a great deal of energy yet the dynamic level of the instrument is too low. It is challenging to adopt a bellows technique that feels natural, given that the use of the bellows are judged in reference to dynamic levels, and for digital instruments these levels are affected by the settings of external amplifiers. Whilst the same might be said of amplifying an acoustic instrument using a microphone, the acoustic instrument actually produces the sound, the player controlling the bellows according to what is heard from the accordion itself.

In addition, I felt restricted by the cables that connected the accordion to its power supply and amplification while I was playing. If wireless technology had been used instead of cables, potentially unreliable batteries would have been the only option to power the accordion. The presence of physical connections meant that it was not practical to walk on stage with the instrument in the manner of a soloist, and that the instrument had to be “taken off” before leaving the stage.
Due to my concerns about control of dynamics and mobility, together with a desire to avoid risks and to feel at ease while performing for a large audience, I decided to record the dress rehearsal of the concert using a digital accordion (refer to CD-2: Tr. 9), and to give the concert itself using an acoustic instrument (refer to CD-7: Tr. 1). This acoustic performance revealed some minor intonation difficulties between the accordion and the wind section in quiet, exposed passages, although the freedom of movement afforded by the acoustic accordion assisted in conveying my musical intent to the orchestra, conductor and audience. The experience of performing this work using both instruments suggests that determining whether or not the use of a digital instrument is viable goes beyond an assessment of authenticity of sound, and, as in this case, practical considerations and player confidence together with an adherence to accepted performance practice may ultimately be most important in choosing an instrument type. This is not to undermine the use of a digital accordion, but rather to highlight the importance of considering performance context as a part of the process for instrument selection.

Commercial Applications

There is little doubt that throughout its relatively brief history, the piano accordion has struggled to establish a place in Art music circles. The classical or free-bass accordion was even developed specifically for the performance of transcriptions of Art music, and as an instrument for which contemporary composers would contribute repertoire. On the other hand, the accordion as a folk instrument and its use for vaudeville or variety style entertainment has been broadly accepted, at no time more so than in the United States during the middle part of the last century. The emergence of Rock and Roll however, with its characteristic amplified instrumentation immediately dated the reeded sounds of the
accordion, and it is fair to say that the commercial popularity of the instrument has gradually declined since that time. The modern accordion in reedless digital form, while arguably not a complete replacement for acoustic instruments, may have developed to the extent that it is again useful in commercial music making. This section identifies a number of potential applications, including the notion of re-conceptualising the instrument as a MIDI control interface.

The “Two-Piece Trio”

An accordion, be it acoustic or digital, is by virtue of design capable of reproducing three independent parts simultaneously. I refer to the combination of the treble register, bass buttons that sound single notes, and the various chords of the bass register. These three elements encompass the roles of melody, bass and chords respectively, almost as though there were three instruments in one. The availability of non-reeded electronic sounds in the digital instrument means that this multi-instrumental characteristic can be exploited, each part gaining timbral independence and realism according to the sounds selected. Certainly, the sonic illusion of a duo comprising an accordionist and bass player is easily created. By adding a percussion instrument, a “two-piece trio” or band is formed. Such a group has inherent commercial potential, if only for the fact that two musicians are employed instead of three. In terms of musical arrangements, there is enormous flexibility since a single person plays the melody, harmony and bass. This simplifies both preparation and performance, particularly in applications where it is sometimes necessary to present music that has not been formally arranged. To investigate the commercial potential of a “two-piece” trio from a

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127 In recent times Roland digital accordions have been used in the Cirque du Soleil productions “Zaia”, “Alegria” and “KÀ”.
128 A MIDI control interface or MIDI controller is used to play sounds generated by external devices that conform to the MIDI protocol.
musical perspective, I have recorded a number of duet tracks where a digital drum kit is used in the ensemble. In these instances, I have avoided traditional accordion repertoire, instead exploring various jazz and popular styles. A “straight-tuned” set of reeds has been used in order to escape the musette sound of continental accordion music. This tuning better represents the sounds of solo and sectional playing by wind instruments in jazz and popular styles.

_All of Me_, written by Gerald Marks and Seymour Simons in 1931, was the first work selected for performance (CD-2: Tr. 4). An acoustic bass sound for the left hand accordion part was chosen, retaining reed sounds in the right hand. Bass chords were not played. The ensemble texture is full, the added depth and realism of an electronic bass sound producing a credible and distinct bass part. However, the range of treble reeds selected to carry the melody is too restricted if the intent is to mask the idiosyncratic sound of the accordion. The reeded sounds are themselves not necessarily problematic, although greater variation in registration and more limited use of the “master” coupler would produce a wider range of tone colours and avoid the single “voice” that is commonly associated with the accordion (see Appendix 3: Treble and Bass Registration). To illustrate an alternative registration, single middle reeds are used in the recording of _Love’s Theme/Too Good to be True_ (CD-2: Tr. 5), the “master” reed set selected only at 1:30 and again at 2:45 for extra strength in the chorus sections. An

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129 Gerald Marks and Seymour Simons, _All of Me_ (Marlong Music, 1931)
130 The “master” coupler is the switch that causes all reed sets in either the treble or bass to sound. It produces the fullest and richest sound from the instrument.
131 This arrangement by the author is a medley of two well-known songs; _Love’s Theme_ by Barry White (Savette Music Co., 1973), and _Can’t Take My Eyes of You_ by Frankie Valli (EMI Longitude Music Company, 1967).
132 All time code references refer to locations on individual tracks.
even more contrasted registration may be heard in the adaptation of the Glenn Miller classic, *In the Mood* (CD-2: Tr. 6). Figure 27 shows the reed types used for this performance.

<table>
<thead>
<tr>
<th>Track Position</th>
<th>Symbol</th>
<th>Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:00</td>
<td></td>
<td>Master</td>
</tr>
<tr>
<td>0:40</td>
<td></td>
<td>Bassoon</td>
</tr>
<tr>
<td>1:01</td>
<td></td>
<td>Violin</td>
</tr>
<tr>
<td>1:10</td>
<td></td>
<td>Master</td>
</tr>
</tbody>
</table>

The use of the bassoon reed plausibly resembles a section of wind instruments. Jazz accordionists select this reed almost exclusively for this reason. Also noticeable is that the dynamic effect of reed changes when a digital instrument is used is not as dramatic as for their acoustic counterparts, since the “base” volume of the acoustic instrument changes according to the number of reed sets sounding simultaneously. The more reeds used, the louder the sound. The design of the digital accordion does not seem to allow for any significant dynamic variation between the various combinations of reeds used for this recording, thus reducing the degree of contrast between sections.

*Combining reeded and non-reeded sounds*

The adoption of an electronic bass sound has been earlier explored in some detail, its use an obvious enhancement where a distinct bass voice is needed. I would characterise the use of electronic bass as “low impact”, in the sense that it is sufficiently removed in terms of register and function from the other accordion sounds so as not to affect what is played on the

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133 Joe Garland and Andy Razaf, *In the Mood* (Shapiro, Bernstein and Co. Inc., 1937).
treble register of the instrument. On the other hand, selecting a non-reeded sound in the treble impacts the identity and even the validity of the digital instrument. At some point the argument might be made that, in terms of its sound, the digital instrument is no longer an accordion, questioning the use of the instrument in contexts where there is little or no use of reeded sounds. I have written an arrangement of *Copacabana* (CD-2: Tr. 7) specifically to illustrate judicious combinations of reeded and non-reeded sounds that do not obscure the tonal identity of the accordion. Sounds selected are detailed in the following figure.

**Figure 28: Treble Registration - *Copacabana***

<table>
<thead>
<tr>
<th>Track Position</th>
<th>Symbol</th>
<th>Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:00</td>
<td>n/a</td>
<td>(non-reeded) Trombone</td>
</tr>
<tr>
<td>0:15</td>
<td></td>
<td>Violin</td>
</tr>
<tr>
<td>0:39</td>
<td></td>
<td>Master</td>
</tr>
<tr>
<td>0:59</td>
<td></td>
<td>Violin</td>
</tr>
<tr>
<td>1:31</td>
<td>n/a</td>
<td>(non-reeded) Trombone</td>
</tr>
<tr>
<td>2:20</td>
<td></td>
<td>Violin</td>
</tr>
<tr>
<td>2:51</td>
<td>n/a</td>
<td>(non-reeded) Percussion Organ</td>
</tr>
<tr>
<td>3:23</td>
<td></td>
<td>Master</td>
</tr>
<tr>
<td>4:14</td>
<td></td>
<td>Violin</td>
</tr>
<tr>
<td>4:25</td>
<td></td>
<td>Master</td>
</tr>
</tbody>
</table>

This registration table shows that, in the main, reeded sounds have been used in the performance. The use of electronic brass and organ is limited to introductory and transitional passages, and gives the impression that the solo part is played on an acoustic accordion, accompanied by a band in the form of bass, drums, organ and brass. Careful consideration of

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the ratio of electronic to reeded sounds is important if the distinctive tonal identity of the acoustic instrument is to be retained.

An expressive controller

The recording of *Bugler’s Holiday*135 (CD-2: Tr. 8) was made without using any reeded sounds. Without these, there is little aural evidence that an accordion was used in the performance. This recording also highlights an obvious limitation of the digital accordion in that unless external sound modules or software synthesizers are used, players are restricted to the internal or “on-board” sounds of the instrument. In the case of this work, there were not sufficient internal sounds available to create a recording in the manner that I intended, hence the need to conceptualise the accordion as an expressive control interface rather than a self-contained instrument. This approach responds to research questions concerning ways in which the use of non-reeded or electronic sounds enhance and promote performance contexts that have not typically been associated with the acoustic piano accordion. If the instrument is viewed purely as a MIDI controller, potential performance contexts are not limited by an internal sound set.

The project involved taking a complete orchestral score, and recording each of the instrumental parts separately. The digital accordion was used as the controller or input device; an external sound module for generated sounds.136 My intention was to record each part as an audio track rather than MIDI data,137 seeking to create a “live” rather than

136 A Yamaha Motif-Rack XS sound module was used for this recording.
137 In MIDI recording various data messages are recorded. When the recording is played back, that data is transmitted to devices that generate sounds. Recording in this way allows for extensive editing and the ability to change sounds (and sound sources) easily. I elected, however, not to adopt this approach so that there would be no doubt that each track was performed live, and without significant editing.
programmed character in the performance, and thus exploring the potential of the V-Accordion as a studio controller.

The resultant recording demonstrates ways in which a shallow, responsive keyboard action in combination with the unique expressive qualities of the bellows can produce a musically interesting and well-characterised rendition of a popular orchestral work. The rapid articulation in the solo trumpet parts is reproducible using the accordion keyboard; the accordion bellows simulate the breath control that would be required to shape dynamics and phrasing in the solo parts. Similarly, the responsive treble keyboard of the digital accordion together with the detailed control that is afforded by the bellows expressively shapes performance of the other orchestral parts. Stylistically, the work is convincing, with much of the character of a live orchestral performance retained; the degree to which the acoustic sounds are reproduced limited in the main by the quality of external electronic sounds and not the accordion itself.

Studio-based projects have an advantage in that there is no mandate for the player to be able to access sounds quickly. Generally one sound at a time is used; the instrument can be configured for each individual track as required, and various adjustments made before recording is started. In the studio, manipulation of the multiple control parameters incorporated in external hardware is not necessarily problematic. On the other hand, a live performance using external hardware requires immediate access to sounds, combinations of sounds for the treble, bass and chords, and that relative volume levels are balanced. This compels players to plan and “pre-programme” performances, to some extent limiting

138 In this instance, “shallow” refers to how far the treble keys move when depressed. Piano accordion keyboards, whether they be acoustic or digital instruments, typically have a more shallow keyboard action than most electronic keyboards.
flexibility. If only the internal sounds of the digital accordion are used, there are few issues of control since the instrument has been designed such that adjustments of common performance parameters are easily made. In order to effectively use external sound sources however, an additional control surface\textsuperscript{139} is desirable.

Live performance using external hardware

The digital accordion is clearly viable as a MIDI controller for studio recording, and consequently is worthy of consideration as a controller for live performance.\textsuperscript{140} Portability and mobility have commonly been touted as advantages of the acoustic accordion, and in considering how a transition from studio to live performance might be made using a digital instrument I was mindful of retaining these characteristics. I sought an external sound source that was compact, capable of reproducing an unlimited range of sounds, customisable, and easily manipulated when playing on stage. A rack of various hardware sound modules and associated control surfaces does not fulfil these requirements, and my investigations moved towards software-based synthesizers hosted on a laptop computer.

*The Look of Love*\textsuperscript{141} (CD-2: Tr. 10) uses the digital accordion as a multi-timbral\textsuperscript{142} MIDI controller, accessing the synthesized sounds included with Apple Computer’s software application “Logic Pro 9”. Fretless bass and electric piano sounds are played using the accordion; an electronic drum kit completes the “trio” of instruments that accompany the female vocal part. Aside from the portability of a laptop computer, its real advantage for live

\textsuperscript{139} A control surface is an interface, either software or hardware, that allows the user to control various aspects of external audio devices. Controllers are typically programmable, and communicate using the MIDI protocol.

\textsuperscript{140} “Controller” in this context refers to the control of external devices for sound production, and not control of the internal sounds of the instrument.


\textsuperscript{142} Multi-timbral MIDI controllers are capable of the independent control of multiple sounds. In the case of the V-Accordion up to seven different sounds may be controlled simultaneously.
performance arises through the use of the integrated performance software “Mainstage 2”. This software functions as a host for software based and external hardware synthesisers, incorporating a fully customisable user interface with which the performer can interact directly. In addition, software controls may be “mapped” to hardware controls such as those contained on the digital accordion. This capability alleviates concerns raised earlier regarding the control of external sounds in live performance by allowing accordionists to effectively repurpose various controls on the instrument itself for the local control of remote hardware.

Sonically, this performance of *The Look of Love* gives a strong impression that an electric piano is being played – particularly in solo and improvisatory passages. There is also a strong sense that a separate bass player is involved, and that despite the fact that an accordion is being used, the sound bears no relation to that instrument. This raises the question, “Why play an accordion instead of electronic keyboards?” I have shown earlier in this chapter that in electronically reproducing the sounds of some instruments, the expressive control afforded by the accordion results in performances that are musically engaging and persuasive facsimiles of their acoustic counterparts. On the other hand, in some instances there is no justifiable musical reason to favour the use of a digital accordion where other alternatives are available. The following chapter is dedicated to identifying performance contexts and applications that validate the use of a digital instrument.

**Concluding Comments**

The digital accordion affords players a multitude of opportunities to engage in performances where an acoustic instrument may be less suitable, allowing access to a sonic palette that is
not restricted to reed sounds, and the use of different reed tunings without the need to change instruments. It is easily recorded, amplified, has stable intonation, and is in fact a MIDI controller in the form of an acoustic piano accordion – a controller that (largely) retains the expressive qualities, response and appearance of the acoustic instrument.

These positive attributes do not guarantee that all performance contexts will be equally viable, and considerations of validity in even using an accordion arise where there are alternative instruments that potentially yield the same results. While it is true that most electronic keyboards are capable of reproducing similar sounds as a digital accordion, the expression of these sounds relies on finger velocity or a volume pedal, rather than the bellows found on an accordion. These types of expressive control do not suit all sounds equally, particularly where string and wind sounds are used. In some cases controlling expression using bellows will yield more realistic and musical results. For an accordionist, a controller in the form of an accordion, and which can be manipulated in the same way as an accordion, is a familiar instrumental ‘interface’, and consequently intrinsically attractive. Further, the unique design of an accordion involving discrete treble and bass registers lends itself to performance contexts where the accordionist must effectively function as multiple instrumentalists.

I have shown that by carefully combining electronic and reeded sounds, traditional repertoire that retains the identity of the acoustic instrument may be performed and enhanced. Conversely, I have also demonstrated performance contexts where the sounds selected completely mask the identity of the instrument, thus serving another purpose. This ‘duality’ of purpose may be explained as contexts that require an authentic accordion sound, and
contexts where the accordion is used to control other sounds. The ability to fulfil both these roles is a distinguishing feature of the digital accordion.

In terms of the performance environment, the instrument may be used in two basic ways; studio recording, and live performance. The playing technique is constant in both environments, however if additional external devices are used, hardware choices may vary. In the studio a single player can reproduce duet and accordion band music, and even record instrumental backings for their own performances. In live performance there is no other instrument that is capable of reproducing, enhancing and expanding traditional repertoire for the accordion in the manner of the digital instrument, though its use is not without some limitations. For example, my experiences in preparing Czardas (CD2: Tr. 9) for performance attest to issues of restricted mobility, and difficulties in adhering to traditional concert performance practices for soloists and orchestras.

Any instrument is simply a tool for the musician, selected and used to achieve a desired musical outcome. The digital accordion promotes the development of particular aesthetic and technical understandings in players, emerging over time and as familiarity with the digital instrument increases. It is the articulation and application of these understandings that will be explored in the next chapter.
CHAPTER 3

Considerations in Selecting Performance Contexts

An underlying theme for this research has been the desire to validate, through performance, the use of a digital accordion, by accordionists. Questions concerning the degree to which an acoustic instrument may be replaced, and ways in which electronic sounds may be used to enhance performance, arise when justifying the physical existence and ongoing development of the digital instrument. Judgments about artistic validity are informed by considering the aesthetic qualities or characteristics of various performance contexts where a digital instrument is used.

I have previously suggested that an entirely new aesthetic is not created through the use of a digital instrument, but rather its use extends understandings in players and audiences about the accordion as a performance instrument. For the instrument to be viewed favorably, these understandings must arise from the recognition of artistic and aesthetic value evident in performances where a digital accordion is used in preference to its acoustic counterpart. Therefore, if one pursues the hypothesis that some performance contexts will suit the digital instrument better than others, it follows that what is needed is to identify those, and to promote a process by which players may determine and validate their choice of instrument.

Figure 29 provides a graphic representation of this process.
Once a potential performance context is known, it is interrogated in order to establish its specific technical and aesthetic requirements. These requirements are then related to the technical capabilities of the digital accordion as a first step in determining suitability. If the use of the instrument is technically possible, consideration is given to the aesthetic and musical aspects of the performance. At this point a justifiable decision can be made concerning the choice of either an acoustic or digital instrument.

In this chapter I will discuss technical and aesthetic understandings for consideration by players who seek to use a digital accordion. I will then present a selection of repertoire, categorized according to those performance contexts that have emerged from earlier creative work as likely to favour the use of a digital accordion. Each work has been prepared with the experiences of the earlier exploratory performances (refer to CD-1 and CD-2) in mind, the intention being to refine performance practice and achieve artistic results that validate the use of a digital instrument.
Technical Understandings

Although digital instruments are promoted as being played in the same way as their acoustic counterparts, or as requiring a common playing technique, mechanical differences mean that this is not entirely true. While acoustic and digital accordions ostensibly share the same physical design, they are fundamentally different in the way that they produce sounds, and consequently are also mechanically different.\(^\text{143}\) The tactile experience for the player is not exactly the same, and gestures familiar to the acoustic accordionist do not always yield the same results. That is not to say that very similar results are unachievable, but to suggest that some modification or fine-tuning of playing technique (particularly in the area of bellows control) is needed in order for this to occur. These modifications have been discussed at some length in Chapter 1, and therefore will not be restated in this section, except to make the point that it is the refinement of a traditional technique rather than a new or modified playing style that allows an accordionist to make the transition to a digital instrument. Only when a level of familiarity and comfort has been attained can a player consider how they might best use the instrument. The recordings contained on CD-1 demonstrate the degree to which the digital accordion sonically replicates an acoustic instrument, and the discussion and findings from research in Chapter 1 do not justify discounting the use of a digital instrument solely for reasons of playing technique.\(^\text{144}\)

\(^{143}\) There are fewer moving parts in digital accordions, the treble keys and bass buttons do not activate levers which open pads on reed blocks, and bellows movement is registered by an air-pressure sensor rather than used to direct air through metal reeds. In addition, digital accordions are highly configurable in terms of sounds (both reeded and non-reeded), volumes, and various effects that potentially enhance performances.

\(^{144}\) An exception to this statement is where bellows shake is required. Using the instrument chosen for this project (Roland FR5), I have been unable to successfully perform a bellows shake, and therefore if that were critical to a performance context I would not use the digital instrument.
So what does technical understanding actually mean if not playing technique? In the framework of this discussion, technical understanding means knowing the capabilities of the instrument that *distinguish* it from an acoustic accordion. The table shown in Figure 30 highlights some of the defining characteristics of digital instruments.

**Figure 30: Defining characteristics of digital instruments**

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reeded Sounds</td>
<td>• Multiple reed tunings may be accessed and easily changed&lt;br&gt;• Reeded and non-reeded sounds may be combined</td>
</tr>
<tr>
<td>Non-reeded Sounds</td>
<td>• A variety of non-reeded ‘orchestral’ internal sounds may be selected for the treble, bass and chords.</td>
</tr>
<tr>
<td>Bass Configuration</td>
<td>• Stradella and various types of free-bass systems are available</td>
</tr>
<tr>
<td>Intonation</td>
<td>• Adjustable and stable</td>
</tr>
<tr>
<td>Balance</td>
<td>• Relative levels between treble, bass and chord parts are easily adjusted</td>
</tr>
<tr>
<td>Amplification</td>
<td>• Easily amplified without the need for microphones</td>
</tr>
<tr>
<td>Signal Processing</td>
<td>• Various internal effects including reverb and chorus are available</td>
</tr>
<tr>
<td>Recording</td>
<td>• Ideally suited to this environment – microphones are not required and a clean signal, free of the extraneous mechanical noises common to acoustic accordions, is easily recorded.</td>
</tr>
<tr>
<td>MIDI</td>
<td>• Fully compliant with the MIDI standard&lt;br&gt;• Able to transmit multiple channels of MIDI data to external devices simultaneously, and therefore function as a controller for a basically limitless number of electronic sounds</td>
</tr>
</tbody>
</table>

Contexts that *rely* on an instrument with these kinds of characteristics or capabilities mandate the use of a digital accordion for performance. In such cases the preferential use of the digital instrument is a straightforward and defensible decision, since the performance cannot actually be realized using an acoustic accordion. The question of whether or not a digital
instrument should be used in contexts where an acoustic accordion could also be used is more complex, relying on aesthetic as well as technical considerations for its answer.

The information in the preceding table (refer to Figure 30) reveals both familiar technologies, and technologies that fall outside what might be considered a typical knowledge base for acoustic accordionists. Players will readily understand references to reeds, balance, intonation and bass configuration, but not necessarily be as conversant with the language of MIDI and amplification or sound reinforcement. These are essential complimentary understandings for accordionists who wish to maximize their use of a digital instrument. Of these, familiarity with the MIDI protocol is needed if external hardware is to be controlled, however of more immediate concern is the manner by which sound is projected by the digital accordion, and the recognition that the very need for external amplification may have impact upon a decision to use a digital instrument. It may be that, particularly in an ensemble of acoustic instruments, the use of an amplified instrument produces a sound that is too localized and not well blended. On the other hand, the use of microphones and an acoustic instrument in an outdoor performance venue may produce less satisfactory results than a digital instrument directly connected to an amplification system.

If it is agreed that digital instruments are played in much the same way as acoustic instruments, and that a matched timbral quality of reeded sounds is possible, then it would seem that the choice of instrument by the player in contexts where either acoustic or digital instruments might be used is made subject to personal aesthetic and artistic understandings.
Aesthetic Understandings

The acoustic piano accordion has a well-established physical and tonal identity, and the convincing performance of ‘accordion music’ using a digital instrument seems in part to rely on maintaining this identity. There is a balance to be found when combining reeded and non-reeded sounds so that the distinctive character of the acoustic instrument is preserved, and that the music retains those qualities that underpinned its conception. In other words, there is a defining, intrinsic aural aesthetic integral to traditional literature for the accordion that should be considered when adapting this literature for performance using a digital instrument. Conversely, there are performance contexts and repertoire that are not readily identified with the sounds of an acoustic accordion, but are potentially suitable for performance using an accordion to control electronic sounds. In these cases, the aesthetic considerations concern the degree to which the sounds of electronic instruments are realistic facsimiles of the originals, and their suitability for control using the bellows as the primary means of expression.

In the discussion in Chapter 2 concerning my performance of Monti’s Czardas with orchestra, I raised the notion of adhering to accepted performance conventions. When attending an orchestral concert featuring an accordion soloist one might expect that the soloist will walk on stage with their instrument and have the same freedom of movement that is experienced by other instrumentalists (where the instrument is portable). Freedom of movement avoids any sense of physical restriction that may affect the performance, and contributes to the aesthetic experience of the audience by aiding the portrayal of character and musical intent. Players of acoustic accordions are accustomed to such freedom. With reference to visual art, Roosevelt Porter writes that “if two artworks appear differently, then
the same aesthetic quality cannot belong to both artworks."

I suggest that this observation might also apply to the visual aspects of live musical performance. If the player’s intention is to preserve the aesthetic qualities of an acoustic performance, then appearing as though one is playing an acoustic instrument is worthy of consideration.

There is an obvious subjective aspect to determining those aesthetic qualities that are important in performance, and musicians will value certain elements over others. From a personal perspective, I approach the use of the digital accordion with the desire that the instrument itself becomes transparent, and that the aesthetic experience of the audience, whilst encompassing a visual element, arises mainly from the music that is heard. This means that the instrument must be played with authority, and that its use should not detract from the musical experience in any way. The discussion and recordings associated with the previous chapter clearly demonstrate the ability of the digital instrument to enhance the performance of traditional repertoire; this alone is a compelling reason to favor using a digital accordion.

Preliminary investigations into using the instrument as a MIDI controller, represented by earlier discussions of performances of *The Look of Love* and *Bugler’s Holiday* reveal an immense opportunity for further research, but at the same time give rise to an aesthetic tension concerning the sonic identify of the accordion when reeded sounds are not used. Once the accordion is used *primarily* as a (MIDI) controller, a crucial conceptual change on the part of the player occurs. No longer is it important to retain a ‘reeded’ sonic identity when using the instrument, less relevant are traditional playing techniques and performance contexts, and the scope for performance activities is massively expanded. In other words, the

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146 Burt Bacharach and Hal David, *The Look of Love*.
147 Leroy Anderson, *Bugler’s Holiday*. 

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boundaries that have shaped this current study no longer apply, and an entirely separate and complimentary study is suggested.

For these reasons, in live performance contexts, I have decided to use only those sounds that are contained within the accordion itself, thus viewing the digital accordion as a self-contained instrument, retaining its sonic identity, and therefore making a more direct comparison with its acoustic counterpart. In studio recording this restriction is unnecessary, since in such an environment the accordion becomes more a MIDI controller than an identifiable instrument in its own right, and there is no visual aspect to the performance.
Performance Contexts

The repertoire chosen for CD-3 has been selected to exemplify a range of performance contexts where a digital accordion might be used. In addition, the repertoire provides further evidence towards resolving the principal questions posed in this research project. Context 1 concerns the authenticity of digital reeded sounds, Contexts 2 and 3 illustrate enhanced performance outcomes through the use of non-reeded sounds, and Context 4 demonstrates new opportunities for performance using a digital instrument. Underpinning each performance context is the desire to validate the use of a digital instrument, and I will later propose criteria to guide performance in support of this goal. Performance contexts are shown below, together with representative repertoire.

**Figure 31: Performance Contexts and Repertoire, CD-3**

<table>
<thead>
<tr>
<th>Context</th>
<th>Repertoire</th>
</tr>
</thead>
</table>
| 1. Solo or ensemble performance as a direct replacement for an acoustic instrument, or where production requirements demand a pure accordion sound, free from mechanical noise and other sonic artefacts | • The Carnival of Venice (Trad., Arr. Frosini)  
• Piazzolla: Five Tango Sensations for Bandoneon and String Quartet  
• Confrey: Dizzy Fingers for Accordion Trio (Arr. Matte) |
| 2. Solo performance where electronic (non-reeded) sounds are combined with reeded sounds, or solo performance using only electronic sounds | • Deiro: Tranquillo Overture  
• Gypsy Jazz (Trad., Arr. Cere)  
• Fancelli: 10Km al Finestrino (Adapt. Voltz) |
| 3. Performance where an accordionist fulfils the dual role of ‘keyboard’ and ‘bass’ player | • Ram, Nevins and Dunn: Twilight Time (Arr. Camini)  
• Jazz in Venice (Trad., Arr. Cere) |
| 4. Performance where a digital accordion is used solely as a MIDI controller for recording | • Morricone: Gabriel's Oboe (Arr. Longfield)  
• Elgar: Serenade for Strings Op. 20, Mv. 2 (Adapt. Voltz) |
There is a concentration on live performance in the material selected, due to the underlying focus of this study to present the digital accordion as a concert instrument. Although all of the music is presented as audio recordings, repertoire that relates to concert performance is not reliant on any studio-specific production techniques, and thus may be performed live. Some exploration of each of these contexts has occurred in the earlier performance activities of this project. The discussion that follows introduces selected criteria to guide performance that have emerged from an analysis of this earlier work.

*Context 1: Solo or ensemble performance as a direct replacement for an acoustic instrument, or where production requirements demand a pure reeded sound*

Guiding criteria:

- authentic reeded sounds are used
- the playing techniques and performance conventions applicable to an acoustic instrument are maintained
- an appropriate balance and blend between is achieved between the digital accordion and acoustic instruments in ensemble performance
- there is a justifiable reason for not using an acoustic accordion

In *Carnival of Venice* (CD-3: Tr. 1)\(^{148}\) the intention was to use a digital instrument as a direct replacement for an acoustic accordion, demonstrating that a realistic representation of reeded sounds is achievable. There is, of course, on face value, no justifiable reason to make this selection in preference to an acoustic instrument, however there may be situations where, for pragmatic reasons, the use of a digital accordion is mandated. These could include the

performance of solo ‘acoustic’ repertoire as part of a mixed program where electronic sounds are also used, contexts where an amplified sound is needed, or even recording projects that rely on pristine sound quality and the ability to edit and manipulate work with accuracy.

The recording of Carnival of Venice reveals an energetic performance, coloured by contrasting reed registrations, and projected with the dynamic range and dramatic expression that would typify a performance using an acoustic accordion. The shallow, responsive keyboard action of the digital instrument is an aid to rapid passage playing, and reeded sounds are authentically reproduced. From a listener’s perspective, it is difficult to identify that a digital instrument has been used.

The music of Astor Piazzolla has invigorated performance repertoire for accordionists due to timbral similarities between the bandoneon and accordion. These similarities go further than sound alone, since bandoneon performance is characterized by the same sense of drama and emotive playing found in stradella accordion music. By way of illustration, I have recorded the first tango, Asleep, from Piazzolla’s Five Tango Sensations for Bandoneon and String Quartet (CD-3: Tr. 2), using a digital instrument for the sole purpose of accessing a specific reed sound that closely matches the sound of the bandoneon. In order to closely reproduce the unique playing style of Piazzolla, I have transcribed his 1991 recording with the Kronos Quartet, adapting the bandoneon part to suit the stradella accordion. In this recording, Piazzolla enhances the published score through improvisation and ornamentation.

149 The bandoneon, whilst a free reed instrument like the accordion, is a member of the concertina family of instruments. These instruments are characterized by buttons that move in the same direction as the bellows, rather than accordions where keys and buttons are located on the front face of the instrument. In addition, the pitch of notes changes according to the direction in which the bellows are moved.

150 Astor Piazzolla, Five Tango Sensations for Bandoneon and String Quartet (Darmstadt: Tonos, 2008).

In this performance context, the conventions of a small chamber music performance suit an amplified digital accordion better than those associated with the concerto style performance of Czardas (refer to CD-2: Tr. 9). The accordionist is seated as part of the ensemble, and minimal amplification located and controlled close to the player is all that is needed. The time taken by the string players to tune gives the accordionist an opportunity to check sound level, and to ensure that instrument settings are correct.

Justification for the use of a digital instrument arises from not only accessing a ‘bandoneon’ sound, but also where performance with other instruments requires stable intonation from the accordion. In making this recording, I was particularly interested in feedback from other ensemble members concerning the sound and suitability of the digital instrument. The musicians involved in this performance were selected so as to bring a rich collective experience to the project. They included a professional orchestral player, a long-standing string director in a secondary school, a freelance ‘cellist and an orchestral conductor.

In reviewing our performance, I posed the following questions to my colleagues:

1. Did the use of a digital instrument detract from the performance?
2. Were there any difficulties in playing with a digital rather than acoustic instrument?
3. Did the digital instrument enhance the performance?

Without exception, all agreed that the use of an electronic instrument was largely transparent, and not a decision that adversely affected the performance. In fact, the feeling was that the instrument chosen enhanced the overall sound of the ensemble, particularly in respect of
intonation and in approximating the sound of the bandoneon. It was agreed that, once amplification was located and adjusted, there were no particular difficulties associated with the performance due to the inclusion of the digital accordion.

In certain contexts the predominant production requirement is that reeded accordion sounds be recorded free of the mechanical sonic artifacts typically produced by acoustic instruments. These include ‘clicking’ sounds from the bass button mechanism, the sounds of registration changes, noise from the treble keyboard, and reeds that perhaps do not speak as cleanly as others. Contemporary audio production standards have resulted in recordings of ever increasing fidelity, to the point that these sonic artifacts that may have once been accepted as a part of the accordion sound are now considered problematic, detracting from the musical performance and dating the instrument. Interestingly, Roland digital accordions are programmed such that some of these sounds are retained for the sake of realism, although the degree to which they are present is editable by the user. Minimal mechanical noise is a desirable characteristic of acoustic instruments, and in this regard the use of a digital accordion allows complete control over this element of the accordion sound. In addition, recordings made without microphones remain free from non-instrumental noises and are not affected by the acoustic properties of the recording space, thereby facilitating the mixing and editing processes.

*Dizzy Fingers*\textsuperscript{152} (CD-3, Tr. 10) is an arrangement for accordion trio, and has been selected to illustrate the potential for digital instruments to produce a high fidelity recording, and to demonstrate how individual parts may be edited so that each instrument remains distinct in the final mix. The realism of the accordion sounds heard on this track rely on adopting an

\textsuperscript{152} Zez Confrey, [arranged] by James Matte, *Dizzy Fingers* (New York: Jack Mills Inc., 1923).
idiomatic playing style that maintains the identity of the acoustic instrument. An acoustic bass sound together with a ‘tenor saxophone section’ for the chords is used for the left hand part; a colleague has added a complimentary drum part.

Immediately noticeable in the recording is that each part is independently located, and that there is a sense of three accordionists playing. Harmonic passage playing is well synchronized and aided by predictable instrumental response, yet the character of a live performance rather than one that has been programmed using electronic instruments is preserved. The music is free from sonic artifacts and a pure, realistic reed sound is projected, each phrase shaped with the dramatic flourishes vital to this style. By substituting a non-reeded bass sound a strong harmonic foundation to support the solo parts is established, adding to the sense of ensemble without detracting from the accordion sounds.

**Context 2: Solo performance where non-reeded sounds are combined with reeded sounds, or solo performance using only non-reeded sounds**

Guiding criteria:

- the timbral identity of the acoustic accordion is preserved by considering the ratio of reeded sounds to non-reeded sounds
- the use of non-reeded sounds enhances performance outcomes
- the choice of non-reeded bass sound (if used) takes into consideration the bass writing, and whether or not a sustained bass is required
- non-reeded sounds can be controlled in a stylistic manner using the bellows
- the non-reeded sounds of specific instruments have realistic timbral qualities
I have previously discussed at some length the bass register of the accordion (see Chapter 2, *Reinforcing the bass*), and suggested that performance of solo repertoire may be enhanced by using non-reeded or electronic sounds to add a greater sense of depth, and to achieve a better balanced, full-range sound. In *Tranquillo Overture*\(^\text{153}\) the bass writing calls for a combination of sustained sounds in the introduction (CD-3: Tr. 3, 0:09-0:27) together with a detached bass in various sections as the work develops. These include the *habanera* pattern (CD-3: Tr. 3, 1:33) and the *allegro* that leads to the main theme of the work (CD-3: Tr. 3, 2:29). The Roland FR5 V-Accordion that I have used has available bowed and pizzicato bass sounds; in this instance a bowed bass sound has been selected for both sustained and detached passages. This sound blends well with the reeds of bass chords, and serves as a strong foundation for the right hand part. The identity of the acoustic accordion is maintained through the exclusive use of reed sounds in the treble, alternating between ‘violin’ reeds and the full reed set.

*Gypsy Jazz* (CD-3: Tr. 4)\(^\text{154}\) progresses the notion of enhancing the bass part by using non-reeded sounds for both single notes and chords. Here a ‘pizzicato acoustic bass’ is contrasted with a ‘tenor saxophone section’ for the chords. Although I would not claim that the saxophone sound is particularly authentic, when heard as a part of the complete performance its sound blends well and discretely provides the harmonic and rhythmic structure that is needed in this style. The alternative use of a reeded chordal sound, although viable, would be tonally more present, and potentially detract from the reeded sounds of the treble register. In the right hand part I have contrasted reeds with a ‘percussion organ’ sound. By adding the sound of an entirely different instrument there is the impression created that this is no longer a solo performance, but one that involves a bass instrument, organ, and accordion. This


ability of the digital accordion to be ‘more’ than an acoustic instrument is of value to players who seek to create a fuller sounding performance than that which is possible using an acoustic accordion.

Although Fancelli’s 10Km al Finestrino155 was written for a solo accordion, it is readily portrayed as an electronic organ work if the player likens the bass chords to the part played by the left hand on the lower manual, the bass notes being played on the organ pedal board. The use of the bellows for expression mirrors the expression pedal found on an organ. In this recording (CD-3: Tr. 5) the timbral identity of the accordion is completely obscured, the stylistic suitability of the virtuosic right-hand part and the quality of on-board sounds resulting in a plausible ‘organ’ performance. The degree to which such a performance is believable is determined by the authenticity of non-reeded sounds, and in this regard I would suggest that not all of the V-Accordion’s internal sounds are equally useable. Wind and brass sounds in particular lack tonal realism. Fortunately, the instrument may be used as a MIDI controller to access external sounds if needed, and while the use of additional equipment may be cumbersome in performance, at least the player is not compelled to completely rely on the internal sounds of the instrument.

Context 3: Where an accordionist fulfils the dual roles of ‘accordionist’ and ‘bass’ player
Guiding criteria:

• there is an independence of hands that allows for two distinct parts to be played
• those sounds can be controlled in a stylistic manner using the bellows
• the sounds of bass instruments are realistic

155 Luciano Fancelli, Aquarelli Cubani (Milano: Edizioni Farfisa, 1950).
Performance in this context is reliant on an independent left hand technique that fulfils the same role as a dedicated bass player in a two-piece group. The V-Accordion facilitates expressive independence by incorporating in its acoustic bass an increasingly percussive attack to the sound as the volume rises. Additionally, bass sounds can be programmed so that they have a fixed medium volume. This means that when the sound level caused by bellows movements falls below a certain level, the volume of the bass is maintained, thereby allowing independent expressive control of the right hand sound – the reed sound of the accordion.

If it is the right hand part that most clearly identifies a performance as one that involves an accordion, it is through the selection of a variety of reed combinations or registrations that the performance is made interesting. In *Twilight Time* (CD-3: Tr. 6)\(^{156}\) the following treble registration are used for the right hand part, combined with an acoustic bass sound and reeded chord sounds in the left hand (refer to Figure 32).

<table>
<thead>
<tr>
<th>Track Position</th>
<th>Symbol</th>
<th>Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:00</td>
<td></td>
<td>Master</td>
</tr>
<tr>
<td>0:28</td>
<td></td>
<td>Violin</td>
</tr>
<tr>
<td>2:46</td>
<td></td>
<td>Bandoneon</td>
</tr>
<tr>
<td>3:08</td>
<td></td>
<td>Master</td>
</tr>
<tr>
<td>3:30</td>
<td></td>
<td>Violin</td>
</tr>
<tr>
<td>3:50</td>
<td></td>
<td>Master</td>
</tr>
</tbody>
</table>

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\(^{156}\) Buck Ram et al, [arranged] by Bruno Camini, *Twilight Time* (publication details unknown).
Jazz in Venice\textsuperscript{157} (CD-3: Tr. 7) further demonstrates the importance of meticulous registration choices, and provides examples of where reed selection is dependent not only on a desired tonal colour, but also register. For example, the passage commencing at 1:41 uses a ‘bassoon’ reed; at 1:52 a variation of this passage is voiced an octave lower. Here the registration is changed to a ‘clarinet’ reed that, while actually sounding an octave higher, provides adequate contrast due to the characteristic timbral qualities of the middle reeds. Rather than use a full ‘master’ reed set in this performance, I have substituted a ‘bandoneon’ reed combination that enhances the jazz style of this work by excluding multiple middle reeds of slightly different tunings. A ‘tenor saxophone section’ sound has been used for the chords.

These performances confirm that a digital instrument not only convincingly reproduces the many reed combinations and timbral colours of the acoustic accordion, but also is equally able to achieve a similar degree of dynamic expression. The potential to enhance performance through the selection of a non-reeded bass sound promotes the use of a digital instrument in this context.

Context 4: Where a digital accordion is used solely as a MIDI controller for recording\textsuperscript{158}

Guiding criteria:

\begin{itemize}
  \item the sounds selected can be controlled in a stylistic manner using the bellows
  \item the sounds of specific instruments have realistic timbral qualities
  \item the range and orientation of the accordion keyboard suits the music being played
\end{itemize}

\textsuperscript{158} For reasons cited earlier, a proper investigation of the use of a digital accordion as a live controller is beyond the scope of this current study, and therefore this context is restricted to studio-based recording.
A likely fault in realistically simulating the sounds of acoustic instruments using a keyboard controller (in this instance, a piano accordion) is that, while a credible sound may be used, the performance lacks realism due to the manner in which a keyboard controls and shapes the sounds – specifically, the variation of dynamics using finger velocity. This technique is at odds with the techniques of wind players for example, who use breath control for musical expression. One might argue that the accordion, through the use of bellows, more closely replicates the sound production of acoustic wind instruments than a piano-style keyboard, and consequently is more suitable for the expressive control of synthesized sounds. Conversely, piano and organ sounds that are not shaped by the flow of air may be better controlled using finger velocity rather than the accordion bellows, and therefore a standard MIDI keyboard.

To exemplify the potential of the digital accordion to control idiomatically certain sounds, I have recorded the well-known oboe solo from *The Mission, Gabriel’s Oboe* (CD-3: Tr. 8).\textsuperscript{159} Given that this is a studio-based project, an external sound module has been used for sounds that are not internally available on the digital accordion. The recording has been made without dynamic effects or editing dynamics; what is heard was played in real-time, and dynamically shaped using only the accordion bellows. This means of expressive control, together with attention to phrasing in the style of an oboist has resulted in a performance that to a large degree replicates the musical qualities of a performance using acoustic instruments.

By way of contrast, the recording of the first movement of Elgar’s *Serenade for Strings, Op. 20* (CD-3: Tr. 9)\textsuperscript{160} promotes the use of the bellows for the control of string sounds. The limited range of the accordion keyboard has been overcome by transposing bass and ‘cello


sounds on the external module. Aside from considerations of expressive control, given that a single-line instrument plays each part in the original score, there is no requirement for a piano-style keyboard controller that can be played by two hands, although clearly if piano music were being recorded this may well be necessary.

The *allegro piacevole*\(^{161}\) of the first movement is characterised by a wide dynamic range and expressive swells, characteristics that describe much traditional accordion music. It is an intuitive application of playing technique on the accordionist’s part to control expression with the bellows, rather than attempting to do so using finger velocity or a foot operated volume pedal. Bellows movement in a way imitates the movement of a bow; ‘stopping’ the bellows is akin to a *martelé*\(^{162}\) bow stroke, and accenting using the bellows creates sforzandi and other articulations. An increase or decrease in bellows pressure can be used to achieve gradual crescendi and diminuendi in the manner of a string player. Care is required in manipulating the bellows so as to avoid exaggerating sforzandi and other accents, and some pre-planning of bellows direction is needed where long, unbroken phrases or extended crescendi and diminuendi are required. In addition, I observed that, in order to begin phrases smoothly, starting the bellows movement before depressing the key achieved a musical result. This ‘pre-emptive’ movement is not typically part of an acoustic playing technique. Notwithstanding the refinements to bellows technique that are needed for this performance context, this performance demonstrates that a digital accordion is well suited for the control of electronic string sounds.

\(^{161}\) Fast or lively, pleasant, agreeable
\(^{162}\) *Martelé* is a form of bow stroke where the bow is started under pressure, moved rapidly, and then stopped or released in order to produce a short gap between notes.
Concluding Comments

There are two recurring themes in the criteria listed in this chapter to guide the use of a digital instrument: the timbral quality of sounds, be they reeded or non-reeded, and the degree to which the accordion bellows are suitable as an expressive controller for these sounds. The assertion that a digital instrument reproduces reeded sounds faithfully is well supported in the recordings that have been presented with this exegesis, and I suggest that the non-reeded sounds that have been used in the bass are similarly convincing. Of some concern is the use of non-reeded sounds in the right hand part.

It is the right hand part, or treble register of the instrument that conveys most of the melodic material, and goes some way towards presenting a matched sonic and visual aesthetic for audiences. Even though it is technically possible to produce non-reeded sounds with a digital accordion, the use or overuse of these sounds calls into question the validity of using an accordion as the instrumental controller. This is particularly true of instances where an alternative keyboard controller could serve equally well. The acoustic accordion has such a distinct visual and sonic identity that when other electronic sounds are produced using a digital instrument, at some point the instrument ceases to ‘be’ an accordion, and becomes something else – a MIDI controller perhaps. While this changed identity has no aesthetic relevance in recording projects, in live performance it is potentially damaging, affecting the credibility of the accordion as a serious instrument in its own right – particularly where traditional repertoire is presented.

Despite experimenting with a range of internal and external sounds in the earlier stages of this project, the performances that are associated with this chapter (excluding those where the
accordion is used specifically as a MIDI controller) rely primarily on the use of reeded accordion sounds for the purpose of maintaining the identity of the acoustic accordion. Other sounds are used to enhance rather than replace the accordion reeds, and it is this type of use in live performance that I suggest is the most valid use of a digital accordion as an instrument in its own right, promoting the traditional repertoire and playing style of the original instrument with the aid of complimentary modern technologies.

The other criterion that is common to a number of the performance contexts presented is the suitability of the accordion bellows for the expressive control of non-reeded sounds. I have shown that bellows control is advantageous in certain instances, but in others may actually be detrimental. It is therefore not correct to assert that bellows are the most expressive control device for all sounds, and consequently their use does not immediately validate the use of a digital instrument. Rather, it is the performance context itself that determines the choice of instrument, that choice being informed by a clear understanding of the technical and aesthetic attributes of both acoustic and digital accordions.
CHAPTER 4

Conclusion

At the heart of this project has been the desire to explore various performance contexts using a digital piano accordion; to identify and capitalise on the unique characteristics of the instrument, and to demonstrate ways in which, through the use of modern technology, the accordion might find a place in contemporary popular music-making. This has involved not only careful examination of relevant hardware and software, but also the analysis and documentation of compositional and playing techniques. The future of the digital accordion relies on players, composers and arrangers, all of whom must be informed of the possibilities that arise through the availability of this contemporary instrument.

Research findings from the activities reported in Chapter 1 support the primacy of sound in establishing and or confirming the identity of the digital instrument, and in determining the degree to which the digital instrument might serve as a replacement for an acoustic accordion. In this section, sound specifically refers to the idiomatic reeded tones of the piano accordion, and in particular the reproduction of these reeded tones by the digital instrument.

I have endeavoured to present the digital accordion as a credible concert instrument, and although there are tactile differences that distinguish acoustic and digital instruments, my performances using the V-Accordion demonstrate that it is possible to digitally reproduce the sounds of accordion reeds to the extent that the facsimile is difficult to distinguish from the acoustic instrument. There are, however, aspects of the digital accordion that do not replicate its acoustic counterpart, for example the ‘feel’ of the bellows, and the spatial characteristics
of the sound that is heard by player and audience. I have explained ways in which these can be overcome, and suggest that these should not be seen as significant criticisms that call into question the use of the instrument. Research findings demonstrated that, as a direct replacement for an acoustic accordion, the use of a digital instrument is viable in performance, and that the wide variety of reeded sounds reproducible by a single digital accordion allow for a realistic sonic approach to the performance of culturally specific music, an approach that otherwise would require multiple acoustic instruments.

Expert performance on the digital accordion relies on a well-established acoustic playing technique, and, more importantly, an understanding of the relationship between playing techniques and musical outcomes in order to inform the refinement of technique needed to achieve comparable outcomes using a digital instrument. The digital instrument, rather than ameliorate the technical demands of acoustic accordion performance, requires greater sophistication in playing technique to produce a refined performance.

The digital accordion aids the enhanced performance of traditional repertoire in two main ways: by compensating for some of the weaknesses of the acoustic instrument, and by expanding the range of sounds available to the player. Better balance and separation between the bass and treble registers is possible, and in commercial applications an accordionist can fulfil the roles of both ‘bass’ and ‘keyboard’ player. I have demonstrated in a number of works that through the use of a digital instrument and non-reeded bass sounds it is possible to create the impression of two instruments controlled by a single device. The use of a digital instrument in this way may result in increased opportunities for live performance, thus promoting the instrument without obscuring its identity. Non-reeded sounds might then be used to enhance acoustic ‘style’ performance, rather than cultivate entirely new performance
contexts. When reeded and non-reeded sounds are judiciously combined, a contemporary approach to the performance of the stradella accordion repertory is possible, the inclusion of non-reeded sounds in the programming of the digital instrument further extending the range of performance contexts available to the accordionist.

Compliance with the MIDI protocol allows the instrument to exceed its programming by assuming the new identity of controller, an identity which is not formed by the reeded sounds of the acoustic instrument. In the production or recording environment I have provided compelling evidence in favour of using a digital instrument as a controller for external sounds. It is a unique MIDI controller by virtue of the expressive control afforded by the bellows, suiting the manipulation of synthetic instrumental sounds that are typically shaped by breath control or bow movement, or sounds where dynamics are shaped after a note has been sounded. By recording electronic or sampled instrumental sounds in real-time as audio rather than MIDI data, there is the added benefit of a reduction in the amount of editing typically required to achieve the sense that track has been actually played by an acoustic instrument.

The acoustic accordion has obvious limitations, most notably in respect of the available timbral palette. At a time where it seems that the majority of commercial musical performance is driven by the use of technology, it is perhaps understandable that an instrument that produces sounds by causing reeds to vibrate using bellows has lost the mainstream appeal it enjoyed during the first part of the twentieth century. However merely providing access to an expanded palette of sounds does not necessarily make the accordion relevant today. While I have shown that the digital accordion is indeed useful as a MIDI controller, such use ignores those characteristics that give the instrument its musical identity.
In fact, if the instrument becomes little more than a control device for live performance, it is likely that its identity, so dependent on reeded sounds, is actually lost.

In live performance, a holistic audience experience is formed by both the visual and sonic components of the concert. Viable performance contexts for electronic instruments are thus determined not only by what is heard, but to some extent also by what is seen. I have demonstrated that, by maintaining the visual elements of acoustic performance such that the ‘nature’ of the instrument (digital or acoustic) is transparent, there is a resultant focus on the music, rather than the instrument used to present it.

Based on the contextual information and discussion of performance contexts I have provided, some attention by the designers of the Roland V-Accordion is required to address issues of clarity when executing certain passages using reeded sounds in the treble register – particularly full chord glissandi. Similarly, the manner in which reeded sounds decay and the relationship of this decay to changing bellows direction requires further development. There is also the need to improve the design of the instrument in terms of developing a flexible, programmable user interface that affords the player localized, real-time control of external devices in live performance, and thus overcomes the reliance on internal sounds.

The resolution of these issues is critical to progressing the use of the instrument away from replicating an acoustic accordion, and building on its strengths as a MIDI controller in live performance contexts. Should development of the instrument proceed in this manner, there is significant scope for further research which considers the digital accordion as not only a replacement for the acoustic accordion, but potentially as a unique controller for electronic sounds.
I am of the belief that a number of valid contexts for performance have emerged from my research, and that the understandings from this project establish a strong foundation for further research into applications where the digital accordion serves purely as a MIDI controller. The study has generated data that informs the future technical development of the digital accordion, including suggested modifications to design that potentially lead to establishing a new identity as ‘accordion controller’; one that is not reliant on the use of reeded sounds in performance.

It is also my hope that this project assists in raising the profile of the piano accordion, and reinvigorates interest in traditional accordion repertoire and playing techniques, without obscuring those attributes of identity that validate and distinguish accordion performance.
APPENDIX 1: Audio, Audio-Visual Recordings and Track Lists

The following audio-visual recordings (DVD-1, DVD-2) and audio-only recordings (CD-1 – CD-7) document my development as an accordionist since 2010. This material includes material performed in support of research questions, footage of recitals given as part of this project, recorded musical examples to accompany the text, together with various other performance activities.

Unless otherwise noted, all recordings have been made using a Roland FR5 V-Accordion. The author has performed the accordion parts of all recordings included with this exegesis.

CD-1: Solo Repertoire by Deiro, Frosini, Magnante
(Research material for Chapter 1)

Track Listing
1. Deiro Rag Guido Deiro
2. Kismet Foxtrot Guido Deiro
3. Variety Polka Guido Deiro
4. My Florence Waltz Guido Deiro
5. Sharpshooter’s March Guido Deiro
6. La Mariposita Pietro Frosini
7. Florette Pietro Frosini
8. Bubbles Pietro Frosini
9. Accordiana Charles Magnante
10. Tea for Two Vincent Youmans, Arr. Magnante
11. Accordion Boogie Charles Magnante
CD-2: Selected Ensemble Repertoire
(Research material for Chapter 2)

Track Listing
1. Nine Blind Mice (accordion duet) Traditional, Arr. Leo Mazzei
2. Pietro’s Return (accordion band – 4 parts) Pietro Deiro
3. Aquarelli Cubani Fancelli
4. All of Me Marks and Simons
5. Love’s Theme/Too Good to Be True White, Crewe and Gaudio
6. In the Mood Garland and Razaf
7. Copacabana Feldman, Manilow and Sussman, Arr. Voltz
8. Bugler’s Holiday Anderson
   Monti, Arranged B D Voltz
10. The Look of Love Bacharach and David
CD-3: Refining Performance Practice using the Digital Accordion
(Research material for Chapter 3)

Track Listing

1. The Carnival of Venice
   Trad, Arr. Pietro Frosini
2. “Asleep”, Five Tango Sensations: Bandoneon and String Quartet
   Piazzolla, Trans. Voltz
3. Tranquillo Symphonic Overture
   Pietro Deiro
4. Gypsy Jazz
   Trad, Arr. Mindie Cere
5. 10Km al Finestrino
   L. Fancelli, Adapt. Voltz
6. Twilight Time
   Ram, Nevins and Dunn, Arr. Camini
7. Jazz in Venice
   Trad, Arr. Mindie Cere
8. Gabriel’s Oboe from “The Mission”
   Morricone, Arr. Robert Longfield
9. Serenade for Strings in E minor, Opus 20, Mv. 1
   Elgar, Adapt. Voltz
10. Dizzy Fingers
    Confrey, Arr. James Matte, Adapt. Voltz
CD-4: Audio Examples to Accompany Chapters 1 - 3

Track Listing
1. Introduction - Pietro Frosini, "Bubbles"
2. Fingertip Style - Youmans/Arr. Magnante, "Tea for Two"
3. Detached Passage - Youmans/Arr. Magnante, "Tea for Two"
4. Legato Phrasing - Pietro Frosini, "Florette"
5. Detached Legato Phrasing - Pietro Frosini, "Florette"
6. Repeated Octaves - Pietro Frosini, "La Mariposita"
7. Repeated Chords - Pietro Frosini, "La Mariposita"
8. Rotary Movement – Di Capua/Gaviani, "Sunny Skies"
9. Alternating Bass - Guido Deiro, "Deiro Rag"
10. Sustained Bass - Guido Deiro, "My Florence Waltz"
12. Staccato Bass - Pietro Frosini, "La Mariposita"
14. Accents with Bellows - Palmer-Hughes, "P. H. Rhumba"
15. Tango (as written) - Rodriguez, "La Cumparsita"
16. Tango (as played) - Rodriguez, "La Cumparsita"
17. Common Accents - Guido Deiro, "Variety Polka"
18. Stopping Bellows - Pietro Frosini, "Florette"
19. Bellows Shake (as played) - Pietro Frosini, "Jolly Caballero"
21. Dry Tuning - Strauss, "Die Fledermaus" (excerpt)
22. Scottish Musette Tuning, "The Mason's Apron (Trad.)"
23. French Musette tuning - Hubert Giraud, "Under Paris Skies"
24. “Budget Direct” Jingle
25. Por Una Cabeza
27. Melodic Harmonisation – “Nine Blind Mice”

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163 reproduced courtesy of Pinkhouse Productions (2010)
164 reproduced from The Ten Tenors: Tenology (2005), released by Rhino/WEA
CD-5: Audio Examples to Accompany Appendix 4

Track Listing
2. Olive Blossoms – Pietro Frosini
6. Jolly Caballero – Pietro Frosini
7. Simple bass and chords
8. Alternating bass: tonic – dominant
9. Adding the dominant 7th and changing harmony
10. Adding passing notes
11. Pattern in common time
12. Single bass note and repeated chords
13. Alternating bass and bass soli
14. Waltz with alternating bass
15. Waltz with rhythmic variation
16. 4 beat rock pattern
17. Bossanova
18. Beguine
19. Tango
20. Rhumba
21. Samba
22. Alternating bass and chord style
23. Walking (blues) bass line and chords
24. Jazz Waltz - Alternating bass and chords
25. Bass solo with rhythmic chords
26. Treble melody with chordal accompaniment
27. Treble melody with rhythmic chordal accompaniment
CD-6: “Around the World” with the Accordion

**Track Listing**

1. **Eightsome Reels**  
   Trad., Arr. Voltz
2. **Finiculi Finicula**  
   Luigi Denza, Arr. Voltz
3. **Torna a Surriento**  
   Curtis, Arr. W Palmer & W Hughes
4. **Dark Eyes**  
   Trad., Arr. W Palmer & W Hughes
5. **Espana Cani**  
   Marquina, Arr. Magnante
6. **Pigalle**  
   Ulmer, Arr. Marocco
7. **Zorba the Greek**  
   Theodorakis, Arr. Voltz
8. **Libertango**  
   Piazzolla, Arr. Marocco
9. **Adios Nonino**  
   Piazzolla, Arr. Marocco
10. **Tico Tico**  
    Agre, Arr. Pietro Deiro
CD-7: Additional Recordings

Track Listing

1. Czardas: A Concert Arrangement for Accordion and Orchestra – Acoustic Accordion
   Monti, Arr. Voltz
   accordion – Bradley Voltz
   The Third Queensland Youth Orchestra
   conductor – Bruce Davidson

   Five Tango Sensations: Bandoneon and String Quartet  Piazzolla
   2. Nr. 1: “Asleep”
   3. Nr. 2: “Loving”
   4. Nr. 3: “Anxiety”
   5. Nr. 4: “Despertar”
   6. Nr. 5: “Fear”
      accordion – Bradley Voltz
      violin I – Wayne Brennan
      violin II – Bruce Davidson
      viola – John Curro AM MBE
      ‘cello – Daniel Curro

   7. I Dreamed a Dream, from “Les Misérables”  Claude-Michel Schönberg
      soprano – Lisa Bell
      accordion – Bradley Voltz

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165 Of the five tangos in this set, “Despertar” (“to awake” in Spanish) is the only without an English title.
166 produced and arranged by Garry Smith with string arrangement by Alan Slater (May 2011)
**DVD-1: PhD Recital**  
Conservatorium of Music, Tasmania, September 2011

**Programme:**

*Solo Accordion*

1. Sharpshooters March  
   Guido Deiro
2. Florette  
   Pietro Frosini
3. Czardas  
   Monti, Arr. Voltz

*Quartet – Vocal, Accordion, Guitar and Percussion*

4. Summertime  
   Gershwin
5. This Masquerade  
   Russell
6. Body and Soul  
   Green
7. One Note Samba  
   Jobim

*Duo – Accordion and Vocal*

8. Cuts Both Ways  
   Estefan

*Quartet – Vocal, Accordion, Guitar and Percussion*

9. Estefan: Turn the Beat Around  
   Jackson

*accordion – Bradley Voltz*  
*percussion – Adam Manning*  
*guitar – Glen Hodges*  
*vocal – Selena Bedford*
DVD-2: Final Recital for Examination
Conservatorium of Music, Tasmania, September 2012

Programme:

1. Dance of the Hours
   Ponchielli, Arr. Galla-Rini
2. Deiro Rag
   Guido Deiro
3. My Florence Waltz
   Guido Deiro
4. Sharpshooter’s March
   Guido Deiro
5. La Mariposita
   Pietro Frosini
6. F lorette
   Pietro Frosini
7. Bubbles
   Pietro Frosini
8. Tea for Two
   Youmans, Arr. Magnante
9. Accordiana
   Charles Magnante
10. In the Mood
    Garland and Razaf
11. Copacabana
    Feldman, Manilow et al.
12. Twilight Time
    Ram, Nevins and Dunn, Arr. Camini
13. Tranquillo Overture
    Pietro Deiro
14. Jazz in Venice
    Trad, Arr. Mindie Cere
15. The Carnival of Venice
    Trad, Arr. Pietro Frosini
APPENDIX 2: Official Notation for the Standard Accordion, as approved by the American Accordionists’ Association (A.A.A.), April 4th 1938. 

(i) The right hand part is written in the treble clef.

(ii) The left hand part is written in the bass clef.

(iii) Bass notes are written in the position shown below, range one octave:

![Bass notes notation example]

(iv) Chordal notes played using the left hand are indicated by the tonic note of the chord, and written in the position shown below, range one octave:

![Chordal notes notation example]

The third line (D) in the bass clef may be used for either bass or chordal notes. Notes written above the third line are chordal notes; notes written below are bass notes.

(v) A single letter, indicating the chord type, is placed above the chordal note. The four types of chords used on the stradella accordion are indicated using the following abbreviations: M – major, m – minor, 7 – dominant 7th, d – diminished 7th. Chordal indications are only given where there is a change of chord.

![Chordal notes notation example with letters]

(vi) A solo passage in the bass with a range of more than an octave may be written on any part of the staff, and is indicated by the words “Bass Solo”, abbreviated B.S. The bass solo continues until a chordal note is indicated.

(vii) A dash beneath a bass note (sostenuto) indicates that the counter bass note should be used. Where a sostenuto playing style is desired, the words “sostenuto” or “sostenuto il basso” are used.

(viii) Bellows direction, if given, is indicated:

Open

Close

APPENDIX 3: Bass Systems

Stradella

(i) The standard instrument employs 120 bass buttons, arranged in 20 rows of 6 buttons. Starting from the bellows side of the bass buttons, rows are named counter-bass, fundamental, major, minor, seventh, diminished.

(ii) The counter-bass notes are a major 3rd higher than the fundamental notes in the same row.

(iii) The 5th is omitted from 7th chords, thereby allowing 7th chords with an altered 5th to be played in the treble together with a dominant 7th chord in the bass.

(iv) The diagram below illustrates the arrangement of bass and chordal notes on the stradella instrument. Whilst notation typically employs key signatures of up to seven sharps or flats, for consistency this diagram is labelled such that “flat” keys are to the left of “C” (the middle of the bass buttons), and “sharp” keys are to the right. In practice, buttons at the extremities are seldom played.

Figure 33: Stradella Bass Layout

Free Bass

Free bass systems fall into two common categories; chromatic systems similar in layout to the arrangement of the treble buttons on a chromatic button accordion, and quint free bass – laid out in 5ths as for a stradella instrument. For the purposes of this project, only the quint
system is explained, since it is this system that will be most easily employed by players of *stradella* instruments.

In the *quint* system the fundamental and counter-bass rows are duplicated twice, each an octave higher moving towards the bass strap. The primary advantage of using a free bass system is that a range of almost three octaves is available, and that chord types and voicings are not restricted to those predetermined by the design of the *stradella* bass system.
APPENDIX 4: Treble and Bass Registration, Standard Accordion

A standard 120 bass stradella accordion employs four sets of treble reeds with eleven available registrations, and 5 sets of bass reeds with up to seven available registrations depending on the instrument.

In the treble there is a single set of low reeds, two sets of middle reeds usually slightly detuned, and a single set of high reeds. The five bass reed sets are described as bass, bassetti, low harmony, middle harmony, and high harmony. Pressing couplers on either the treble or bass keyboards changes registration.

Although there may be five sets of bass reeds, some instruments have fewer than seven couplers, thereby limiting the number of available bass registrations. Unlike treble registrations, bass registrations are not given specific names. Note that fundamental and counter-basses may sound all five sets of reeds, whilst chords sound only the high, middle and low harmony reed sets.

In both the treble and bass, the registrations using all reed sets are known as master, shown on the score by the symbol “R”. Registrations that exclude low reed sets are generically known as musette, shown on the score by the symbol “*”.

Figure 34: Treble Registrations

Bassoon
### Figure 35: Bass Registrations

<table>
<thead>
<tr>
<th>Fundamentals and Counter-basses</th>
<th>Chords</th>
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<td><img src="image18" alt="Chords" /></td>
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APPENDIX 5: Idiomatic Writing Styles - A Guide for Composers and Arrangers

This appendix provides a reference for composers and arrangers who seek to write for the accordion. Various common writing techniques are presented in the form of a series of representative excerpts from the standard repertoire. Audio recordings accompany each excerpt. I have elected to use an acoustic instrument for these recordings in order that the sound is completely authentic. A selection of common registrations have been used for the treble register excerpts.

The Treble Register (right hand)

Chord Melody

Figure 36: W.C. Handy, Arr. Charles Magnante, St Louis Blues,\textsuperscript{168} bars 13-23 (CD-5: Tr. 1)

(master reed set)

Melody and Accompaniment

**Figure 37:** Pietro Frosini, *Olive Blossoms,*\(^{169}\) bars 101-116 (CD-5: Tr. 2)

(violin reed set)

Melody and Countermelody

**Figure 38:** Goodman, Webb & Sampson, Arr. Charles Magnante, *Stompin’ at the Savoy,*\(^{170}\) bars 4-11 (CD-5: Tr. 3)

(bassoon reed)

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Melodic Decoration and the Appoggiatura

Figure 39: Koehler and Arlen, Arr. Anthony Galla-Rini, *Stormy Weather*,\textsuperscript{171} bars 9-15 (CD-5: Tr. 4)

(bandoneon reed set)

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure39.png}
\end{figure}

Arpeggiated Figuration

Figure 40: V. Arienzo, Arr. Pietro Deiro, *Migliavacca*,\textsuperscript{172} bars 21-36 (CD-5: Tr. 5)

(musette reed set)

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure40.png}
\end{figure}


Bravura Passage-Playing

Figure 41: Pietro Frosini, *Jolly Caballero*. Bars 17-31 (CD-5: Tr. 6)

(master reed set)

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The Bass Register (left hand): Standard Bass and Chord Patterns

2 beat patterns

Figure 42: Simple bass and chords (CD-5: Tr. 7)

Figure 43: Alternating bass: tonic – dominant (CD-5: Tr. 8)

Figure 44: Adding the dominant 7th and changing harmony (CD-5: Tr. 9)

Figure 45: Adding passing notes (CD-5: Tr. 10)

4 beat patterns

Figure 46: Pattern in common time (CD-5: Tr. 11)
Compound time

Figure 47: Single bass note and repeated chords (CD-5: Tr. 12)

![Musical notation for single bass note and repeated chords]

Figure 48: Alternating bass and bass soli (CD-5: Tr. 13)

![Musical notation for alternating bass and bass soli]

Waltz

Figure 49: Waltz with alternating bass (CD-5: Tr. 14)

![Musical notation for waltz with alternating bass]

Figure 50: Waltz with rhythmic variation (CD-5: Tr. 15)

![Musical notation for waltz with rhythmic variation]

Rock

Figure 51: 4 beat rock pattern (CD-5: Tr. 16)

![Musical notation for 4 beat rock pattern]
Latin Styles

Figure 52: Bossanova (CD-5: Tr. 17)

Figure 53: Beguine (CD-5: Tr. 18)

Figure 54: Tango (CD-5: Tr. 19)

Figure 55: Rhumba (CD-5: Tr. 20)

Figure 56: Samba (CD-5: Tr. 21)
Swing Styles

Figure 57: Alternating bass and chord style (CD-5: Tr. 22)

Figure 58: Walking (blues) bass line and chords (CD-5: Tr. 23)

Figure 59: Jazz Waltz - Alternating bass and chords (CD-5: Tr. 24)

Melody (bass solo)

Figure 60: Bass solo with rhythmic chords (CD-5: Tr. 25)
Chordal Accompaniment

**Figure 61:** Treble melody with chordal accompaniment (CD-5: Tr. 26)

```
Slowly
```

**Figure 62:** Treble melody with rhythmic chordal accompaniment (CD-5: Tr. 27)

```
In 2.
```

Sample Analysis

*Sunny Skies*[^174] is typical of the style of arrangements written for concert performance by accordionists. It is based on the Neapolitan song *O Sole Mio*, written by Eduardo di Capua in 1898.


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This arrangement by Frank Gaviani exemplifies many of the previously discussed techniques used when writing for accordion. Starting with a bold statement based on the principal motif of the chorus, the work evolves through a series of variations, the first of which is a transparent statement of the verse from the original song, harmonised in full chords in the second part. Descending arpeggiated chords follow to mark the first statement of the chorus material, this section ornamented by jazz flavours in the form of chord melodies and melodic decoration. A robust Paso Doble in C major hints at the beginnings of a dramatic ending, heightened by an extended section featuring the bellows shake. Virtuosic bravura passage playing constantly builds momentum until the final idiomatic flourish of the arrangement is executed.

The following score is annotated to highlight selected writing techniques, and a recording of the complete work is included on CD-5, Tr. 28.
Figure 64: Di Capua, Arr. Gaviani - Sunny Skies, (CD-5: Tr. 28)

Sunny Skies: A concertized version of "O Sole Mio"
B. Molto moderato

Simple alternating bass style provides harmonic and rhythmic stability, with bass solo reinforcing and adding harmonic interest to the right hand part.

C. Allegro (quasi Paso Doble)

Chordal accompaniment for rhythmic interest used during sustained melodic notes.

Molto moderato

“pizzicato” chords allow the accented melody note to better project.

Polka style alternating bass
idiomatic dramatic flourish to end the work
APPENDIX 6: Internal Sounds and MIDI Assignments: Roland FR-5 V-Accordion

**Orchestral Treble Sounds**

<table>
<thead>
<tr>
<th>Part</th>
<th>Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>Trombone</td>
</tr>
<tr>
<td>1B</td>
<td>Trumpet</td>
</tr>
<tr>
<td>2A</td>
<td>Tenor Sax</td>
</tr>
<tr>
<td>2B</td>
<td>Alto Sax</td>
</tr>
<tr>
<td>3A</td>
<td>Clarinet</td>
</tr>
<tr>
<td>3B</td>
<td>Oboe</td>
</tr>
<tr>
<td>4A</td>
<td>Harmonica</td>
</tr>
<tr>
<td>4B</td>
<td>Muted Harmonica</td>
</tr>
<tr>
<td>5A</td>
<td>Violin</td>
</tr>
<tr>
<td>5B</td>
<td>Pizzicato (strings)</td>
</tr>
<tr>
<td>6A</td>
<td>Flute</td>
</tr>
<tr>
<td>6B</td>
<td>Pan Flute</td>
</tr>
<tr>
<td>7A</td>
<td>Highland (bagpipe sound with drone)</td>
</tr>
<tr>
<td>7B</td>
<td>Zampogna (bagpipe sound with drone)</td>
</tr>
<tr>
<td>8A</td>
<td>Percussion Organ</td>
</tr>
<tr>
<td>8B</td>
<td>Jazz Organ</td>
</tr>
<tr>
<td>9A</td>
<td>Rotary Organ</td>
</tr>
<tr>
<td>9B</td>
<td>Tremolo Organ</td>
</tr>
<tr>
<td>10</td>
<td>Scat Voice</td>
</tr>
<tr>
<td>11</td>
<td>Mandolin</td>
</tr>
<tr>
<td>12</td>
<td>Acoustic Guitar</td>
</tr>
<tr>
<td>13</td>
<td>Acoustic Piano</td>
</tr>
</tbody>
</table>

**Orchestral Bass Sounds**

<table>
<thead>
<tr>
<th>Part</th>
<th>Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acoustic</td>
</tr>
<tr>
<td>2</td>
<td>Bowed</td>
</tr>
<tr>
<td>3</td>
<td>Fingered</td>
</tr>
<tr>
<td>4</td>
<td>Fretless</td>
</tr>
<tr>
<td>5</td>
<td>Picked</td>
</tr>
<tr>
<td>6</td>
<td>Tuba</td>
</tr>
<tr>
<td>7</td>
<td>Tuba Mix</td>
</tr>
</tbody>
</table>

**Orchestral Chord Sounds**

<table>
<thead>
<tr>
<th>Part</th>
<th>Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trombone</td>
</tr>
<tr>
<td>2</td>
<td>Tenor Sax</td>
</tr>
<tr>
<td>3</td>
<td>Clarinet</td>
</tr>
<tr>
<td>4</td>
<td>Tremolo Organ</td>
</tr>
<tr>
<td>5</td>
<td>Voice</td>
</tr>
<tr>
<td>6</td>
<td>Acoustic Guitar</td>
</tr>
<tr>
<td>7</td>
<td>Acoustic Piano</td>
</tr>
</tbody>
</table>

**Orchestral Free-bass Sounds**

<table>
<thead>
<tr>
<th>Part</th>
<th>Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trombone</td>
</tr>
<tr>
<td>2</td>
<td>Clarinet</td>
</tr>
<tr>
<td>3</td>
<td>Oboe</td>
</tr>
<tr>
<td>4</td>
<td>Flute</td>
</tr>
<tr>
<td>5</td>
<td>Percussion Organ</td>
</tr>
<tr>
<td>6</td>
<td>Acoustic Guitar</td>
</tr>
<tr>
<td>7</td>
<td>Acoustic Piano</td>
</tr>
</tbody>
</table>

**MIDI Channel Assignments**

<table>
<thead>
<tr>
<th>Part</th>
<th>Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treble (reed sounds)</td>
<td>1</td>
</tr>
<tr>
<td>Bass/Free Bass (reed sounds)</td>
<td>2</td>
</tr>
<tr>
<td>Chord (reed sounds)</td>
<td>3</td>
</tr>
<tr>
<td>Treble (internal synth sounds)</td>
<td>4</td>
</tr>
<tr>
<td>Bass (internal synth sounds)</td>
<td>5</td>
</tr>
<tr>
<td>Chord (internal synth sounds)</td>
<td>6</td>
</tr>
<tr>
<td>Free Bass (internal synth sounds)</td>
<td>7</td>
</tr>
<tr>
<td>[selection of internal sets and program changes]</td>
<td>13</td>
</tr>
</tbody>
</table>

This factory configuration allows the instrument to function as a “virtual” accordion using internal reed sounds, as a multi-timbral synthesizer using the internal library of sounds, and as a controller for external sound libraries, either software or hardware based.
APPENDIX 7: Monti, Czardas for Accordion and Orchestra, Arranged B D Voltz

CZARDAS
Accordion and Orchestra

Largo
Flutes I, II

Oboes I, II

Clarinets I, II in B

Horns I, II in F

Trumpets I, II in B

Trombones

Tuba

Timpani
(D,G,A)

Violin

Violin II

Violin III

Viola

Violoncello

Contrabass

Andante Monti/Voltz

Andante

Largo

Accordion

Solo

Metronome

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Allegro vivace

Vln. I
Vln. II
Vln. III
Vla.
Vc.
Cb.
Acc.
Hn.
Tpt.
Tbn.
Timp.
E Molto meno mosso


Frosini, Pietro. “Amoureuse,” (1913). YouTube video,

Frosini, Pietro. Pietro Frosini Plays Jolly Caballero and 23 Other Hits, 1920-1930. CD,
Norild Records, NCD253, n.d.

Frosini, Pietro. Rhapsody No 3 in A minor (1941). YouTube video,
http://www.youtube.com/watch?v=grI7z2IUcm0 (accessed February 12, 2011).


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Binder, Daniel A. “A Formal and Stylistic Analysis of Selected Compositions for Solo Accordion with Accompanying Ensembles by Twentieth-Century American Composers with Implications of their Impact upon the Place of Accordion in the World of Serious Music.” PhD diss., Ball State University, 1981.


