Melting the Boundaries:
The Integration of Ethnic Instruments into Western Art Music

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Summary

This dissertation presents eight original musical compositions written for seven different ethnic instruments. The instruments are: the Native American flute, the Irish uilleann pipes, the Persian tar, the Persian santoor, the Chinese xiao, and the Irish low D and high D tin whistles. The instruments are incorporated into ensembles with western art music instruments, in both soloistic roles and as equal members in an ensemble.

The manner of incorporation reflects a cross-cultural approach to composition, one which demonstrates a reciprocal influence of cultures and genres, thereby creating new modes of expression for both ethnic and western art music musicians. Through cultural exchange, new soundscapes are created.

Respectful integration of the ethnic instruments into western art music ensembles requires an appreciation and understanding of their original contexts as a point of departure for further exploration and expansion of the repertoire for the instruments. Research was conducted on each of the instruments through the reading of authoritative texts, listening to traditional music as well as new compositions for the instruments, interviews with musicians, and personal experimentation on the instruments. A discussion of the history and tradition of each of the instruments is included.
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Sound Files

Compositions:

Hope
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Soft-spoken Power
Margaret Collins Stoop, Native American flute

Zephyr
Margaret Collins Stoop, xiao; Richard O’Donnell, suspended cymbal; Martin Johnson, cello

Cloud Shadows
Margaret Collins Stoop, all flutes

Glissade, first twenty bars
Lindsey Vincent, slide whistle; Margaret Collins Stoop, high D whistle

Glissade, cadenza
Margaret Collins Stoop, high D whistle

Bird Suite: Loons on the Lake
Margaret Collins Stoop, xiao

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Margaret Collins Stoop

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Margaret Collins Stoop
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Introduction

The exchange of knowledge between cultures is happening in a more meaningful way and at a more rapid pace than in earlier times. Increased familiarity with cultures outside our own results in enrichment, in whichever form it manifests. As artists, exposure to other cultures deepens and broadens our own creativity. As musicians, broadening awareness brings opportunities to incorporate new sounds into western art music.

The concept of ‘our music’ and ‘their music’ has been embedded in the late nineteenth century terms ‘music’ and ‘ethno music’, and the independence of the disciplines, musicology and ethnomusicology, has remained. The designation of two separate areas of study maintains the idea that western art music is the default frame of reference while non-western music is a variable. Whereas the distinctions ‘music’ and ‘ethno music’ have been institutionalised and survive in universities, a third categorisation, cross-cultural music, is seldom granted a separate area of study in institutional contexts, despite the fact that it is something practised by a majority of active composers and musicians.¹ For example, the ensembles, Constantinople and Silkroad, produce music with several different ethnic instruments within one ensemble. Citing their works as having a ‘musical language founded in difference’, the Silkroad collective seeks to answer the question, ‘What happens when strangers meet?’ The performance ensemble uses various instruments from along the Middle East to Southeast Asia, including the *pipa* (a Chinese

lute), the *duduk* (an Armenian double reed), and the *shakuhachi* (a Japanese bamboo transverse flute). The Dublin-based bands, Jiggy and Slow Moving Clouds, combine non-western instruments with contemporary Irish traditional instruments. Slow Moving Clouds incorporates stroh fiddle (an amplified violin with horns), *sansula* (a thumb piano fixed to a frame drum), and marxophone (a fretless dulcimer).² Jiggy performances have included the *bodhrán* (an Irish frame drum), the *uilleann* pipes (Irish bagpipes), the Irish flute and fiddle, and a variety of drums: *mridangam, dholak, konnakol, kanjira.*³,⁴

The above mentioned music groups may be categorised as ‘World’ music. Composer Luigi Irlandini notes that ‘World Music, understood as the global pop music genre that developed in Western countries during the late twentieth-century, is the realm where a scholar would most immediately look for new inter-cultural musical creations.’⁵ There are a great many western art music works written for ethnic instruments, though fewer than in World music. Contemporary art music composers who have written such works are Helmut Lachenmann (for shō, a Japanese reed instrument), Takemitsu Tōru (for shō), John Cage (for shō), Kevin Volans (for uilleann pipes), Unsuk Chin (for sheng, a Chinese mouth organ), Luigi Irlandini (for shakuhachi), and Christopher Keyes (for a variety of Chinese instruments, including the *xiao*, an end-blown flute; the *qin*, a seven-string zither; and the pipa).

In an article about Chinese music throughout the world, Frederick Lau writes ‘There

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is no automatic inherent connection between one’s ethnicity and one’s music’. This may be true, however, acknowledgement of historical and contemporary dominance of some cultures over others leads to the understanding that conditions for those who create cross-cultural music are asymmetrical. In a 2005 article critiquing recent works for the shō and the sheng, Christian Utz writes, ‘[T]he risk of falling into the trap of post-colonial hierarchies and uneven power relations is ever-present in most encounters between Western composers and Asian musicians, since the composer-performer relationship has not traditionally been a balanced dialogue.’ Utz, goes on to say, ‘However, the solution to this risk cannot be the avoidance of intercultural musical collaborations.’ (italics mine)⁶

For western art music composers and musicians in Europe and the United States, including myself, turning to cross-cultural music is a personal decision. For those outside those cultural regions, it is a social necessity, in order to be able to move in the field of the institutionally established music scene. This is particularly true in areas especially receptive of western art music, such as Asia and southeast Asia.⁷ Therefore, the inclusion of instruments from cultures outside our own must be done not only with respect, but with sensitivity. Rather than an appropriation of another tradition, a cultural exchange is to be sought.

This cross-cultural approach is reflected in my choice to compose for seven different ethnic musical instruments. As a PhD candidate in music composition, I have written eight works which incorporate the instruments and the techniques specific to them into

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ensembles with western orchestral instruments. The instruments are the Native American flute, the uilleann pipes, the *santoor* (a Persian dulcimer), the *tar* (a Persian lute), the *xiao* (a Chinese vertical flute), and the high and low D tin whistles. The inclusion of ethnic instruments in my compositions is a striving toward integration, in which the boundaries between the distinct genres are softened or dissolved. Both genres, western art music and the traditional, are augmented by expanding the scope of expression of the instruments beyond the expected.

It with understanding of and deep respect for the history and context of the ethnic instruments that new works for them were composed. Research on the associated genres afforded a point of departure from which to expand the repertoire of the instruments.
1.1

Research Overview

The scope of research presented in this dissertation is broad, as it reflects investigation of the history, traditions, and capabilities of each of the ethnic instruments included in my compositions, appreciating how its original context informs inclusion in and influence on a new setting. Expansion of the repertoire of the instruments beyond that which is idiomatic is sought, and the discovery of what is idiomatic to the instruments reveals that which is non-idiomatic.

My investigative approach to research was both academic and experiential. The various methods included visiting musical instrument museums, listening to many compositions which incorporate ethnic instruments, ranging from Bartók’s *Romanian Dances* to Jeff Wayne’s *Horsell and the Common Heat Ray*, and studying the various manners in which ethnic instruments take part in ensembles of western art music, what accommodations were made, and whether the instrumentalists perform within or beyond idiom.

A visit to the Musical Instrument Museum in Phoenix, Arizona was edifying and informative, and then personal experience and exposure led to the selection of which instruments to include in my compositions.

While listening to various compositions, I paid particular attention to the manner in which the instrument is incorporated into the ensemble and with what degree of integration. For example, the folk musicians performing Bartók’s *Romanian Dances*, as performed by
the Danubia Orchestra, appear as guest stars, performing unaltered folk tunes supported by a western orchestra.8 In her composition, *By and By*, Caroline Shaw combines a straightforward folk singing technique with a western art music string quartet, juxtaposing rather than integrating two genres.9 I observed that the same is true of *Grás agus Bás* by Donnacha Dennehy, in which a sean-nós singer sings within idiom supported by contemporary western art music.10

In addition, I attended numerous live performances of ethnic instruments, whether they were performed as part of an ensemble of western orchestral instruments or not. For example, I was invited to private rehearsals, participated in traditional music sessions in Dublin and New York, and went to premiere performances at the National Concert Hall and Whelan’s in Dublin. I played, experimented, and performed on five of the instruments, in order to explore range, timbre, tuning and capabilities for extended technique.

Composer Luigi Irlandini writes that there are two options for the composer who writes for ethnic instruments: either to work closely with an expert performer of that instrument, or to become involved with the instrument oneself. This involvement can occur in two non-mutually exclusive ways. The composer can become a performer of the instrument’s musical tradition or make original music with it.11

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In preparing to write the compositions in this portfolio, I took both approaches. I do not play the santoor, the tar, or the uilleann pipes. I consulted with Shahab and Shayan Coohe, master players of the santoor and tar respectively, and with Éamonn Galldubh, expert uilleann piper. The four other instruments for which I have written are all types of flutes. As an experienced western concert flutist, part of my research was to play the flutes myself, often performing for audiences around Dublin city centre. I played music from the traditional Native American, Chinese, and Irish repertoires, as well as music from many other genres. Experiments included switching musical genres, for instance by playing Irish or Hungarian tunes on the xiao, and Chinese tunes on the whistles. I also experimented in transferring extended techniques of the western concert flute to the ethnic flutes. The experiments had varying degrees of success, and it proved instructive to discover what worked and what didn’t.
1.2

Compositional Considerations

Prior to composing the works in this portfolio, two questions arose: When writing for ethnic instruments, are we extracting only the sound, or the culture as well? Is the instrument fundamentally changed if we divest it of its original context? The first question may in fact be rhetorical, as each composition demands an individual approach, and the level of integration and exchange will vary. Some works incorporate direct allusions to the traditional genre, while others have as a primary consideration the expansion of the instrument beyond idiom. This brings us to the second question, to which Irlandini has a response: the tendency to take ethnic instruments out of their original context and assimilate them into new styles of music gives the instruments what he calls a ‘re-significance’. Compositions for ethnic instruments which do not make direct reference to or incorporate idioms from the original context nonetheless celebrate the instruments through examination, appreciation, and exploration of their unique and defining features, with the dual goal of introducing the instrument to the milieu of western art music and expanding the repertoire of the instrument. Instruments which are specifically associated with sacred rituals, however, for example the shofar or the powwow drums, are not included in the compositions in this portfolio. The extraction of such instruments from their original context would dilute or obliterate a meaning too integral to the identity of the instrument.

Three considerations arose as well, the latter two falling under the broader scope of the first: the need to understand and appreciate the original context of the instrument, the fact that many ethnic instruments are not tuned to equal temperament, and the understanding that many ethnic musicians learn and perform music in manners different to western art musicians.

Appreciation and understanding of the original context of the instrument enables the composer to make informed compositional choices, whether or not direct allusion to the traditional genre is made. An understanding of the harmonic language and idiomatic embellishments brings knowledge of the mechanics and capabilities of the instrument. If expansion of the instrument through non-idiomatic writing is sought, appreciation of the original context serves as a respectful point of departure for exploration. Irlandini writes that if a composer wishes to incorporate an ethnic instrument in a culturally responsible way, the composer must honour the performance tradition of that instrument. He explains:

It means it will be studied, known, assimilated. Acculturation. Therefore, it’s not only important that the composer has the conditions to acquire first-hand experience with a chosen non-Western instrument, but it is also fundamental for the development of a composition based on instrumental research. The ‘collateral advantage’ of this acquisition and assimilation is that the acculturated musician will be giving continuation to and expanding the musical culture of the instrument in a conscious and new way, made possible by becoming an active member of that instrument’s cultural history.13

The notion that western art music composers who incorporate ethnic instruments into their compositions might become an ‘active member of that instrument’s cultural history’

lends a certain validity and honour to the endeavour.

Composer and musicologist Christian Utz cites Lachenmann’s work, Das Mädchen mit dem Schwefelhölzon, as an example of extending ‘the musical culture of an instrument in a conscious and new way’. The shō (a Japanese mouth-organ) features prominently in the penultimate scene of the opera. Utz posits that Lachenmann studied the chords of tōgaku (Japanese court music) and extended the principle of their birth and decay, ‘which intrinsically related to Lachenmann’s basic concept of the “Kadenzklang” (cadence sound)’.\textsuperscript{14}

A composition by Christopher Keyes, Li Jiang Etude No. 3, is another work which fuses traditional principles with the composer’s own aesthetic practices.\textsuperscript{15} The musical materials in the composition for xiao, tape, and real-time digital signal processing (DSP) ‘are all clearly derived from and allude to the Chinese musical tradition’.\textsuperscript{16} Li Jiang Etude No. 3 will be further discussed later in this chapter, as well as in Chapter 5.1, a chapter about the xiao.

None of the seven instruments incorporated into my compositions are typically tuned to equal temperament. This presented the compositional choice of whether to require the instruments to play in equal temperament or to have them play in their natural tuning, and the choice was made anew before beginning each composition. Two works for Native American flute, Hope and Soft-spoken Power, ask the flutist to perform in equal

\textsuperscript{16} Christopher J. Keyes, ‘Recent technology and the hybridisation of Western and Chinese musics’, Organised Sound, 10(1), (2005) p. 55.
temperament. This is accomplished through embouchure, breath support, and alternate fingerings, and thus is a requirement that not all Native American flutists will be able to fulfil. Recognising this limitation, the choice to compose for an equal temperament ensemble was made nonetheless, because it was appropriate to both compositions. My composition for five flutes, *Cloud Shadows*, explicitly asks the flutists to perform in the tuning system typical of their instrument. A primary focus of the work is timbre, and the intonation of the flutes is encompassed in this focus. Other compositions in the portfolio allow the aural space for the natural tuning to be heard within the context of an equal tempered ensemble.

Many ethnic instruments are learned through oral tradition, and works are performed from memory, having been passed from teacher to student. Renowned uilleann piper, Liam O’Flynn, described his relationship with his teacher,

Leo Rowsome:

It was like being an apprentice to a master. Almost all the uilleann pipers I know refer to an older piper. I would say it was impossible to learn on your own. All my music I learned by ear - dots never came into it - and now once the piece is living inside me I can begin to express myself through it.

Some traditional genres, such as Native American and Chinese folk, have their own system of notation. Collaboration with ethnic musicians demands appreciation of these differences, and this may affect compositional choices. The composition might be notated in the genre’s own notation system, such as works for Native American flute by James DeMars, or it may be taught orally and memorised by the performer. A prompter may be used to cue the musician, as when Dennehy’s *Grás agus Bás* was performed by the Crash Ensemble. The
material of World music groups is typically either improvised, as most of Silkroad music is, or memorized prior to performance, as with the band Jiggy.\textsuperscript{17,18} Irlandini notes:

> While the creative practices in World Music rarely involve musical writing and/or notation, but rather the multi-cultural interaction between musicians, the New Music [western art music] composer’s creative practices has emphasized the employment of writing (écriture); this sets up a predicament – absent in World Music – about how to deal with non-Western instruments within the realm of New Music.\textsuperscript{19}

Working with Persian musicians, Shahab and Shayan Coohe, and with uilleann piper, Éamonn Galldubh, did not present a notation or communication challenge. All three are skilled readers of music, and it was understood from the start of the collaborations that they would be reading western European notation. However, if new works for ethnic instruments are to be notated in western European notation, the fact remains that awareness of possible differences in manner of learning and performing music benefits and enhances collaboration.

> Many ethnic instruments do not have the same carrying power of volume as western orchestral instruments. Jean During writes that orchestras of Asian instruments developed as a result of authorities desiring to match the power and size of western ensembles, but

\textsuperscript{17} Adam Gurczak, Artistic Programs Director, Silkroad Ensemble. ‘Re: PhD research question.’ Message to the author. 3 September 2020.

\textsuperscript{18} Éamonn Galldubh, ‘Re: PhD research question re: Jiggy at Whelan’s’. Message to the author. 18 December 2020.

smaller ensembles are more suited to the instruments. Care was taken in choosing the instrumentation and size of the ensembles in my compositions for ethnic instruments, as a primary concern is to allow the distinct timbre of the ethnic instruments to be heard clearly. In my compositions the ethnic instruments are not to be overpowered in volume by the rest of the ensemble, nor is the timbre to be altered or subsumed in a wash of other colours similar to its own. Writing for the uilleann pipes, for example, a clarinet was chosen rather than an oboe, because the timbre of the oboe is close to that of the uilleann pipe chanter.

Today’s technology allows ethnic instruments to be amplified, transposed, and to have their timbre altered. Ethnic instruments are sometimes electronically amplified when performing with western orchestral instruments in order to meet the dynamics of the ensemble. As Christopher Keyes writes, ‘The common problem of balancing Western instruments, made to project in large hall, with many of the relatively intimate Chinese instruments is now routinely solved with amplification and the continued use of steel strings.’ Shayan Coohe amplifies his tar when performing with Dublin-based bands Tulca and Nava, and the uilleann pipes were amplified when David Power performed the world premiere of Kevin Volans’s concerto for uilleann pipes in the National Concert Hall in Dublin.

In a discussion about whether African instruments should be amplified, Odyke Nwezi writes, ‘African indigenous musical instruments originally built for live performances have their own natural acoustic ‘amplification’ to suit the environment …

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other words, indigenous music instruments did not need electronic amplification because they were used within a parameter that was covered by the acoustic amplification of the instruments’. The World Music bands Jiggy and Slow Moving Clouds, in which the majority of instruments are non-western, routinely electronically amplify the instruments.  

Technology is used to expand the register and timbre, as well as the volume, in the aforementioned *Li Jiang Etude No. 3* by Christopher Keyes. In a series of *Li Jiang Etudes*, Keyes digitally processes recorded samples of Chinese instruments to change pitch and timbre, calling the product of such processing ‘audio paint’. He maintains that many Chinese musicians ‘find the new Western emphasis on timbre complements traditional Chinese music and thus forms an easy bridge to the hybridisation of the two.’  

My compositions were written with the intention that the instruments would not be amplified, so that no distortion to the unique timbre will occur. The compositions are scored for small ensembles, suitable for more intimate settings. However, the premiere performance of *Zephyr*, my composition for xiao, suspended cymbal, and cello, was successfully amplified by the skilled sound crew in The Studio of the National Concert Hall in Dublin. I ultimately defer to the performers to make the decision about whether to amplify the instruments, as circumstances and venues vary greatly.

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1.3
List of Compositions

**Hope**
November 2017
6’15”
for two sopranos, Native American flute, western concert flute, clarinet, and percussion, setting Emily Dickinson's ‘Hope is the Thing with Feathers’

**Soft-spoken Power**
February 2018
4’00”
for solo Native American flute

**Moving Toward Home**
October 2018
6’00”
for uilleann pipes, clarinet, bassoon, and cello

**Under a Cobalt Sky**
January 2019
8’40”
for clarinet, violin, santoor, and tar

**Zephyr**
March 2019
6’30”
for xiao, suspended cymbal, and cello

**Cloud Shadows**
September 2019
7’25”
for high D tin whistle, Native American flute, xiao, western concert flute, and low D tin whistle

**Glissade**
February 2020
6’15”
for high D whistle, slide whistle, alto flute, bass clarinet, and snare drum

total duration for above compositions: 45’05”
Bird Suite

June 2020

total duration 29’ 35”
for xiao, string quartet, and two percussion players

1. ‘Listen for the Birds’ 5’45”
   Percussion I: tam-tam, snare drum, triangle
   Percussion II: triangle, rain stick, two wood blocks

2. ‘Woodpecker’s Song’ 3’50”
   Percussion I: bell tree
   Percussion II: tambourine

3. ‘Loons on the Lake’ 6’30”
   (for solo xiao, strings and percussion tacet)

4. ‘Dancing Owl’ 6’05”
   Percussion I: crotale on snare, snare drum, suspended cymbal
   Percussion II: three wood blocks, shaker

5. ‘Shore Birds’ 7’25”
   Percussion I: ocean drum (40 cm), large thunder tube
   Percussion II: bass drum and suspended cymbal
2

Introduction to Commentary on *Hope and Soft-spoken Power*

After decades of systemic suppression of Native American culture, Native American flutes have experienced a sort of renaissance in the second half of the twentieth-century, and have been commercially manufactured and widely sold across the United States since at least the 1980s. In the mid 1990s, my brother owned a store which sold ethnic musical instruments, and I was exposed to the wide variety in his inventory, including the Native American flute. In the early 1990s, flute circles began to emerge in response to the growing interest in and desire to learn about the instrument. These are casual yet essential groups through which members share knowledge about playing the Native American flute and perform for and with each other. The first official flute circle in the United States is the Oregon Flute Circle, founded in 1993. As an American (though not of Native descent), I was eager to learn more about an instrument that represented to me a cultural tie to the pre-colonial history of my country.

Before composing the three works for Native American flute in this portfolio, I immersed myself in study of the instrument as well as in Native American music in general. Authoritative texts that were beneficial in research include those by R. Carlos Nakai, James DeMars, John Bierhorst, Tim R. Crawford, Paula Conlon, Daniel R. Wildcat, Nicholas C. Peroff, Judy Epstein Buss, and Mary Jane Jones.

Initial areas of investigation into the Native American flute focused on the following: the differences between the Native American flute and the western concert flute,

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25 A leading manufacture of the flutes, High Spirits Flutes, for example, has been in business since 1990.
26 Mary Jane Jones, ‘Revival and Community: The history and practices of a Native American flute circle’, M.A. thesis (Kent State University, 2010), p. 18.
the distinguishing characteristics of Native American music and their integration into an ensemble with western orchestral instruments, and expansion of the capabilities of the Native American flute beyond what is typically expected of the instrument.

I relied heavily upon my extensive knowledge of playing the western concert flute. As a flutist, I am well familiar with breath support and how it affects tuning and tone. Various methods of articulation which are common in playing the western concert flute, such as staccato, legato, martellato, and fluttertongue, are easily transferred to performance on the Native American flute. I immediately grasped the basic fingering concepts: the pitch lowers as more finger holes are closed, and some pitches can be overblown to produce an octave or higher overtone harmonic. However, the fingering and cross-fingering on Native American flutes of almost any size differ greatly from that of a western concert flute. For example, the fingering used to play an F natural on the western concert flute is nearly identical to the fingering used to play a B natural on a Native American flute with an F sharp fundamental. Confusing the two results in an error that is a tritone away from the intended note!

An important aspect that emerged from my research on Native American music is that the concept of Native American identity in general is complex. Furthermore, in order to more fully understand the Native American flute, its development, and its music, it is necessary to consider this complex issue. For this reason, Native American identity will be more thoroughly discussed in this dissertation than the cultural identities associated with the other ethnic instruments in the composition portfolio. The discussion of identity follows in this chapter, and the Native American flute and music will be discussed in Chapter 2.1.
First, I will address the nomenclature, the preferred terms for self-identification. Writers Nicholas Peroff and Daniel Wildcat explain their word choice in the article ‘Who is an American Indian?’: ‘[W]e use the term Indian to focus attention on the issue of identity without tackling the matter of what specific designation, if any, is justifiable in referring to the Indigenous peoples of the Americas.’

On the other hand, a Wahpetunwan Dakota writer and scholar, Waziyatawin Angela Wilson, states that she prefers to use the term ‘Indigenous’ over ‘American Indian’, ‘Indian’, or ‘Native American’, because of ‘the implicit notion of coming from the land and being of the land.’ She further explains, ‘This is not only an accurate description of our people’s origins, it is also a political declaration about our claims to the land.’ Composers R. Carlos Nakai and James DeMars use the term ‘Native American’ throughout their writings. Their book, *The Art of the Native American Flute*, was my introduction to learning how to play the flute, and, having adopted the use of their preferred term, I use ‘Native American’ throughout this dissertation.

A second topic related to Native American identity is the centuries-long, systemic suppression of the Native Americans by the U.S. government, and the many repercussions of that suppression. Untold artifacts, traditions, rituals, and stories were lost, in large part do to this suppression, including a body of knowledge about Native American flutes and melodies.

Native American activist and scholar, Vine Deloria, discusses the historical development and experiences of Native American peoples in his book, *Red Earth, White
Lies: Native Americans and the myth of scientific fact. He writes of the obstacles that Native Americans face when they confront misconceptions about their culture:

For American Indians, the struggle of this century has been to emerge from the heavy burden of anthropological definitions that have made Indian communities at times mere laboratories for political and social experiments. Indian advocates are often very bitterly attacked by scholars when they question these experiments and articulate their own ideas which clash with accepted orthodox and comfortable interpretations about tribal people developed by academics. 30

An additional and unfortunate reason for the loss of some aspects of Native American culture is that Native Americans may have chosen to ignore their heritage and forget older traditions as a means to defend themselves against negative and stereotyped views of them held by white Americans of the nineteenth and early twentieth centuries. 31

The complexity of Native American identity is reflected in a distinction between ‘spatial Indianness’ and ‘aspatial Indianness’, as defined by Deloria. 32 ‘Spatial Indianness’ is an identity which is formed within the context of spatially distinct place, and it correlates with a recognition of identity given at birth into a tribe. From this viewpoint, the tribe as a whole is seen as ‘a process of interaction between things within a specific region of space’, and is something that ‘continually evolves and changes with the external environment’. 33

The cultural identity is tied to a geographic location in the sense that over decades and centuries the significance of the practices and rituals that have taken place at that site is

31 Mary Jane Jones, ‘Revival and Community: The history and practices of a Native American flute circle’, M.A. thesis (Kent State University, 2010), p. 12.
embedded into the trees, mountains, rocks, rivers, buildings and roads. Wilson’s preference for the term ‘Indigenous’, as cited above, reflects a spatial identity.

‘Aspatial Indianness’ is not formed in the context of a specific place, but the identity ‘is more a product of the way members of the dominant society perceive Indians, than it is an expression of the way Indians do, in fact, live in American society.’

American population at large is more familiar with aspatial identity than with spatial.

The distinction between spatial and aspatial Indianness does not define two mutually exclusive subsets of a culture; rather people who identify as Native Americans most often fall somewhere between the two. Peroff and Wildcat write that ‘there is no clear dividing line between Indian identities, and the defining features of Indianness shift and change with time.’

The concept of aspatial Indianness does not seem to be mutually exclusive with a third term, ‘pan-Indianism’. ‘Pan-Indianism’ was defined in 1955 by James H. Howard it is still in fairly wide use today. The term seems to be more of a racial identification rather than the cultural identification of spatial and aspatial Indianness. Pan-Indianism refers to a blending together or blurring of distinguishing qualities associated with specific tribes, and describes a process by which, according to Howard, ‘certain American Indian groups are losing their tribal distinctiveness and in its place are developing a generalized, nontribal “Indian” culture.’ In her discussion on Native American flute circles, Mary Jane Jones speaks of members of a flute circle who identify as ‘pan-Indian’. ‘Those with a pan-Indian

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35 Ibid.
identity,’ writes Jones, ‘view themselves as racially different from other Americans of European, Asian, or African ancestry and may consequently feel it is impossible for them to assimilate fully.’ Some who identify as pan-Indian view the borrowing from other tribes ‘merely as the assumption or resumption of something “Indian” as opposed to something “White.”’ Rather than a cultural distinction within Native American populations, pan-Indianism reflects a distinction between Native Americans and non-Native Americans.

Pan-Indianism, or cultural practices reflecting general Indian ancestry without regard to specific tribal origins, is a major factor influencing Native American music today. Today’s Native American flute reflects an amalgamation of traditions from tribes throughout North America, and is a prime example of pan-Indianism. Renowned Native American flutist, R. Carlos Nakai, a member of the Navajo Nation, studied and appropriated the flute styles and techniques of the Plains tribes, since the Navajo did not have a history of playing the flute. In an interview with Daniel Buckley, Nakai describes his artistic philosophy:

What I do is primarily not related to a predisposition to reiterate and romanticize what we were at one time but to look toward the future and to do things from my perspective, based on the influences that surround me. So as a cultural person, and one fairly well involved in the philosophies of the Utes, Navajos and the Zunis, it’s ‘never look back’ but always look toward tomorrow and see what the possibilities could be. I

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38 Mary Jane Jones, ‘Revival and Community: The history and practices of a Native American flute circle’, M.A. thesis (Kent State University, 2010), p. 33.
41 Ibid, p. 4.
operate primarily from there.\textsuperscript{43}

As noted above, Chapter 2.1 will discuss the Native American flute and music; two of my compositions will be discussed in Chapters 2.2 and 2.3. An understanding of the original context of the Native American flute informed the compositional choices in three compositions for Native American flute. In \textit{Hope}, for Native American flute, two sopranos, western concert flute, clarinet, and percussion, the Native American flute is an equal participant in an ensemble in which there is reciprocal exchange of influence. \textit{Soft-spoken Power} is for solo Native American flute, and incorporates idioms of the genre as well as introduces new expression for the instrument through harmonic language, articulation, melodic line, and rhythm.

\textit{Cloud Shadows} is a work for five flutes, including the Native American flute, and is discussed in Chapter 7.

\footnotesize{\textsuperscript{43} Daniel Buckley, Daniel. 2013. ‘R. Carlos Nakai Speaks His Mind’, \textit{Native Peoples} 13 (3), p. 25.}
2.1
The Native American Flute

Across Native American cultures, music serves a purpose. An essential part of native life, it was historically used for many things, for instance: to control weather, to lull a child to sleep, for good hunting, or to spur on a war party.\(^4\) Frances Densmore, an early twentieth century anthropologist who collected more than 2000 Native American songs, identified more than 200 of those songs as used for healing.\(^5\) Vine Deloria recounts a story told by Luther Standing Bear in which a Sioux medicine man halts a thunderstorm with his powers in order to continue with a dance and feast.\(^6\)

Flute music, in particular, was considered hypnotic and used for meditative purposes is most often played solo or accompanied by percussion. It was played exclusively by men, and flute songs were often used to woo lovers.\(^7\) The man who played the flute melody shown in Figure 1 said that, when women hear the song, they cry with loneliness and then allow the flutist to approach them.\(^8\)

Fig. 1 Lonesome Flute

A good deal of knowledge about the Native American flute and flute melodies was lost as a result of the suppression of the culture. Many contemporary Native Americans do not know if their ancestors played the flute, and they rarely, if ever, heard the flute being played.49

After the folk music revival of the 1960s and 70s, interest in Native American flute music became more widespread.50 Recordings by performers such as Doc Tate Nevaquaya and R. Carlos Nakai aided in the reintroduction of the flute to mainstream society. Lost tribal flute traditions have given way to new Pan-Indian flute practices.51

The construction of and performance on Native American flutes reflects a combination of traditions from regions across North America. The typical modern Native American flute most closely resembles that of the Plains Indians.52 Ethnological feedback, as defined by Hazel Hertzberg in her book, The Search for American Indian Identity, is a situation where those with lost traditions consult the work of anthropologists to learn about

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49 Mary Jane Jones, ‘Revival and Community: The history and practices of a Native American flute circle’, M.A. thesis (Kent State University, 2010), p. 15.
51 Mary Jane Jones, ‘Revival and Community: The history and practices of a Native American flute circle’, M.A. thesis (Kent State University, 2010), p. 16.
52 Ibid.
their own cultures.\textsuperscript{53} Jones points out that the re-emergence of the Native American flute in the twentieth-century is a good example of ethnological feedback.\textsuperscript{54}

Many different kinds of wood are used in the construction of modern Native American flutes, including cedar, juniper, ironwood and box-elder. Despite the fact that much of the information and lore about songs played on flutes were lost to the various tribes, it is known that Native American flutes of the past as well as the present are generally end-blown flutes that are held vertically, and a unique and defining characteristic is a vertical block.\textsuperscript{55,56} Adjustment of the block has an effect on tone quality and tuning. A diagram of the cross section of a Native American flute is shown in Figure 2.

\textbf{Fig. 2 Typical construction of a Native American flute, showing the vertical block} \textsuperscript{57}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{flute_diagram.png}
\caption{Diagram of the cross section of a Native American flute.}
\end{figure}

\textsuperscript{54} Mary Jane Jones, ‘Revival and Community: The history and practices of a Native American flute circle’, M.A. thesis (Kent State University, 2010), p. 15.
Today’s Native American flutes generally have five or six holes. Pitch ranges and tone quality are affected by the length of the flute and the material used. A cedar flute with an F sharp fundamental, made by High Spirits Flutes in Patagonia, Arizona, was used during the composition process, as well as in performances of the compositions, and is shown in Figure 3.

Fig. 3 Cedar Native American flute with F sharp fundamental

![Cedar Native American flute with F sharp fundamental](image)

The size of the flutes and the distance between finger holes vary greatly, and the construction of the flutes is not systematised. Renowned Native American flutist, R. Carlos Nakai, describes the traditional method of construction as a process which is tailored to the individual flutist, resulting in highly individualised flutes:

The placement of the sound-producing apparatus as well as the finger hole distances are arbitrarily determined. Measurements for distances are derived from the maker’s own body. For instance, combinations of arm length with or without palm and/or finger

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58 Photo by the author.
length, the width or length of the hand, thumb width, digit width
lengths of any other fingers of the hand contribute to the template
of each flute maker, thereby making each flute a personally crafted
and arbitrarily keyed instrument.59

The differences from one flute to another continue today, even in flutes which are
commercially produced. The five lowest tones on any flute make up a pentatonic scale;
however, due to the differences in manufacturing techniques as well as the music traditions
of the various Native American tribes, the flutes each have their own unique sound quality,
and the precise distances between scale degrees will vary from one flute to another.

In The Art of the Native American Flute, Nakai offers fingering charts based on the
Boehm system, but says that the charts should not be associated with pitch production.
Reminding the reader that all Native American flutes are unique, Nakai cautions the
student:

Remember that the note-like symbols indicate only what
fingers to depress for either the five- or six-hole flutes to
make a higher or lower sound as indicated by its position
on the staff lines. In other words, this scale now becomes
a fingering tablature and is not related to actual pitches in
any way.60

Both Nakai and Tim R. Crawford, author of Flute Magic: an Introduction to Native
American Flute, encourage today’s flute students to play according to a tuning which is
unique to both the player and the instrument.61

59 R. Carlos Nakai and James DeMars, The Art of the Native American Flute (Phoenix: Canyon Records
60 R. Carlos Nakai and James DeMars, The Art of the Native American Flute (Phoenix: Canyon Records
Productions, 1996) p. 16.
61 Tim R. Crawford and Kathleen Joyce-Grendahl, Flute Magic: an Introduction to Native American Flute
As with all Native American flutes, the F sharp fundamental flute that I used in writing Hope and Soft-spoken Power does not have the second step of the pentatonic scale readily available at the lowest end of the range. All holes closed sounds an F sharp; the bottom hole open sounds an A. The ‘missing’ G natural and G sharp can be played using quarter and half hole fingerings respectively. However, for Hope and Soft-spoken Power I chose not to use pitches which required partial finger hole coverings. Playing rapid passages using a partial hole fingering presents a performance challenge.

In historical Native American music, vocal songs are considered property, and singing someone else’s song without permission is akin to theft. Vocal melodies often incorporate microtones tones, and most people sing ‘down the throat’, as opposed to the open throat style common in western art music. John Bierhorst describes the technique as follows:

To get the right feeling, pretend that you are sobbing, that you are literally choked up with emotion. You will feel the catch in your throat. Take one of your sobs and let the sound keep coming. Now turn that sound into a song, any familiar song. The music will be coming from that place in your throat where you felt the catch. No matter how loud you sing, you will not feel the vibration in the roof of your mouth. You will feel it only in your throat.

Additionally, men often sing with varying degrees of a ‘tight throat’, for example in the Plains, Sioux, Pueblo and Chippewa tribes. This technique adds a tension to the tone of

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voice, sounding gravelly in lower registers and whining in higher registers. Historically, women did not sing with a tight throat because it was considered unfeminine.⁶⁴

Native American flute and vocal melodies have a strong gravitational pull toward the tonic, and always end on the tonic. The tonic is almost always the lowest note on the flute.⁶⁵ Without using half or quarter hole fingering (such fingering is atypical of the genre), the interval between the two lowest notes on the flutes is a minor third. The fact that the songs end on the tonic, and most often the tonic is the lowest note on the flute, means that the majority of Native American flute melodies have a pentatonic flavour. When sixth and seventh scale degrees are added, the predominant mode is dorian.

Flute and vocal melodies in Native American music are governed by speech rhythms, and are often of irregular metre or changing time signature.⁶⁶ Melodies transcribed by Judy Epstein Buss, such as the Kiowa melody shown in Figure 4, are notated without a time signature or bar lines.⁶⁷

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John Bierhorst writes that ‘putting these songs into notation is like putting them into a straightjacket’. He uses the song shown in Figure 5 to illustrate this.

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Fig. 5 Pima flute song

Flute Song
PIMA
Anonymous, 1927

Native American drumming, on the other hand, is governed by body rhythms, and generally has a regular metre. When flute or vocal melodies are accompanied by drumming, it is not uncommon for there to occur seemingly unrelated and opposing rhythms in one song. Bierhorst relates the phenomenon to Native American folklore:

Music like this, in which two or more parts, though heard together, have no connection with each other, is typical of the Indian way of thinking. There are even Indian dances in which the steps are executed in a rhythm entirely independent of the accompanying song. Indian myth makers do the same thing. When they tell stories about Coyote, they have him lighting a fire, shooting a bow, and getting married—things only a human could do. Is Coyote an animal or a man? The answer is that he is both things at once.69

The lullaby shown in Figure 6 serves as an example of a song with a regular metre (body rhythm) in the drums and an irregular metre (speech rhythm) in the melody.

Additionally, in this song the drums and the melody each in turn accelerate the pulse individually.

Fig. 6 Lullaby for a Girl

Embellishments in historic Native American flute playing are chosen not out of mechanical necessity (as they sometimes are, for example, with uilleann pipes); however,

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they are not purely ornamental. They perform a specific function in historical Native music, which is to mark structural tones. See, for example, the Kiowa melody shown in Figure 4. The grace notes emphasise the tonic, A, and D and E. Historically, grace notes are most often an octave or a major second away from the main note. Slides and glissandi are often used in native flute songs. Slides are easily performed on the Native American flute due to the absence of keys.

Whereas grace notes, mordents, and glissandi are familiar to the western concert flutist, a Native American ornament that is not typically used when playing the western concert flute is the ‘lift-off’. This is achieved by releasing all fingers and simultaneously stopping the breath, resulting in a percussive ending to the note. The pitch is irrelevant (and will be different on flutes of various keys), as the pop at the end of the note is the chief aim of the technique. The lift-off is an ornament which is also used in Chinese flute music. I learned this technique while studying Chinese flutes and folk music in Hong Kong, and recognised it as the same when I began study of Native American music. It is not an easily mastered technique, and results will vary even within one piece performed by a single flutist. When I began incorporating this device into my own compositions, I had not yet seen a notation for it, so created my own. My notation for a lift-off is shown in Figure 7.

**Fig. 7 Lift-off notation, Stoop**

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71 Discussion of uilleann pipes ornamentation is found in Chapter 3.1.
Though the lift-off is typically improvised, and not notated, Crawford uses the notation shown in Figure 8.

**Fig. 8 Lift-off notation, Crawford**

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One type of ornament, the warble, is unique to the Native American flute. A warble is a wide vibrato on the fundamental, the lowest note of the flute. Not all flutes are able to produce a warble. Musicologist Dr. Richard Wayne notes that, while a warble is anathema to organ builders, who call it a burble, it is an important feature of traditional Plains flute playing.73

While individual tone quality and style of ornamentation are historically valued among Native American flute players, performance practice is not highly specialised or regimented. Performance is not a determining factor in assessing the competence of the Native American flute player, but rather the performer's memory and command of a large repertoire. Contribution to and perpetuation of tradition are valued over performance ability.74

As mentioned in Chapter 2, flute circles emerged in the 1990s in response to growing interest in playing the Native American flute. In her thesis, ‘Revival and

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Community: The history and practices of a Native American flute circle’, Mary Jane Jones writes about her personal observation of a flute circle in Ohio over a course of five years. She attributes the development of flute circles to the fact that ‘people who had very little musical experience were purchasing flutes from local flute makers and at Native American flute conventions.’

For the members of the flute circle who identified as Native Americans, ‘music was a means of connecting to the spiritual and ceremonial elements of their ancestral pasts, and the flute was the tool with which they made this connection.’

Most of the playing at the flute circles is improvisational, and this is consistent with Native American flute playing. Jones writes that ‘the format of these improvisational pieces was inconsistent with traditional flute improvisation, since there is no evidence that duets, call-and-response playing, or melodies with ostinato were ever prevalent among Native American flute players of the past.’

In compositions integrating the Native American flute with western orchestral instruments, the composer may call for the ensemble to play in equal temperament tuning. In these cases, the Native American flute player must explore and experiment with their own instrument in order to ensure discovery of ways to play the pitches of equal temperament. Embouchure formation, fingering, breath pressure, and support each play a part in tuning. Standard fingerings for the pentatonic scale need to be checked to ensure that an alternate fingering is not needed to alter the unique tuning of the flute and allow for it to blend in an ensemble using equal temperament tuning.

75 Mary Jane Jones, ‘Revival and Community: The history and practices of a Native American flute circle’, M.A. thesis (Kent State University, 2010), p. 19.
76 Ibid, p. 27.
77 Ibid, p. 22.
Both Hope and Soft-spoken Power are to be performed in equal temperament. Therefore, I sought to discover a method of playing my flute which would allow me to play consistently in equal temperament tuning, whether I was playing largely pentatonic music in an ensemble (Hope) or solo chromatic music (Soft-spoken Power). Most often the tuning of the notes that are diatonic to the pentatonic scale can be adjusted with breath and embouchure. Playing pitches which are not diatonic to the pentatonic scale in equal temperament requires further experimentation with alternative fingerings. Below are two finger charts. Figure 9 illustrates fingerings suggested by Nakai, and Figure 10 shows alternate fingerings I devised in order to play in equal temperament on my Native American flute. The letters ‘AF’ in my chart indicate pitches calling for alternate fingerings. The arrow below the G5 indicates the preferred fingering.

Fig. 9 Nakai finger chart

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With the resurgence of interest in Native American music in the 1960s and 70s, came the need to notate the music in order to make it even more accessible. To accommodate the range of freedom of performance that plays an integral role in Native American music, a new system of notation was developed by Nakai. The eponymously named system, Nakai tablature, is a simplified version of standard notation based on the European music notation system, and is a widely accepted system of notation in contemporary Native American flute music.

Notated in the treble clef, Nakai tablature is always written with a key signature of four sharps, corresponding to the European music scale, E major. When playing a flute with an F sharp fundamental, the four sharp key signature roughly corresponds to the notes readily available on that flute. The pitch notation, however, corresponds more accurately to the intervals above the fundamental note. In this way, the modern Native American flute can be seen as a transposing instrument. Regardless of size and key of the flute, the F sharp in Nakai tablature will always represent the fundamental, or lowest note of the flute. This allows for ease of sight reading in using several different size flutes.
The rhythmic notation in Nakai tablature is not nearly as rigid as that of European music notation. The freedom of rhythm represented by the notation reflects the tendency to use speech rhythms, or irregular metres, in Native American flute music. Nakai calls his system of rhythmic notation ‘parlando style’.\textsuperscript{79} Though the symbols are identical to European rhythmic notations, the duration of the notes is quite flexible, as can be seen in Nakai’s table shown in Figure 11.\textsuperscript{80}

\textbf{Fig. 11 Nakai tablature, ‘parlando style’

\begin{center}
\includegraphics[width=\textwidth]{fig_11}
\end{center}


\textsuperscript{80} Ibid, p. 42.
James DeMars, a composer and a professor at Arizona State University, has worked closely with Nakai to write many compositions for Native American flute and western orchestral instruments. As per his website, DeMars ‘belongs to a generation that is revealing a new integration of world music with the range, depth and stylistic variety of the classical tradition’. DeMars uses a combination of western European notation and Nakai notation in his compositions. The extracted Native American flute parts of his compositions are notated in Nakai tablature, and the full scores are notated in concert pitch with European notation. In an email correspondence, DeMars describes his method of notation:

My notation is always as simple as possible for the Native American players because they do not read music - they learn to memorize the music and watch for cues. In some cases we hire a prompter to tell them when to begin and end. We want their music to be true to their tradition and to show the conductor approximately what to expect. Usually I create repeated sections (in the US we call them "vamps") where the conductor can repeat or wait until the native player has completed their phrase.

I have used the tablature notation - be careful the word "tablature" means different things to different people.[…] Because Mr. Nakai learned to read music on the flute based on F# (F#, A B, C# D# E, F#) (essentially A pentatonic) I just tell him to change flutes (usually to what we call the "G minor flute" (G, Bb, C, D, F G,) but keep his notation the same. In other cases we use a C minor flute or D minor flute but always notated in F# so he can change easily from one to another.

The above correspondence not only elucidates the rationale behind notational choices made by DeMars, but it also reveals a deep respect for the Native American flute players, embodied in a desire to accommodate the musicians and an unwillingness to temper expression within their genre.

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82 James DeMars, ‘Re: web contact.’ Email message to the author. 19 February 2018.
Accommodations for the freedom of rhythm which is characteristic of Native American flute playing are incorporated into his scores, such as senza misura sections and cuing instructions, as can be seen at the opening of *Tarot*, a work for Native American flute and string quartet, shown in Figure 12.

**Fig. 12 Opening of *Tarot*, by James DeMars**
DeMars begins the movement with a flute solo which is typical of Native American flute melodies, namely the repetition and ornamentation of the tonic as an opening phrase (compare with Buss’s transcription of the Kiowa melody shown in Figure 4). The tonic is approached and ornamented with perfect fifths, an interval which is neither especially common nor particularly rare in Native American music (it is, however, historically atypical to embellish the tonic with a grace note at in interval of a fifth). The senza misura indications, the long held notes, and the clearly marked cues allow the Native American flutist to perform with the rhythmic freedom which is idiomatic to the genre.

Today, greater freedoms in ornamentation are employed in the composition of new music for the Native American flute. Many of the ornaments and articulations used in contemporary native flute music are identical to those used when playing a western concert flute, such as mordents, trills, grace notes, and fluttertongue, as can be seen in the prolific output of both Nakai and DeMars. While largely idiomatic to historical tradition, compositions by Nakai include turns and trills, which are not typical in historic Native American flute music. DeMars uses a single grace note, E, to embellish various scale degrees in his composition *Crow Wing*, a duet for Native American flute and alto saxophone. While grace notes are idiomatic to Native American flute, his use of them is not. The grace notes do not mark structural notes and are not at intervals of an octave or a second, but thirds and fourths.

DeMars contributes a great deal to the contemporary repertoire of the Native American flute. His output is vast, and his compositions reflect a profound understanding of and appreciation for the flute and Native American music in general. In his

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correspondence, as well as in his compositions, he exhibits tremendous respect for Native American flute players. This respect is manifested in accommodation of the players, allowing them to perform in a way that is natural to them. While canonic interplay is a feature of his compositions, the dialogue between instruments of differing genres maintains a stylistic integrity of the traditions.
2.2
Commentary on Hope

Hope sets a poem by Emily Dickinson, ‘Hope is the Thing with Feathers’, and is written for two sopranos, Native American flute, western concert flute, clarinet, and percussion. In Hope the music written for the Native American flute primarily adheres to idiomatic expressions, and this affects the writing for the rest of the ensemble. The embellishments in the western concert flute and clarinet lines are informed by Native American idioms.

Hope is written using western European notation, and not Nakai tablature. The approximate rhythms transcribed through Nakai tablature are not appropriate for Hope. While there is indeed room in the work for slight alterations of rhythm through use of rubato, the cohesiveness of the ensemble is dependent on accurate measurement of notated durations. The lack of chromaticism in the work, and the fact that the piece calls for an F sharp Native American flute, mean that no deviation from the Nakai method of notating pitch resulted in the use of western European notation.

My compositional focus in writing Hope is the incorporation of the Native American flute into an ensemble with western orchestral instruments. There was no intention of incorporating the Native American style of singing ‘down the throat’, and Native American percussion instruments are not used. The vocal sound is modelled in part on the simple yet elegant manner of singing found in the Music on Main performance of
Caroline Shaw’s *By and By.*\textsuperscript{84} In the premiere performance of *Hope*, the sopranos sang in an operatic style, and the result was a clash of timbres between the sopranos and the Native American flute.\textsuperscript{85} After that performance, the direction to sing ‘simply, with minimal vibrato throughout’ was added to the score.

In *Hope*, the music for the Native American flute and the percussion remains close to Native American idiom. The percussion part is written for wooden guiro and four tom-toms. In Native American music, drums are not played with the hands, but a beater that is often covered with a cloth at the striking end. To simulate the sound of native drums in *Hope*, the toms are muffled with cloths, and yarn mallets are used throughout.

The opening solo melody for the Native American flute is in F sharp pentatonic, a mode which is quite common in modern Native American music.\textsuperscript{86} The overall absence of minor seconds, fifths, and major and minor sevenths is consistent with the typical construction of Native American flute melodies. The opening melody is embellished with glissandi and a slide, grace notes and a mordent, all ornaments typical of recent developments within the Native American genre, as seen in compositions by Nakai.

Throughout the piece, the lift-off is used in all wind parts. As the technique is not commonly used in western art music, a detailed description of how to execute the lift-off is provided for the players in the glossary of *Hope*. Examples of my notation for the lift-off are seen in bars 8, 10, and 11, as shown in Figure 13.


\textsuperscript{85} *Hope* was premiered 31 May 2018 in the Samuel Beckett Theater, Trinity College Dublin.

Before setting the poem, ‘Hope is the Thing with Feathers’, I scanned it in order to find the prevailing metrical pattern inherent in the text. Whereas most of the poem is in a strict iambic metre having feet of short-long duration, the first line of the poem is in irregular metre, with three feet of varying metres: a dactyl, a spondee, and a trochee. The first line is the only line that begins with a strong beat, and the strong beat is on the word ‘hope’, the central conceit of the poem. This sets up the metaphor immediately, and distinguishes the opening statement as separate and more forceful than the rest of the poem. The scansion is presented below, with strong beats marked with slashes, the weak beats with dashes, and the feet separated by vertical lines.

Hope is the thing with feathers –
That perches in the soul –
And sings the tune without the words –
And never stops - at all –

And sweetest - in the Gale - is heard –
And sore must be the storm –
That could abash the little Bird
That kept so many warm –

I’ve heard it in the chillest land –
And on the strangest Sea –
Yet - never - in Extremity,
It asked a crumb - of me.

The irregular metre of the opening melody of *Hope*, which echoes the Dickinson’s use of irregular metre to begin the poem, is also idiomatic to native flute playing. The poem employs an extended metaphor, in which hope is represented by a bird. In Native American music, flute and vocal music are said to be in the rhythm of birdsong, or speech rhythm. Despite the fact that *Hope* begins in a 4/4 time signature, neither the Native American flute nor the percussion fit into this metre. Adhering to Native American idiom, the percussion part is governed by a relatively steady metre, while the flute line is irregular. The 4/4 time signature is not to indicate a strong beat on the downbeat of each bar; rather the choice to use 4/4 was made to facilitate reading. Stresses are marked in the score to show where the strong beats lie in each part (see Figure 13).
Strong beats in the vocal line are dictated by the text, as is typical in Native American music. After the entrance of the voices in bar 17, frequent time signature changes accommodate the stresses in the text and make clear to the singers where the strong beats lie (see Figure 14). The percussion continues to beat a relatively steady pattern which is at odds with the speech rhythms of the vocal lines. The juxtaposition of regular and irregular metres, here and in the opening bars, reflects the influence of Native American music on the work as a whole.

Fig. 14 Hope, bars 29-37

With the switch to a 6/8 time signature initiated by the percussion in bar 87, the second two stanzas of the poem are set with relatively stable metres. While this reflects the consistent metre in the poem, a pattern of alternating four and three iamb lines, the rocking

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88 The brief passage in 4/4 bars 166-71 serves to highlight the word ‘never’ as one of a certain weight. In Dickinson’s poem the word is emphasised via a hyphen before and after.
motion of the triplet metre also portrays the rocking of the ‘strangest Sea’ and suggests a lullaby aspect to the birdsong of the ‘little Bird / That kept so many warm’.

Throughout the piece, the dynamic markings for the Native American flute are consistently louder than those for the rest of the ensemble, and this is to accommodate for the fact that the range of dynamics available on the Native American flute is narrower than that of western orchestral instruments.\(^{89}\) Similar to recorder playing, the pitch is subject to change depending on the air speed and pressure. Consequently, increasing the air speed and pressure in order to increase volume runs the risk of playing ‘out of tune’. A range of dynamics is achievable on the Native American flute with proper embouchure adjustment, but it is a relatively small range. In order to achieve the desired balance between the instruments, the ensemble is kept mindful of the difference in dynamic range by the exaggerated differences in the markings.

In bars 106-11 the Native American flute is indeed subsumed into the ensemble. This is reflective of the text sung during those bars, ‘and sore must be the storm’. The storm momentarily engulfs the ‘bird’, here represented by the Native American flute.

While *Hope* is strongly influenced by Native American music, the influence within the ensemble is bilateral. As I am both composer of the work and a Native American flute player (I played in the premiere performance), the Native American flute part is written with my own practice and style in mind. Placing the Native American flute in an ensemble with any other instruments deviates from the historic tradition of solo performance. As an ensemble member, the Native American flute plays precisely notated rhythms, not

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\(^{89}\) The loudest note sounded on the Native American flute is the fundamental, or lowest note.
approximate rhythms, such as those transcribed in works by Nakai and DeMars. While the grace notes throughout *Hope* adorn structural notes, they are more often at an interval of a fourth, and not at the customary second or octave. Though Native American flutes vary in their individual tuning, it is here integrated into an ensemble playing in equal temperament, and tuning adjustments are made. As discussed in Chapter 2.1, I developed and use a system of alternate fingering in order to play in equal temperament.
2.3
Commentary on Soft-spoken Power

Soft-spoken Power expands on the concept of a Native American flute solo, deviating from idiom in its tuning, harmonic language, and overall stylistic expression. It is not hypnotic or meditative; the ABA form contains an energised middle section which is characterised by angular lines and aggressive articulation.

As a work for solo Native American flute, it is certainly possible that Soft-spoken Power be performed in the tuning which is unique to each flute and to each performer, as is customary in the Native American genre; however, it is my intention that the piece be performed in equal temperament. This has more to do with offering the instrument a new form of expression than with stripping it of a key feature. Deviating from the idiomatic pentatonic scale, the piece is quite chromatic. Conception and development of chromatic gestures is dependent on equal temperament in order to hear the tension intended with the semitone laden motives. In especially chromatic passages, bars 33-5 for example, a series of equidistant semitones is a defining aspect.

Fig. 15 Soft-spoken Power, bars 33-5

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90 As noted in Chapter 2.1, I discovered and use alternate fingerings for my own flute in order to play in equal temperament.
Though the work begins and ends firmly in the characteristic key of F sharp pentatonic, the bulk of it uses pitches not frequently played on the Native American flute. Within the sections which are in F sharp pentatonic, the repetition of the third scale degree, B, rather than the tonic, deviates from common practice in the construction of Native American flute melodies. It is not until bars 11 and 12 that a firm cadence on the fundamental is reached. The structural weight of F sharp is marked in those bars by repetition, a grace note (though not the characteristic major second or octave), and a lift-off. These gestures provide a strong gravitational pull to the tonic, similar to those observed by Buss. The repetition of the tonic in bar 11 - as well as in the final two bars of the work - allows for inclusion of the idiomatic warble, if this technique is available to the flute and/or the player.

Fig. 16 *Soft-spoken Power*, bars 1-12

Despite the initial emphasis on the third scale degree rather than the tonic, the opening twelve bars of *Soft-spoken Power* conform to a harmonic realm expected from the

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instrument. It is not until bar 19 that a chromatic pitch, D natural, is played. The D natural initiates a level of chromaticism which is in no way idiomatic to Native American flute music and which continues until the return of the opening melody in bar 112. An energetic melody incorporating tritones and minor seconds is uncharacteristic of the genre, as are graces notes at intervals other than major seconds or octaves.

Articulation, in addition to harmonic language, plays a role in the deviation from idiom. Notes played non legato on the Native American flute produce a distinctive, sharp sound, though this is rarely heard in either historic or contemporary music. The semiquaver notes played non legato in bars 28-35 and bars 89-106, for example, incorporate this sound and impart a demonstrable and non-idiomatic tension to the work. Additionally, the articulated grace notes on nearly every note in bars 63-9 with frequent use of staccato create a level of activity not typically found in Native American flute music (see Figure 17).

**Fig. 17 Soft-spoken Power, bars 63-9**

A brief return to the discussion of notation serves to elucidate an additional aspect of *Soft-spoken Power*. As stated in Chapter 2.1, Nakai tablature was developed in order to make Native American flute playing accessible to a wider range of people, and built into the system is a freedom (particularly rhythmic freedom) which accommodates and
encourages individual interpretation of the music. While Nakai instructs the student on various symbols of ornamentation and includes them in his transcriptions, he himself does not play exactly what he has notated. Comparing Nakai’s performance of many of the songs in *The Art of the Native American Flute* with his performance of these songs on the album, *Changes*, one notes many differences between the notation and the performance.

It is understood, then, that Nakai’s transcriptions are to be played with a great deal of artistic license.

DeMars uses Nakai tablature in his compositions, and cues are built into his scores in order to allow performers an indeterminate amount of time to complete a passage. This is done with the deliberate intention to accommodate rhythmic freedom, allowing the performer a certain measure of comfort within a familiar set of parameters.

The articulations and ornaments in *Soft-spoken Power*, on the other hand, are to be played as literally as possible, as are the rhythms. The non-idiomatic grace notes and the fast paced rhythms imbue the piece with an energised tension. A looser interpretation of the score might mitigate some of the intended tension. A performance dependent on faithful rendering of the score is in itself an act which is not typical in Native American flute playing.

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94 The full scores of DeMars’s works are notated in western European notation, but the extracted parts for the Native American flute player are written using Nakai tablature.
3 Introduction to Commentary on Moving Toward Home

Moving Toward Home is a work for uilleann pipes, clarinet, bassoon, and cello. The composition employs non-idiomatic harmonies and musical gestures, and makes novel use of the regulators through contrapuntal voice leading.

Shortly after moving to Dublin from New York in 2017, I began attending twice weekly sessions of Irish traditional music to learn more about the genre. As a wind player, I was fascinated by the uilleann pipes. I was impressed by the broad range of capabilities that seem to be inherent in the instrument, and grew curious about how many different sounds it could make. Having heard the pipes only in Irish traditional settings, I wondered what it would be like to hear them in other contexts, or playing non-Irish music.

Before beginning work on Moving Toward Home, I read papers analysing the music and notation of Liam O’Flynn and Séamus Ennis, listened to and examined the scores of works by contemporary composers featuring the uilleann pipes, including works by Shaun Davey, David Flynn, Roger Doyle, Michael Holohan, Philip Martin, Gerry Murphy, and Kevin Volans. I also met with several pipers in person to learn more about the instrument. Pipers interviewed include Éamonn Galldubh, Joe McHugh, Terry Moylan, and Néillidh Mulligan.

Areas of particular interest in my research include the maintenance of textural and dynamic balance within the ensemble, variety of style and technique among pipers and how that effects performance, and the mechanics of the instrument. I sought to discover to what

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95 James R. Cowdery, The Melodic Tradition of Ireland (Kent, Ohio and London, England: The Kent State University Press, 1990);
degree embellishments typically played on the uilleann pipes are a result of mechanical necessity, and how this effects the construction of a melodic line, as well as the possibility of using the regulators of the pipes beyond the role of homophonic and diatonic support.

Fig. 18 Néillidgh Mulligan, performing in The Cobblestone, Dublin 96

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96 Photo by the author, with Mr. Mulligan’s permission.
3.1  The Uilleann Pipes

The Irish term for the uilleann pipes is *piobá uilleann*, which means ‘pipes of the elbow’. 97 Both elbows are used when playing; one to pump the bellows and the other to control the release of air and - to some extent, the volume. An earlier name for the instrument was ‘union pipes’. 98 This name addresses the fact that there are three elements to the pipes: the chanter, the regulators and the drones, and these three together form a union when playing.

**Fig. 19 Séamus Ennis’s uilleann pipes** 99

The chanter is like a fife, held and played with both hands, but the air comes from bellows, not the piper. The chanter has been treated as a transposing instrument for

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99 Photo by Oliver Murray, from *The Dance Music of Séamus Ennis*. 
centuries, with the lowest note designated as D4.\textsuperscript{100} The basic range of the chanter is from D4 to E6, with chromatic tones available through the use of keys or cross fingering techniques. The regulators, which are typically used to create harmonic accompaniment, are controlled by keys typically depressed by the side of the right hand, and sound notes diatonic to D mixolydian or G major. The drones usually sound continuous pitches D2, D3 and D4 and are activated by switching a key on or off.

\textbf{Fig. 20 The regulators of Éamonn Galldubh’s uilleann pipes}

\textsuperscript{100} Pat Mitchell, \textit{The Dance Music of Séamus Ennis} (Dublin: Na Piobaoiri Uilleann, 2007) p. xix.
Uilleann pipes were developed from earlier forms of bagpipes, which depended on continual flow of air to produce sound. With continuous airflow, it is necessary to insert an ornament to ‘cut’ the note in order to sound consecutive notes of the same pitch. This technique has carried over into ornamental technique on the uilleann pipes.\(^{101}\) A distinguishing feature in the uilleann pipes is the ability to stop air flow by means of depressing the chanter on the knee.\(^{102}\) Being able to play the chanter on or off the knee offers a small range of variety in tone, dynamics, and articulation. While it is possible to insert rests or staccato notes on some pitches, articulation on the uilleann pipes is

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controlled primarily by the fingers. The range of articulation is narrower than that of a tongued wind instrument, but informed choices will offer subtle variety. For example, using a grace note to cut a note from higher than the step above will make a stronger attack on the goal note.

Ornaments in Irish traditional music are used particularly to emphasise rhythm. Common ornaments are shown in Figure 23. The names for the ornaments vary among players and regions.

Fig. 23 Common ornaments in Irish traditional music

<table>
<thead>
<tr>
<th>cut</th>
<th>tap</th>
<th>pat</th>
<th>double cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>long roll</td>
<td>short roll</td>
<td>cran</td>
<td></td>
</tr>
</tbody>
</table>

Grace notes (common names include ‘cuts’, ‘taps’, or ‘pats’) are performed much more quickly in Irish tunes than in western art music, almost to the point of being inaudible. Pat Mitchell, author of *The Dance Music of Séamus Ennis*, notes that Ennis’s use of two types of grace notes within a line of melody - one a step above or below, one at a wider interval, resulted in ‘virtually inaudible textural changes which kept each repeat of the tune sounding fresh and exciting’. According to Mitchell, the grace note and the roll (use of both upper and lower grace notes) are the most frequently used ornaments across a wide range of musicians playing Irish traditional music. The *cran* is an embellishment whose development may be specifically attributed to uilleann pipers, typically used to adorn the lowest pitch of the chanter, where a roll is not possible. It is an elaborate ornamentation in which multiple grace notes of differing pitches divide a note, creating a sort of warbling sound, and can be said to offer the quintessential piping sound.

Styles and manner of playing vary among uilleann pipers. Some pipers will rarely use the drones, others will make great use of the regulators. An open (off the knee), legato style of playing is associated with the travelling community (Finbar Furey, for example), while a closed (on the knee) style with more staccato passages is associated with an urban, Dublin community (Séamus Ennis, for example). According to master piper, David Power, ‘There is no standardisation in the way they are learned or played - each player will have different abilities’.

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106 Ibid, p. 77.
Given the breadth of styles and lack of standardisation, it would seem advantageous to compose for the uilleann pipes with a specific piper in mind. In developing a working relationship with a piper, the question is raised: is the composer writing for that particular piper, a piece customised to the skills and preferences of one, and not necessarily accessible to pipers at large? The answer, of course, will depend on upon the goals of the composer and whether or not it is the composer's intention to contribute to the repertoire of an individual or to the general body of works written for the uilleann pipes.

Sean Davey and Kevin Volans are amongst the many contemporary composers who have written works for specific pipers. Davey’s *The Brendan Voyage*, was composed for Liam O’Flynn, and Volans’s *Gol Na mBan San Ár (The Lament of the Women at the Slaughter)* was composed especially for David Power. Both works differ from the traditional uilleann pipes repertoire in that the pipes are supported by an orchestra of western orchestral instruments. In both instances, however, the composers rely upon the style and technique imparted by the soloists to shape the music. Despite the novel setting, O’Flynn and Power perform music which remains by and large within idiom.

*The Brendan Voyage* is a suite in ten movements for uilleann pipes and orchestra. Composed in 1979, it is a seminal work in that it is the first major example of the inclusion of uilleann pipes in a western orchestral setting. A review of the recording of the suite seventeen years after its release is testament to a lasting impression, calling its ‘critical and popular success’ as ‘ground-breaking as the music itself’, and naming the work as ‘an

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absolute cornerstone for so many subsequent developments’. The pairing of the uilleann pipes with an orchestra was to have such an impact that thirty years later, on 8 July 2010, the Irish public broadcaster Raidió Teilifís Éireann (RTÉ) broadcast a special program entitled, ‘The Brendan Voyage - Celebrating 30 Years’, to commemorate the thirtieth anniversary of the composition.

In *The Brendan Voyage*, the uilleann pipes are definitely the main character (the voice of the medieval boat), while the orchestra plays a supporting role in a work built on idiom and traditional harmonies. Davey’s intention to adhere to and to showcase customs of Irish traditional music can be deduced from his own words, taken from an interview with Tara Music Company.

In the past, classical composers have had a somewhat imperial attitude towards vernacular music. ‘They took the tunes and brought them into the concert hall,’ says Shaun Davey. ‘But where was the traditional musician? They left him back in the pub.’

There are instances in *The Brendan Voyage* of the orchestra taking on some of the gestures characteristic of the pipes, demonstrating a momentary exchange of influence between the two genres, western art music and Irish traditional music. For example, in the sixth movement, ‘Mykines Sound’, the brass takes on the role of the regulators, providing the harmonic punctuation typical of the regulators. Later in the same movement there is a solo passage for the pipes in which the regulators feature prominently, and this is a slight deviation from what is typically expected of the instrument.

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Volans’s *Gol Na mBan San Ár (The Lament of the Women at the Slaughter)* was premiered in 2018 by David Power and the RTE Orchestra. Volans wrote his own notes for the programme, in which he addresses three factors he found necessary to consider as he embarked on writing a piece for the uilleann pipes: notation, tuning and timbre, and original context.

This commission presented me with several problems to consider: firstly, uilleann pipers traditionally don’t use music notation to learn new pieces, and work by ear and from memory; secondly, the instrument has of course not been modified to accommodate the needs of Western ‘classical’ music (the current form of the pipes is 18th century); and not least it is a national treasure, which demands a certain respect. So I tried to find a musical style which, while not being ‘folksy’ in any way, took into account the traditions of the instrument. A few times in the piece I made reference to David Power’s version of the traditional piece *Gol Na mBan San Ár (The Lament of the Women at the Slaughter)*. Thanks to David’s extraordinary enthusiasm, hard work and talent, I was largely relieved of the need to take the player’s problems into consideration.

The last line, ‘I was largely relieved of the need to take the player’s problems into consideration’, belies a sense of Volans working closely with Power as he composed the piece. An examination of the score will corroborate this.

Placing the uilleann pipes in a new context, in a performance with western orchestral instruments, necessitates an awareness of the dynamic balance within the ensemble to ensure that the pipes are not overpowered in volume. In *Gol Na mBan San Ár*, however, the pipes are often overwhelmed by the orchestra, despite being electronically amplified in the premiere performance. As a member of the audience, I witnessed Power

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111 I attended the concert at which it was premiered, on 22 September 2018 in the National Concert Hall in Dublin.
working at switching the drones on and off, but the presence or lack of presence of the 
drones in the texture was not readily discerned. Fleeting melodic lines performed later in 
the work on the chanter are also overpowered by the orchestra. In an interview with the 
online Irish magazine, *The Journal of Music*, Volans says that he sometimes allows ‘the 
orchestra to envelop and almost drown the soloist on occasions, in some virtuosic waves of 
sound’. He adds, ‘I don’t know if I achieved a perfect balance – it was one of the most 
difficult commissions I’ve tackled’.  

The piece is subtitled a *Concerto for Uilleann Pipes and Orchestra*, yet the material 
written for the pipes limits their ability to shine as a featured solo instrument. Much of the 
material involves long, almost static phrases, as in bars 2-10 (a motive which is repeated 
several more times), and in bars 54-73.  

**Fig. 24 Gol Na mBan San Ár, bars 1-10**

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114 A perusal and pre-published score of the work was generously offered by Volans.
Only occasionally is the chanter used to deliver lyrical lines capable of the instrument. Examples include two snippets of lyricism in bars 125 and 141, and longer lines in bars 149-57 and bars 170-9, as seen in Figures 28 and 29.
It is not until bar 518 that the pipes are assigned a more active role, with a 6/8 melody in the chanter punctuated by chords on the regulators; however, this is enveloped by similar rhythms played forte in the orchestra. The relief in melodic stasis, which is nonetheless obscured by the orchestra, continues only until bar 585, after which the pipes return to the passages of long held notes.

It is certain that Volans understood that the music written for the uilleann pipes will be heavily ornamented by the player, yet he made scant attempt to shape the outcome, including very few notated embellishments. On the other hand, articulation for the orchestra is heavily notated. The many staccato notes and phrasing that is idiomatic to western European orchestra have the effect of distinguishing the two realms as separate, as there is little interaction or exchange of influence between the genres.

Volans writes in his program notes that he took into consideration the tradition among uilleann pipers to learn new music by ear and from memory, not by reading music. A reliance on oral transmission is reflected in the lack of expression and articulation
markings for the uilleann pipes in the score. Phrase and dynamic markings appear in the uilleann pipes part quite sparingly throughout *Gol Na mBan San Ár*. When a dynamic is indicated, it is always forte, despite the capability of the pipes to vary dynamics, however narrow that variance might be. There is a single instance of articulation notated with two staccato markings in bar 240. Grace notes are specifically notated in just nine separate instances. The sparse indication of dynamics, articulation, and ornamentation for the pipes in Volans's score leaves much room for interpretation and for the mood and tone of the music to be determined by the musician, not the composer. In this sense, Volans offers the soloist the freedom to incorporate Irish idiom according to his own custom and preferences.

In their compositions for the uilleann pipes, both Davey and Volans take into account the pipers’ traditions, and express through their words as well as their music a desire to incorporate (one might even say to pay homage to) idioms of Irish traditional music. While both works place the uilleann pipes in a new context, the music written for the pipes does not stray very far from that which is typically performed or expected.

Indeed, I have discerned that among pipers there is a culture of resistance to new music for the pipes. Many pipers with whom I have spoken are sceptical about the idea of writing something new for the instrument. Terry Moylan, archivist for Na Píobairí Uilleann, expressed marked distaste for the idea, claiming that the wealth of good Irish music would be sullied by the addition of a new work with harmonies and gestures not typical of the Irish tradition.\(^{115}\)

\(^{115}\) Terry Moylan, personal interview. 5 March 2018.
Roger Doyle’s *Ceol Sidhe* (Fairy Music) is a contemporary work written for a trio of Irish traditional instruments: tin whistle, uilleann pipes, and Irish harp.\(^{116}\) In this composition, the uilleann pipes are performing with instruments of the same genre, and so the balance is easily maintained. The trio does not include western orchestral instruments, but the musical material effectively introduces non-idiomatic harmonies and textures. *Ceol Sidhe* will be further discussed in Chapter 6.1.

The three elements of the uilleann pipes - the chanter, the regulators, and the drones, offer much to explore. The ability to play non-diatonic notes on the chanter suggests that the pipes are suited to playing chromatic music. The regulators provide an opportunity to play multi-textured music, in the form of vertical simultaneities (not necessarily diatonic chords) or counterpoint. As the multi-faceted instrument is introduced to different settings, the ability to move beyond the scope of Irish traditional music is readily discovered.

3.2
Commentary on Moving Toward Home

Uilleann pipes are usually tuned in the key of D, and traditional tunes - when transcribed, are written down in the key of D or G. Moving Toward Home, however, begins without a pitch centre and moves through brief tonicisations of pitches throughout the piece before ending firmly in the key of D. The harmonies travel from relatively unmoored to securely anchored.

The composition employs harmonies and musical gestures which lie outside of the vernacular of Irish traditional music. This necessitated working with a piper who is not only able to read music, but one who was open to the idea of playing non-idiomatic music. After attending many Irish traditional music sessions and asking many musicians for references, I found a willing collaborator in Éamonn Galldubh, an excellent piper who reads music and is interested in exploring new compositions for the pipes.

During workshop sessions with Galldubh, he would occasionally proclaim that something in Moving Toward Home is impossible to play on the pipes; but then, after four or five tries, he'd have mastered the passage. I asked him if writing a piece which was not in the key of D would pose any particular problem, and he responded that he enjoyed playing chromatic passages. Once, while reading through a chromatic section I had written for him, he happily exclaimed, ‘Ooh, I get to play all these notes I don’t usually get to play!’

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118 Pipers interviewed include Joe McHugh, Terry Moylan, Néillídh Mulligan.
Several things were taken into consideration in the composition of *Moving Toward Home*: the balance of the ensemble; how little or how much to specifically notate dynamics, articulations, and ornaments; the influence of the characteristics of traditional music on the western orchestral instruments and vice versa; and whether or not and in what ways to use each of the three elements - the chanter, the regulators, and the drones. Each of these will be discussed in turn below.

As mentioned in Chapter 3.1, Doyle’s *Ceol Sidhe* demonstrates a successful balance of the uilleann pipes in a small ensemble. However, the instrumentation does not include western orchestral instruments. In composing *Moving Toward Home*, I was concerned that the uilleann pipes would be overpowered by the other instruments. This is addressed by assigning a lower dynamic to the clarinet, cello, and bassoon in sections where the uilleann pipes are to play a dominant line (for example, bars 111-20).

The desire to allow the distinguishing sound of the chanter to stand out from the ensemble informed choices in instrumentation for *Moving Toward Home*. I wanted to pair the chanter with a wind instrument of similar register. The clarinet was chosen for the ensemble instead of an oboe, because the timbre of the oboe is more similar to the uilleann pipes chanter.

The cello and bassoon were chosen for two reasons. First, they act as a pair of bass register voices set against the pairing of the treble register clarinet and chanter. Second, the ability to play long notes in the bass register offered their incorporation as a drone substitute. This aspect will be discussed later in this chapter.
In *Moving Toward Home*, the clarinet, bassoon, and cello incorporate techniques and gestures idiomatic to the pipes, demonstrating an exchange of cultural influence between two genres. Slides, glissandi, and grace notes which are typical in traditional uilleann pipe music are here assigned to the other ensemble parts. Reciprocally, the music written for the uilleann pipes moves beyond idiom. The melodic line of the chanter, for example, is highly chromatic and not rooted in the key of D, and features phrases of irregular length and syncopated accents. Atypical of Irish traditional music, the longer legato lines often feature tritones as structural intervals, and the grace notes throughout the piece are usually at an uncusommary interval of a tritone.

As noted in Chapter 3.1, the uilleann pipes have a much narrower range of dynamics than most western orchestral instruments, and articulation and embellishments are often added extemporaneously by the piper.119 Despite this, the music for the uilleann pipes in *Moving Toward Home* is liberally notated with a wide range of such markings. These markings are not to be taken as absolute, so much as they are to guide the player in the mood and expression expected. In addition, textual section headings are used to further advise the ensemble. With awareness of the great variety in styles of piping, the expression markings and textual headings are included in order to shape the performance.

In Irish traditional music, the ornamentation often occurs without premeditation, almost as a reflex. Sometimes this is due to an adherence to the idiom, and at other times it is because a repeated note or an certain interval leap would be impossible to play without the ornament.120 In composing *Moving Toward Home*, the question arose as to whether or

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120 Ibid, p. xxii.
not to specifically notate grace notes in the uilleann pipe part (the reader will recall that Volans had largely left the score to *Gol Na mBan San Ár* unembellished). Understanding that I could not predict with precision whether or when ornaments would be played, the decision was made to notate specific grace notes. I sought to control, when possible, the pitch content of the piece as a whole; the grace notes often perform a harmonic function. The grace notes notated in bars 25 and 26, for example, reflect and support harmonies reliant upon fourth chords.

The notation of the grace notes in the uilleann pipes part is reflected in the imitative gestures written for the rest of the ensemble. The grace notes at an interval of a tritone appear in all parts, for example. In this way, the ornamentation in the clarinet, bassoon, and cello serve to support harmonies as well as reflect influence of the traditional idiom on the western art music realm.

Close work with an experienced piper while composing *Moving Toward Home* allowed for experimentation to see what would be playable and what would be impractical. I learned, for example, that sudden stops in the upper register of the chanter are extremely difficult to play, especially when it is necessary to play the chanter ‘off the knee’. Galldubh found the following passage from the first draft of *Moving Toward Home* unplayable:

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**Fig. 30 Impractical passage, *Moving Toward Home* draft**
It is interesting to note that the opening and often repeated gesture of Volans’s Gol Na mBan San Ár sets the same pitch with the same impractical rests (see Figure 24). Unsurprisingly then, the repeated F5 in Volans’s piece was played by Power at the premiere without rests between, and preceded by a whole step grace note. In correspondence with Power, I learned that ‘any assumptions you make about the uilleann pipes and they way they work coming from a classical music perspective are likely to be wrong.’\textsuperscript{121} This confirmed the need to work closely with a piper during the compositional process.

To make my impractical passage playable, Galldubh suggested that I replace the quavers followed by semiquaver rests with dotted quavers notes, and transpose the line down an octave. The result is shown in Figure 31.

\textit{Fig. 31 Moving Toward Home, bars 84-5}

When considering the three elements of the ‘union pipes’, I elected not to use the drones in my composition. The entrance and exit of the drones would not be subtle, and their volume is not easily controlled. Instead of using the uilleann pipe drones, the bassoon

\textsuperscript{121} David Power, ‘Re: New From Entry. Contact Form.’ Message to the author. Email. 17 October 2018.
and cello imitate and expand on the concept of drone. Rather than being restricted to the single pitch D, the cello and bassoon play long notes on a variety of pitches, and often ‘drone’ a whole step apart, changing the idea of a drone from a pitch to an interval (for example, bars 1-10). A wide range of dynamics are used in the ‘imitation’ drones, in contrast with the relatively static dynamic level available to the uilleann pipes. The idea of the drone as a long held note is altered as well; repeated notes vary the texture while maintaining the pedal notes (for example, bars 94-6).

The shifting drone notes in *Moving Toward Home* allow for expansion of the harmonic realm of the piece beyond that which is idiomatic to the pipes. In fact, the piece does not have a firm pitch centre until the last sixteen bars, when it finally settles on D. Rather than coming from a scale structure, the harmonies and pitches at the start of the piece are generated from a musical cell of a fourth and a semitone. Such a deviation from the expected harmonic realm of the uilleann pipes necessarily requires playing of chromatic notes which, while available, are not typically used in traditional uilleann pipe music. After bar 104 the harmonies move from quartal-based to tertiary, with fleeting tonicisations until the final phrases and cadence in D major.

The regulators of the pipes are also used in a non-idiomatic manner. In traditional uilleann pipe music, the regulators serve to reinforce and support harmonies diatonic to the key of the pipes. The layout of the regulators offers ready access for the side of the right hand to depress diatonic chord tones. Rarely are single notes, rather than chords, played on the regulators. In *Moving Toward Home*, however, the regulators are not used to fill out traditional harmonies, and often require an alternate manner of depression. The use of
fingers to depress individual keys of the regulators is at times necessary, a marked
deviation from custom. Playing the regulators in this way effects the notes composed for
the chanter; notes that require the right hand on the chanter are not available.

In some instances the regulators are used to support and fill out fourth chords (in
bar 82, for example) or A minor chords in a temporary tonicisation (for example, in bars
104-9). At other times, the pitches played by the regulators do not function as chord tones
at all, but rather participate in a line of contrapuntal melody featuring dissonant intervals,
as it is set in syncopation against the voice leading in the chanter (for example, bars 111-9).

This novel use of the regulators presents a performance challenge to Galldubh, as
I’m sure it will to other pipers as well. As tricky chromatic runs on the chanter can be
mastered, it seemed probable that contrapuntal music written for chanter and regulators are
appropriate. Galldubh has assured me that Moving Toward Home is playable, if somewhat
difficult.

In Chapter 3.1, the question was posed as to whether it is appropriate to compose
with a specific uilleann piper in mind or to compose with the intention of broadening the
repertoire as a whole. The answer to that will be personal to each composer, and dependent
on the situation at hand. My collaboration with Éamonn Galldubh was invaluable in the
process of writing Moving Toward Home, as were interviews, emails, and listening
sessions with other pipers; however, it is my intention that the composition be accessible to
any piper. The liberal use of articulation, phrase, and dynamic markings, as well as the
suggestive section titles, serve to convey the expression and mood desired throughout the
piece, with the understanding that this expression will vary as styles and technique of the performers vary.

Through deviation from idiom with angular melodic lines, varying tonicisations, original contrapuntal use of the regulators, and a new interpretation and reassignment of the drones, *Moving Toward Home* offers a work for uilleann pipes which anticipates further exploration of new contexts for the instrument.
Introduction to Commentary on Under a Cobalt Sky

Under a Cobalt Sky is composed for clarinet, violin, and two Persian instruments, the tar and the santoor. The idea of writing for such an ensemble came to me after I was invited to attend a private rehearsal of the band named Tulca, a group four musicians playing the above mentioned instruments. Paul Roe, an academic and the clarinetist in Tulca, had invited me to sit in on their rehearsal and improvisation session. That took place in June 2018 at the Royal Irish Academy of Music.

In preparation for the session, my preliminary research on the santoor, the tar, and Persian classical music in general included listening to performances by reputed musicians such as Arjang Seyfizadeh’s Tali’e, Alizadeh Hossein’s Raz-e No, and Faramarz Payvar’s 30 Chaharmezra; and reading authoritative texts, including The Dastgāh Concept in Persian Music and ‘Form and Style in Persian Music’ by Hormoz Farhat, The Art of Persian Music by Jean During, ‘The Dastgah System’ by Ali Zomorodi, Classical Persian Music: an Introduction and ‘Contemporary Art Music in Persia’ by Ella Zonis, ‘Musical Values and Social Values: Symbols in Iran’ by Bruno Nettl, and ‘A Database for Persian Music’ by Paymen Heydarian.

122 Because the word ‘santoor’ is a transliteration from the original Farsi word،، santoor، variations in spelling will occur (santūr, santour, santoor). Not to be confused with other instruments of similar construct and similar name, the word ‘santoor’ here indicates the Persian instrument.

123 Tulca is a Dublin-based band, and its members are Paul Roe, clarinet; Ultan O’Brien, violin; Shahab Coohe, santoor; and Shayan Coohe, tar.


The mechanics, timbre and pitch ranges of the santoor and tar were studied, and a rudimentary understanding of Persian classical music was gained. This early acquaintance with the genre would later be deepened through personal observation of and interviews with Persian musicians, Shahab and Shayan Coohe, as well as continued research.

Further research led to several considerations for composing for ensembles which include santoor and tar. A balance in dynamics and texture is sought, with the understanding that both instruments have a quick decay in notes produced, and the tar sounds at a much lower volume than both the santoor and western orchestral instruments. Reference to idioms of Persian classical music and its form of composition allow for a reciprocal influence of the two genres. In an ensemble tuned to equal temperament, slides and bends have the effect of incorporating a microtonal element to the melodies.

4.1
The Tar and the Santoor

My introduction to Persian music came about through investigation of the santoor, a
dulcimer-like instrument, and the tar, a long-necked lute.

Fig. 32 A Persian santoor with mezarbs 126

The santoor is very like a hammered dulcimer. It is trapezoid-shaped, with nine (or
less often eleven) courses of four strings. Two hardwood bridges on either side of the
instrument divide the strings into three sections, called ‘yellow’, ‘white’, and ‘behind the
bridge’. The yellow strings are the lowest sounding strings, the white strings sound one
octave higher than the yellow, and the behind the bridge strings sound one octave higher

126 Photo by the Isfahan Music Museum.
than the white strings. The white strings are often tuned from E4 to F5, with the yellow and behind the bridge strings sounding an octave lower and higher; however tuning can easily be modified to accommodate different pitch ranges and different intervals within the steps.127 This tuning, however, must occur prior to performance. In addition, varying sizes of santoors allow for a wider variety of tuning.

The strings of the santoor are struck with feather-weight hammers called mezrabs. The ends of the mezrabs are often covered in cotton or other light cloth.

**Fig. 33 A Persian tar** 128

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The tar, developed in Persia in the mid eighteenth century, has a double-bowl body which is made of mulberry wood with a lamb skin membrane covering the top. In this way it resembles a banjo, a lute with a membrane stretched over the sound body and strings which are plucked with a plectrum. The neck has twenty-eight movable frets and three courses of double gauge strings. The strings of each of the three courses are tuned in unison, and the courses are typically tuned at a fifth and an octave, C-G-C for instance. Tuned in this way, the range of the instrument is C3 to A5.129

Both the tar and the santoor have an almost immediate decay of sound after the notes are struck or plucked. Lengthening of the pitches can occur only by means of tremolo, or repeating the pitch rapidly. The santoor has a bright metallic sound, capable of cutting through various instrumentations, whereas the tar has much softer volume than many other instruments.

The santoor, in comparison with the tar, clarinet, and violin, has a limited range of pitches, as chromatic notes are possible only by means of pre-tuning the instrument. The santoor is incapable of bends or slides, which are idiomatic to the other three instruments.

The vastness and diversity of subsets of Persian culture allow for a large body of folk music of great variety, and this music is classified into two discreet types: rural folk music and urban art music. The tar and the santoor are instruments typically used in both aspects of traditional Persian music.130

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130 Persian music has influenced various musical cultures across central Asia, the Middle East, north Africa, and southern Europe, so discussion of the genre may extended to a wide range of cultures.
Hormoz Farhat maintains that rural folk music and urban art music have little in common and that they are not influenced by one another. In *The Dastgāh Concept in Persian Music*, he distinguishes the two. About rural folk music, he states that ‘No definitive study of Persian folk music has ever been made as the sheer scope of such a task makes it forbidding’. In contrast, he describes urban art music as ‘a tradition within the domain of the memory of a limited number of musicians’. Bruno Nettl describes the urban art music as a genre accessible and understood by the social elite, with the majority of Persians regarding it as a ‘musical representation of a traditional past’. Jean During, co-author of *The Art of Persian Music*, offers a less rigid categorisation, stating that ‘regional music is equally traditional, … while sonnati music [i.e. urban art music] contains many regional elements, and cannot be separated from its popular roots’.

Discussion here will focus on urban art music, hereafter referred to as Persian classical music. A basic understanding of the construction of melodies in Persian classical music is necessary in order to understand the original context of the tar and the santoor and to use that understanding as a starting point for expansion of the repertoire through the composition of new works.

The traditional melodic repertoire of Persian classical music is called the *radif* (literally, a row or series), which is a collection of melodies preserved through oral tradition across many generations. Variations in the *radif* exist, as masters may add new

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melodies or reshape existing melodies, which are then passed down to their students. Occasionally a version of radif will bear the master’s name. The melodies of the radif can be further broken down into melodic fragments, called gushe. The performance of the melodies varies greatly from one performance to another and from one musician to another as extemporaneous embellishments are added. Nettl claims the radif is essentially ‘not really music’, because once learned it serves as the basis for composing and, more importantly, for improvising. Ella Zonis, author of *Classical Persian Music: an Introduction*, addresses the ‘problem of analysing improvised music’ with the suggestion: ‘… set aside the complete performance and study the material used as a basis for improvisation. In other words, once the model for improvisation has been clarified, the way the model is used in performance can be investigated.’ The radif is the material upon which improvisation is based.

The melodies of the radif are organised into tonal spaces, called *dastgāhs*. The present-day system recognises twelve groupings of dastgāhs, which represent more than sixty forms. Common dastagāh tunings are shown in Figure 34.

Dastgāhs are like modes in that specified pitches and intervals define the dastgāh, which in turn govern the melodic choices, but they differ from modes in that they are not based on or confined by an octave.

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Fig. 34 Common dastgāh tunings

Shur

Hornāyun

Bayāt-e Esfehān

Segāh

Chāhārgāh

Māhur / Rāst Panigāh

Navā

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Another difference from modes is that dastgāhs are not used to generate harmony.\(^{141}\) Persian classical music is of a primarily melodic nature, one which does not use a system of chords or vertical simultaneities to support the melodies. It does not rely upon polyphony, but on the many modal possibilities inherent in the combination of gushe, which are highly embellished in performance.\(^{142}\) Therefore, to compose a polyphonic and harmonic work for tar and santoor is to deviate from the standards of Persian classical music.

Three separate theories about Persian modes and ‘scales’ have been proposed since the early 20th century, two of which divide the octave into equidistant intervals. The first, put forth by composer Ali-Naqi Vaziri, suggests a 24-note-quarter-tone scale as the basis for Persian music; the second, proposed by physicist Mehdi Barkešli, suggests a 22-note-quarter-tone-scale.\(^ {143}\) The 24-quarter-tone scale, developed by Vaziri in the 1920s, came after his exposure to European classical music and its system of equal temperament. Vaziri’s scale has contributed to the now commonly used symbols of koron, to lower a quarter-tone, and sori, to raise a quarter-tone.\(^ {144}\) Recognising that equal temperament allows for cultivation of a harmonic system, Vaziri sought to apply this concept in an effort to develop a harmonic practice in Persian music.\(^ {145}\) The Vaziri theory has been widely used


\(^{144}\) Ibid, p. 9.

\(^{145}\) Ibid, pp. 10-15.
throughout the twentieth century; however, both of the systems of equidistant intervals were deemed irrelevant by Farhat.¹⁴⁶

Finding division of the scale into exact intervals to ‘suffer from a tendency to accommodate certain western concepts’, Farhat proposed a third theory in 1990, which is based on flexible intervals. Unlike the theories proposing equidistant intervals, Farhat’s theory avoids any use of the term ‘scale’. In his theory, the whole-tone and the semitone are relatively stable, with the whole-tone being slightly larger than the equal temperament whole-tone, and the semitone significantly smaller than the equal temperament semitone. The theory is supported by the argument that Middle Eastern instruments are incapable of producing intervals of such precision.¹⁴⁷ It can be assumed, then, that Farhat’s recently developed theory supports and seeks to preserve a system of melodic music, one without polyphony or vertical harmonic structures.

Because the radif is learned by rote and further embellished or reshaped according to tradition and experience, composition in Persian classical music never developed as an art form separate from performance. The music, thus, depends on both composition - through the dedicated memorisation and internalisation of traditional melodies, and improvisation - an integral part of the performance and expression of the melodies.¹⁴⁸

Due to the elite nature of Persian classical music, as well as its improvisational component, it has proven difficult to discover contemporary art music works composed for

tar or santoor and western orchestral instruments. Both the tar and santoor have been incorporated into the progressive rock opera, *Jeff Wayne’s Musical Version of the War of the World*.\(^{149}\) Despite the fact that the opera was widely consumed, ranking sixteenth on the 1978 Billboard chart, the impact of the incorporation is mitigated, because both instruments are obscured by dense textures and electronics which mimic their timbres.\(^ {150}\) Without reading the credits in the liner notes, one might not detect that the tar and the santoor are part of the ensemble.

A rare example of a western art music composition which incorporates a Persian instrument into an ensemble with western orchestral instruments is found in *Concertino for Santoor and Orchestra*, written in 1959 by Hossein Dehlavi and Faramarz Payvar.\(^ {151}\) The work is notable for its polyphonic support of a melody associated with Persian classical music. The Tehran Times writes that Dehlavi ‘made strenuous efforts to adapt melodies in Iranian music for orchestral performances’.\(^ {152}\) While the three movement work is a stunning showcase of the santoor, in which the soloist plays melodies based on dastgāhs, these melodies are supported by harmonies which are largely built on idioms of neoclassical western art music. In the third and final movement, the Persian melody is

momentarily echoed by the orchestra; however, there is little else in the way of cultural exchange between the soloist and the orchestra.

Shahab Coohe, an Iranian-born santoor player and member of Dublin-based bands Tulca and Nava, integrates improvisation into his compositions for tar, santoor, and western instruments. He explains his method of composing for the band Nava:

Whenever I start to compose for Nava, it’s not that I sit down and decide to compose for the band. Because the way we compose, it’s mostly teamwork, so we start to have a team together and we start to complete it all together, adding things. Each person would add a nice thing and we complete a piece together. So I might compose something and it would be my tune, but it’s mostly a teamwork, and we all work together. ¹⁵³

Combined influences of Irish traditional and Persian classical music are evident in the music performed by the band Nava (meaning ‘nice sound’), which explores ‘the relationship between the ancient musical cultures of Ireland and Persia’. ¹⁵⁴, ¹⁵⁵ In an interview discussing Nava’s recently released recording, Tapestry, Coohe relates his immediate grasp of the similarities between the two genres, which he realised shortly after he and his brother, Shayan Coohe, moved to Ireland from Iran:

Since the first day we came to Ireland, I heard Irish music, I immediately noticed the similarities and the similar things with Iranian music and Irish music. … I will start to explain that the only difference that I can say is the concept of Persian music and Irish music, it is a bit different, because we have more freedom in Persian music. So we would improvise more and we wouldn’t play the same thing many times. But in Irish music you have one theme and one tune, and we keep repeating it. But the similarities

are the melodies and the rhythms. And how we repeat one tune 
in Irish music and in Persian music are very similar, so itshan’t be  
‘repeat one tune’. We try to [vary] it and add a little thing to it,  
and try to make it more beautiful and more exciting as we play a tune.156

Evident in Coohe's explanation, as well as the music performed by Nava, is the notion that  
the combination of Irish traditional and Persian classical influences produces music which  
is equal parts composition and improvisation.

In a personal interview with Coohe, he stated that it is not common practice for  
either him or his brother, Shayan Coohe, to incorporate microtones, which are a feature of  
Persian classical music, into ensembles with western orchestral instruments.157, 158 He  
described two extended techniques which he enjoys using quite a bit and which are not  
idiomatic to Persian classical music, implying that traditional Persian musicians may not  
like that he uses these techniques. The first, natural harmonics, is a straightforward  
technique, often used in western art music. The second is his own innovation: he turns the  
mezrab upside-down and strums a group of strings with the wooden end of the mezrab.

The music performed by the bands Tulca and Nava is played in equal temperament  
tuning. This directly opposes Farhat’s argument that Middle Eastern instruments are  
incapable of playing precise intervals. A compromise between the seemingly disparate  
realms of Persian classical music and western art music may be found in Dehlavi’s  
*Concertino*, in which microtones in the horizontal sit atop the relative accessibility of an

157 Shayan Coohe is also a member of both Tulca and Nava.  
158 Shahab Coohe, personal interview. 31 July 2018.
equal-tempered vertical. Composed especially for the members of the band Tulca, *Under a Cobalt Sky* is also composed for an ensemble tuned to equal temperament. Slides and bends are featured throughout the composition, and the resultant microtones participate in the horizontal realm of the work.
4.2

Commentary on *Under a Cobalt Sky*

*Under a Cobalt Sky* is a work for two western orchestral instruments, the clarinet and the violin, and two Persian instruments, the santoor and the tar. A cultural exchange unfolds between the two genres through timbral imitation, extended technique, and harmonic language and development.

It was written specifically for the band Tulca. Members Shahab Coohe (santoor player) and Shayan Coohe (tar player) are both skilled music readers. The work was composed with this fact in mind.

Relative dynamics are used throughout the piece to address balance within the ensemble: the dynamic notations for the tar are louder than the upper three instruments, in order to accommodate for the fact that it is a softer sounding instrument.

As noted in Chapter 4.1, sounds played on the tar and the santoor have an almost immediate decay. Tremolo is used throughout the piece to simulate longer held pitches, in imitation of the clarinet and the violin. Likewise, pizzicato and staccato notes in the violin and clarinet imitate the decay of the tar and santoor.

An extended technique is used to sound the first notes played by the santoor in *Under a Cobalt Sky*. This technique was described to me by Shahab Coohe, and it is not used in the performance of Persian classical music.\(^{159}\) The symbol above the dyad in the first bar indicates that all pitches from D to A are to be struck as a rolled chord, using the

\(^{159}\) Shahab Coohe, personal interview. 31 July 2018.
wooden end of the mezrab, not the cotton-covered end normally used to hammer the strings. The use of the wooden end of the mezrab produces a loud and dramatic sound, and the decay is slightly longer than that of hammered notes. The softer dynamic indicated in the next bar is not possible using this technique, and the chord, this time rolled down from A to D, is to be struck using the thumbnail.

**Fig. 35 Under a Cobalt Sky, bars 1-7**

In bars 10-24, the texture is thin in order to introduce the santoor and tar and to allow the listener to appreciate their timbre. The E Phrygian mode is introduced with the oscillating E-F semitone. While the Phrygian mode is used rather infrequently in western art music, its characteristic half step between the first and second degrees is similar to the *Shur*, the dastgāh which is most often played in Persian classical music.\(^\text{160}\) The Shur begins with an interval smaller than a whole tone.\(^\text{161}\) This is followed by natural harmonics played by the santoor and tar, a second technique which is non-idiomatic.\(^\text{162}\) Thus, within the first

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\(^{161}\) See Figure 34 for an illustration of the dastgāhs, including the Shur.

\(^{162}\) Shahab Coohe, personal interview. 31 July 2018.
twenty-four bars of *Under a Cobalt Sky*, the santoor and tar play music which both demonstrates and expands on the sound typically heard from the instruments.

As Persian classical music is melodic, and not harmonic, it is not especially common to roll chords on the santoor or the tar. Dyads and chords are indeed played on the instruments in the performance of Persian classical music, but these act as accents within a melodic line, not as generators of harmony. Throughout *Under a Cobalt Sky*, the santoor and tar participate in the generation of harmony by means of dyads and struck or rolled chords, as well as arpeggiated chords. This differs from the role of the santoor in Dehlavi’s *Concertino for Santoor and Orchestra*, in which the santoor is supported by, but does not participate in the generation of, harmony.

As with the music of the bands Tulca and Nava, the concept of a pre-existent base tune which is embellished and varied is a foundational aspect of *Under a Cobalt Sky*; however, there are differences in implementation of the concept. Whereas improvisation is an integral part of the creation and performance of the bands’ music, *Under a Cobalt Sky* is precisely notated. Further differentiation lies in the fact that the base tune of *Under a Cobalt Sky* is fragmented, and the fragments are reordered.

The base tune incorporated into *Under a Cobalt Sky* was conceived before beginning to compose the piece. The tune was then split into two: a nucleus tune and a subordinate tune, and so the relationship between the two tunes pre-exists the composition. The subordinate tune is an outgrowth of the nucleus tune, but in *Under a Cobalt Sky* it is used to foreshadow the first statement of the nucleus tune.
The tunes are not presented at the start of the piece. Instead, the nucleus tune is embedded in the centre, in bars 63-9, and the subordinate tune appears before the nucleus tune in bars 24-9. The subordinate tune is generated from the rhythmic gesture in the second part of the nucleus tune, found in bars 66 and 69 (see Figures 36 and 37).

Fig. 36 Under a Cobalt Sky, bars 62-9, initial statement of the nucleus tune
The initial statement of the subordinate tune is set in E Phrygian, and the first statement of the nucleus tune is in E minor. Alternation between F natural and F sharp in the piece suggests a flexibility of the interval between the first and second scale degrees (see bar 27, in which the santoor F natural is followed by an F sharp in the tar). This is reinforced when, beginning in bar 46, a C sharp is introduced within a B Phrygian context.

As mentioned in Chapter 4.1, the santoor is tuned prior to performance, and is unable to introduce chromatic notes mid-performance. This effects the role the santoor is able to play in harmonic modulations. In order to allow the santoor to participate in modulating passages, Under a Cobalt Sky calls for the santoor player to alternate between two differently tuned santoons. Santoor 1 is to be tuned in E Phrygian, with the white
strings sounding D4 to E5. Santoor 2 is to be tuned in B Phrygian, with the white strings sounding A3 to B4. Santoor 1 has an F natural, and Santoor 2 has an F sharp. In bar 34, the santoor player switches from Santoor 1 to Santoor 2 in order to play the second variation of the subordinate tune, which is in B Phrygian.

The many bends and slow slides played by the violin, clarinet, and tar in Under a Cobalt Sky imply microtonality; however, this differs from the microtonality found in Persian classical music. In Under a Cobalt Sky, both Santoons 1 and 2 are to be tuned in equal-temperament, and the harmonic material of the work is not derived from any dastgāh. As in Dehlavi’s Concertino for Santoor and Orchestra, the microtones inhabit the horizontal aspect of the piece, while the vertical, harmonic structure is built on intervals derived from an equal-tempered scale. Neither through pre-tuning of the santoor nor the use of koron and sori symbols are microtones precisely designated; rather, the aleatoric nature of the bends and slides produces a sense of microtonality that may be associated with more timbre than with pitch.

Under a Cobalt Sky places the santoor and the tar in a non-idiomatic context, as they participate in the generation of harmonic material in an ensemble with western orchestral instruments. Expansion of the musical gestures which are not idiomatic to Persian classical music is achieved through the use of extended technique. The timbral gap between the two pairs of instruments is bridged through reciprocal textural imitation: staccato and pizzicato in the clarinet and the violin, and tremolo in the santoor and the tar. This, together with references to traditional musical forms through embellishment of
melodies and the allusion to Shur, allows for a cohesive exchange between pairs of instruments from two different genres.
5
Introduction to Commentary on Zephyr

My interest in the *xiao*, a Chinese vertical flute, began while I was in Hong Kong studying the *dizi* (also known as *di*), a Chinese transverse flute. My instructor presented me with a xiao as a means to expand the study of Chinese flutes, and I asked what the instrument is called. Unable to find a suitable word in English, he said simply, ‘It is a flute for sitting under a tree.’ The xiao produces a delicate, breathy tone of low volume, an apt vehicle for soft melodies of a meditative nature.

Before composing for the xiao, I experimented with my collection of xiaos of varying sizes (see Figure 38), playing traditional Chinese folk tunes, such as ‘Suzhou Scenes’ and ‘Lady Meng Jiang,’ as well as tunes from other genres, such as Irish traditional and western art music. Playing music not specifically written for the xiao expanded my understanding of the capabilities of the instrument. Further experimentation included discovering techniques that may be commonly utilised in other flute genres, but not typically performed on the xiao, such as vocalising into the flute, harmonics, and various means of articulation, such as fluttertongue and martellato.


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After continued study and exploration of the xiao and further research on Chinese folk music, I composed two pieces in which the instrument plays a prominent role. *Zephyr* is written for xiao, suspended cymbal, and cello, and *Bird Suite*, which is discussed in Chapter 8, is a multi-movement work for xiao, string quartet, and percussion. An additional piece, *Cloud Shadows*, is written for an ensemble of five flutes, including the xiao. *Cloud Shadows* is discussed in Chapter 7.

Neither *Bird Suite* nor *Zephyr* deliberately incorporates aspects of Chinese folk music. The compositions exploit distinguishing characteristics of the xiao, such as its

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164 Photo by the author.
timbre and manner of articulation, and explore new sounds. Nonetheless, it is necessary to understand the original context of the instrument as a point of departure for exploration.
5.1
The Xiao

A xiao is a vertical, end-blown notch flute, usually made of dark brown bamboo. It has six to eight finger holes and no keys. Xiaos have a range of two octaves and are most commonly made in the key of G (D2 being the lowest note), but xiaos in the key of F (with middle C as the lowest note) are also readily available. A bamboo xiao with a D2 fundamental was used throughout the research and composition process.

Fig. 39 Dark bamboo xiao with a D fundamental

It has eight finger holes, as opposed to the more common six- or seven-hole xiao, allowing for a greater number of chromatic notes without the use of cross fingering or half-hole fingering. Because the xiao is a narrow flute with a notched, split-edge mouthpiece, it takes considerably more breath to play than transverse flutes, as well as vertical fipple flutes of comparable size, such as the low D tin whistle.

165 Photo by the author.
As with many folk music genres, Chinese folk music is not tuned to equal temperament. Physicist and composer, Sin-Yan Shen, explains:

Chinese music never accepted the equal temperament system even though it was first invented in China. The rejection did not come as a result of a sudden decision, but was a result of infinite numbers of real-life experimentation with music performance. …. The Chinese musician in all of the temperament oscillation cycles in the centuries always returned to recognition of the just intervals.  

When playing the xiao, the minor and major thirds and sevenths above the fundamental sound slightly lower than those in equal temperament. Music in temperaments based on just intonation will sound very different when transposed within that temperament, because the intervals are being constantly adjusted to their lowest integral ratio. Playing a tune in B minor on a flute with a D fundamental, for example, will result in a very different tone than playing the B minor tune on a flute with an A fundamental. For this reason, it is not

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166 Photo by the author.
common to play music that is not in the key of the xiao or its relative minor. Chinese music notation is based on a moveable Do solfege system, and one notated melody can be read and played in a number of different keys by switching the xiao.

In Chinese folk music, themes of nature, such as mountains, flowing water, moonlight, or flowers, are not only common, but held as an ideal. Jin Jie, author of *Chinese Music*, writes, ‘Harmony between human beings and nature was the highest goal of the ancient sages. For this reason, Chinese music adopted nature as its first theme,’ and he cites Doaist, Confucian, and Zen philosophies to support this. Jie asserts that most traditional Chinese songs strive to provide examples of harmony between human beings and nature.\(^\text{168}\) Contemporary composer, Bright Sheng, states that, ‘Historically, music in China is meant for the performer's self-indulgence and cultivation of his or her spirit, not for the audience.’\(^\text{169}\) Introspection would appear to be prized over the display of a public performance.

Chinese folk instruments are solo instruments by tradition. When playing in an ensemble, the instruments play the same tune, but not quite in unison. In his article ‘Heterophony in Chinese Music’, Robert T. Mok asserts that contemporary Chinese folk music in all its forms (including vernacular operas, folk ballads and songs, and instrumental music) is heterophonic.\(^\text{170, 171}\) Monodic melodies are played or sung as a duo or group, but unison performance of the song is not sought. The performers embellish and

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\(^{170}\) Mok distinguishes ritual music, or *Ya Yüeh*, from contemporary Chinese folk music, called *Su Yüeh*. He identifies as *Ya Yüeh* as homophonic.

improvise the melody individually. Harmonic intervals between the performers are formed as a result of embellishment or staggering of melodic lines in a call and response type structure. Mok offers the following example of individual embellishment resulting in heterophony:

![Fig. 41 Heterophony in Chinese folk music](image)

While many westerners hear Chinese folk music as pentatonic, it is usually based on one of a number of heptatonic scales. Sin-Yan Shen, author of *Chinese Music and Orchestration: A Primer on Principles and Practice*, offers a reason for this misconception, stating that ‘the preference of minor third and major sixth masks the semitones, and as a result the scale becomes unclear to the Western ear.’ The melody from folk theatrical music of the Shaanxi province shown in Figure 42 illustrates the preference for minor thirds in melodic material.

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Structural notes in melodies are often the first, fourth, and fifth scale degrees, the equivalent of a fourth chord in western art music (for ex. A-D-E-A), as illustrated in Figure 43.

Embellishment is an integral aspect of Chinese flute melodies. In Chinese music notation, symbols indicate specific ornaments. Examples of notated ornamentation are seen in Figure 44, a line from ‘Suzhou Scenes’, a Chinese folk melody for either dizi or xiao.\(^{177}\)

\(^{175}\) Ibid, p. 2.
\(^{177}\) See Appendix C to view two full scores of ‘Suzhou Scenes’, one in Chinese notation and another transcribed into European music notation by the author.
The numbers in the score represent the solfege syllables, one being Do. The dots over the number indicate the second octave range. The cross-hatch symbol over the first note in the example indicates a quick grace note from the diatonic step above, in this case Re. The ‘T’ symbol over the second note indicates a quick grace note coming from the diatonic step below, in this case Si. Grace notes are to be played as quickly as possible and before the beat. The piece is in 4/4 time, and the vertical lines are bar lines. The ‘V’s at the end of bars 2 and 4 are breath marks. The lines below the numbers denote quavers. The dash after the 6 (or La) in the final bar means to hold the note an extra beat; the six is a minim. In the first bar, the pulse of the tune is immediately established by accenting the beats with grace notes, and variety is added to an otherwise two and a half beat repetition of Do.

As with Native American flutes, Chinese flutes use the lift-off as a means to add a percussive end to a note. Though a common embellishment, lift-offs are not ordinarily notated, but are added extemporaneously. Note the handwritten number four at the end of the line in Figure 44. This is the instructor’s notation for a lift-off. The melody is played in G, and the fingering for the lift-off (all holes open) corresponds to a sharp four. Thus the

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179 See Chapter 2.1 for a full explanation of the lift-off.
180 The excerpt from ‘Suzhou Scenes’ was taken from the author’s personal collection of Chinese flute study books, and the handwritten notation for the lift-off was drawn by her instructor, Nai Sin-sang.
fourth pitch of the scale is not meant to be heard; the number four here is shorthand for a somewhat complex embellishment.

The final line of the folk song ‘Lady Meng Jiang’, shown in Figure 45, serves as further example of idiomatic ornamentation. Here the embellishments do not emphasise the beat, as in the example shown in Figure 44. As with Native American ornamentation, Chinese ornamentation is often utilised to mark structural tones.\footnote{See Chapter 2.1 for discussion of Native American ornamentation.} A recurring melodic figure in ‘Lady Meng Jiang’ outlines the minor triad built on the second degree of the scale (E minor in the key of D major, as it is transcribed in Figure 45). This allows the E – G minor third interval to figure more prominently than the D – F sharp major third. The ornaments bring out the E minor triad, delaying the weight of landing on the tonic until the final bar. The grace note at the interval of a fourth in the penultimate bar adds variety to a repeated note, as well as marks the fifth scale degree (in this case, A). The wider interval of the grace note distinguishes this A from those that preceded it. Rather than a passing note in the E minor triad, it functions in the penultimate bar as the dominant to the tonic, strengthening the final cadence.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig45.png}
\caption{Final line of ‘Lady Meng Jiang’\footnote{Transcribed by the author.}}
\end{figure}
Composition of Chinese traditional music has for millennia been a non-professional endeavour. According to Jin Jiang, author of ‘The Influence of Traditional Chinese Music on Professional Instrumental Composition’, professional composition in China has a history of only about one hundred years.\(^{183}\) From its beginnings after the New Culture Movement in 1919, composers possessed a strong urge to develop a national style, which manifested in the application of western art music compositional techniques (counterpoint, form, and harmonies) to compositions with a distinct ‘Chinese flavour’ (clearly defined melodies with reliance on minor thirds).\(^{184}\)

In the second half of the twentieth-century, under the national slogan, ‘Art should serve politics’, twentieth-century compositional techniques of western art music were eschewed, and there evolved a preference for adapting existing Chinese folk songs to western neo-classical harmonies. An enduring example is the violin concerto, *Butterfly Lovers (Liang Zhu)* composed by He Zhanhao and Chen Gang in 1958.\(^{185}\) Its construct is similar to the *Concertino for Santoor and Orchestra* by Houssein Dehlavi, in that the folk melody occupies the melodic realm of the piece, with little impact from or effect on the harmonic language.\(^{186}\) In *Butterfly Lovers*, Chinese folk opera tunes are performed by an orchestra of western European instruments, including the soloist, and the melodies are supported by tonal harmonies typical of western neo-classical music. Considered to be the first classical violin concerto to be written by a Chinese composer, it has been hailed by

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\(^{186}\) *Concertino for Santoor and Orchestra* by Houssein Dehlavi is discussed in Chapters 4.1 and 4.2.
Chinese musicians as a pioneering work.\(^{187}\) However, the musicians play western orchestral instruments in a style with which they are accustomed through training, and in a harmonic language with which they are familiar; the work as a whole does not strike the listener as innovative.

*Butterfly Lovers* is occasionally performed on the *erhu*, a Chinese two string violin, arranged for an orchestra of Chinese instruments augmented by timpani and bassi.\(^{188}\) This adaptation of the original score offers a successful and non-idiomatic addition to the repertoire of the Chinese traditional orchestra.

By the end of the twentieth century, the manner of expressing national features in music had expanded beyond that of direct adoption to deeper exploration of traditional music using modern concepts and techniques.\(^{189}\) Frederick Lau, author of ‘When a Great Nation Emerges: Chinese Music in the World’, writes of the recent emergence of ‘East-West fusion compositions’, a type of music which ‘usually relies on the direct or indirect use of Chinese materials to evoke a special kind of “Chinese” sentiment or accent’, citing works by Bright Sheng, Ge Ganru, Chen Yi, and Zhou Long.\(^{190}\) These are examples of works for western orchestral instruments which are ‘adorned with Chinese musical gestures

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or inspired by their composers’ understanding and interpretation of Chinese culture and history’. ¹⁹¹

While modern compositions for western orchestral instruments imbued with aspects of Chinese traditional music abound, and there are many contemporary works written for sheng, a Chinese mouth organ, it has proven difficult to discover art music works written for xiao. A recent and notable example of a work for sheng is Šu, a concerto for sheng and orchestra, written in 2009 by Korean-born UnSuk Chin.¹⁹², ¹⁹³ A sheng is a large vertical mouth organ capable of playing several notes simultaneously. By taking the folk instrument out of its original context and setting it within innovative harmonies, Chin offers a new form of expression for the sheng. Šu breaks with the trend of setting Chinese melodies atop familiar western art music harmonies. Without explicitly incorporating ‘Asian-sounding’ harmonies, Šu successfully melds many different influences into ‘a unique and quirky creation that goes far beyond the sum of its parts’.¹⁹⁴

Chin exploits the breathy sounds of the mouth organ with complementary airiness from the string and percussion sections, and this allows the listener to engage specifically with the distinctive timbre. The unique timbre of the sheng emerges as a prominent and defining aspect of the work.

Šu draws from several sources of inspiration. Numerical proportions govern the temporal organisation, and the title is an Egyptian mythological symbol for air. Spatial

¹⁹³ I attended a performance of this work on 22 September 2018 in the National Concert Hall in Dublin by the RTÉ National Symphony Orchestra.
aspects are incorporated into the piece as some members of the orchestra play from the balcony overlooking the stage, giving a feeling of open-air music.\textsuperscript{195} It is undeniable that the theme relates to nature, as is customary in Chinese folk music, but the work as a whole moves far beyond what is typically expected of the sheng.

A rare example of a contemporary art music composition written for xiao is found in \textit{Li Jiang Etude No. 3}, for xiao, tape, and real-time digital signal processing (DSP) by Christopher Keyes.\textsuperscript{196} A resident of Hong Kong, Keyes is quite familiar with Chinese music, and seeks to integrate traditional material into new works. \textit{Li Jiang Etude No. 3} quotes a popular Chinese melody, and Keyes reflects that this is an aspect of the work that is appreciated by Chinese audiences, as it is familiar to them and in keeping with tradition.\textsuperscript{197} As noted in Chapter 1.2, Keyes digitally processes samples of the xiao to change the pitch and timbre, as well as the dynamics. A harmoniser feeds back the diatonic scale raised a whole-tone, and ‘the piece has moments of chromaticism, though always derived directly from the pentatonic scale itself.’\textsuperscript{198} Keyes extends original content by using it to build on his own musical principles, and we are reminded of Irlandini’s use of the term ‘re-significance’. However, Irlandini also writes that to digitally process sound samples of non-western instruments bypasses the transcultural exchange that would otherwise occur.\textsuperscript{199}


\textsuperscript{198} Ibid, pp. 54-5.

In *Zephyr*, which is discussed in Chapter 5.2, such an exchange is sought, and the piece has as a primary focus the distinguishing timbre of the xiao and its interaction with the cymbal and cello.
5.2
Commentary on Zephyr

Zephyr is a work for xiao, suspended cymbal, and cello. The word ‘zephyr’ means a soft, gentle breeze, and title reflects the breathy tone produced by the xiao. The Irish folk tune, ‘An Ghaoth Aneas’ (The Wind from the South), is loosely arranged and woven into the composition, further alluding to air. The old melody is played often in sessions of Irish traditional music, but its popularity did not factor into the choice to use the song in Zephyr. I first heard the tune as I played it from notation in a book of tunes for tin whistle. Never having heard the tune before, I played it more slowly than is customary, and the melody captivated me. I found similarities with Chinese folk melodies. For example, in both ‘An Ghaoth Aneas’ and the Chinese folk tune, ‘Lady Meng Jiang’, the second scale degree is emphasised. In ‘Lady Meng Jiang’, it is the lowest note in a recurring motive outlining a minor triad, and in ‘An Ghaoth Aneas’ there are three cadences on a repeated second degree. Additionally, the repeated first line of ‘An Ghaoth Aneas’ ends with a minor third, reminiscent of the common occurrence of minor thirds in Chinese folk melodies. I put down the tin whistle and played the tune on my xiao, and it seemed to suit the instrument perfectly.

The Irish tune is woven into both the xiao and the cello parts, and often the melodic line is split mid-phrase between the two, and held notes create harmony. This arrangement of the tune places the xiao in a non-idiomatic context, as it participates in polyphony and counterpoint.

Because of the soft timbre of the xiao, it proved necessary to write accordingly for the rest of the ensemble so that the other instruments would allow the distinguishing sound to be heard, and not overpower it. The piece begins in ‘mysterious stillness’, as per the tempo marking, as the cymbal uses a superball mallet to create an eerie, ghost-like sound to set the mood. The cello and (to a lesser degree) the cymbal imitate the breathy timbre and lower their dynamics by using extended techniques. *Solo for Cymbal*, by Gerry Hemingway, was influential in compositional choices for the cymbal.\(^{201}\)

Extended techniques used by the cello which are intended to lower the dynamic and imitate breath include:

- silent fingering = ‘hammer on’, finger the notes on the fingerboard without bowing;
- tonlos = bow directly on the bridge, little to no pitch discernible;
- air noise = ‘rauschen’, mute the string a little bit and use very light pressure, resulting in a breathy sound with a touch of pitch;
- circular bowing. Quarter note equals 48. One rotation per beat.

Extended techniques used by the cymbal intended to imitate breath include:

- a single hand roll with a wire brush;
- a scrape along the rim of the cymbal with a metal beater.

The first gesture played by the xiao exaggerates the breathy timbre. The symbol shown in Figure 46 (in bars 9 and 12) instructs the player to cover most of the split edge of

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the mouthpiece with the bottom lip and blow, resulting in air noise with no discernible pitch. Other extended techniques used by the xiao are the lift-off, as described in Chapter 2.1, and a quarter-tone bend. The bend is executed by lessening breath support while tilting the mouthpiece away from the mouth. A downward arching arrow indicates a bend of a quarter-tone down on the last quaver of the pitch, as seen in bar 19 shown in Figure 47.

Fig. 46 Zephyr, bars 9-15

Fig. 47 Zephyr, bars 16-22
The fact that *Zephyr* is written for only three instruments permits rhythmic flexibility in the group. The entrances are often staggered, allowing time for the players to respond to one another.

The small size of the ensemble limits the density of harmonies as well, allowing the just intonation of the xiao to be heard. The first pitch of the xiao is not heard until bar 18, accompanied only by a pianississimo roll on the cymbal. The pitch is altered - blurred, as it were, through a bend and a slide, exploiting the concept of alternate tuning. In bars 23-30, a B4 in the xiao is accompanied by G3 in the cello, but the G is produced through circular bowing, and the technique causes the pitch to fluctuate as overtones are sounded. The cello does not play an ordinario pitch until bar 31, and this is unaccompanied. When, in bars 34-6, both the cello and the xiao are playing full pitches, the tuning of the cello is blurred once again as it slides up and down a minor third. This gesture is reminiscent of minor third slides which are idiomatic to the *erhu*, a Chinese violin. It is not until bar 38, more than half way into the work, that the xiao and cello play unaltered pitches against each other. The highly embellished melodic fragments played by the cello in bars 50-51 and bars 54-5 against the unadorned line in the xiao suggest the heterophony that Mok identified in Chinese folk music.\(^{202}\) Compare the embellishments of the previously referenced ‘Lady Meng Jiang’ (Fig. 45) with the passage from *Zephyr* shown in Figure 49.

Fig. 48 Zephyr, bars 23-37

Fig. 49 Zephyr, bars 50-5
The grace notes throughout the work most often reflect a personal style, and not one derived from Chinese, Native American, or Irish traditional music. A notable exception is found in bars 61-2 and 65-6. In those bars the graces notes add variety to repeated pitches, a device utilised in both ‘Suzhou Scenes’ and ‘Lady Meng Jiang’.

As themes of nature are common in Chinese music, it is fitting that Zephyr is a work about breezes and breath. The first sound from the xiao is breath without pitch, and the piece concludes with a return to that sound, the final bar holding unaccompanied breath diminishing to silence. As contemporary compositions by Chinese composers often reference Chinese folk tales or melodies, Zephyr references a folk tune as well, albeit an Irish tune.

The use of extended technique in a novel trio of instruments is a departure from that which is idiomatic to the xiao. Zephyr represents my initial exploration of and experimentation with writing for xiao. The instrument offers much to be explored, and this is the first of three compositions in this portfolio which incorporate the xiao. As mentioned, Cloud Shadows, for five different flutes, is discussed in Chapter 7; and Bird Suite, a multi-movement work for xiao, string quartet, and percussion, is discussed in Chapter 8.
The tin whistle is among the group of instruments typically associated with Irish traditional music. It was an early and formative part of my own musical development, as I played the whistle as a child before beginning study on the western concert flute. Very little has been written about the tin whistle, probably because it has long been considered a toy instrument. Yet there is a complexity within the capabilities of the instrument which elevates it from the status of toy. Consider the following poem by Oliver Postgate, which tells of just such an evolution:

When I was nothing but a very little boy
My own tin whistle was a favourite toy
I played it madly; I played it sadly;
I played it gladly; for my private joy!
Now I’m a man I’ll play it, pleasure bent,
Not merely a toy but a real instrument.

The charming poem can be seen as an allegory of the history of the tin whistle, an instrument with humble beginnings as an inexpensive alternative to the recorder which has grown over the years to be included regularly in sessions of Irish traditional music.

I composed two works featuring the tin whistle, both of which draw on non-idiomatic material and settings. *Glissade* is set for high D tin whistle, slide whistle, alto flute, bass clarinet, and snare drum, and was inspired by the above poem. In *Glissade*, the

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whistle plays alongside a slide whistle, a instrument belonging to the percussion family of the orchestra, but one which can rightly be considered a toy in many settings. The role of tin whistle develops throughout the piece, and it concludes with a virtuosic cadenza. Cloud Shadows, which is discussed in Chapter 7, is written for five flutes from four different cultures, including the high D and low D tin whistles. The combination of varying timbres and tuning systems emphasises the tone of the different flutes over pitch.

The brief description and history of the tin whistle provided in Chapter 6.1 affords an appreciation of its development over the years from toy to an instrument which is capable of complex expression.
The tin whistle, an end-blown fipple flute with six finger holes, is associated with several different genres of folk music, but most often associated with Irish traditional music. Reputed players include Mary Bergin, Tommy Makem, and Sean Ó Riada.

It is a transposing instrument, with players often switching whistles to accommodate the key of the tune. The so-called high D whistle, its lowest note sounding an octave above middle D, is the standard in Irish traditional music, though up to nine other keys are widely available. The low whistle is a relatively recent development in Irish traditional music, a result of musical experiments led by Paddy Keenan and Finbar Furey in the 1960s and 1970s.

Manufacturing of the inexpensive and portable instrument began soon after tin plate became available at the end of the eighteenth century. Clarke Tinwhistles were the first major manufacturers, beginning in England in 1843, and they remain the oldest commercially produced whistles still on the market. In 1856 journalist Henry Mayhew documented the story of ‘Whistling Billy’, a young man who made his living busking with the whistle, and the story mentions Clarke as the largest manufacturer at the time.
Tin whistles today are made from a variety of materials (brass, nickel plated brass, plastics, aluminium, and wood), and the tones of the whistles vary greatly from one to another. Nickel plated whistles, for example, have a brighter timbre than wood whistles.\(^{212}\) It is my observation that whistles with metallic tones and a cutting edge are favoured in sessions of Irish traditional music over those with more mellow tones.

Tin whistles are tuned in the same way that recorders are tuned, by means of breath support. This limits the range of dynamics available, as blowing harder will raise the pitch, blowing softer will lower it. Some modern whistles are ‘tuneable’, meaning the head joint can be moved in or out, but this has little effect on the range of dynamics. The high D and low D whistles used in the composition and performance of *Glissade* and *Cloud Shadows* are tuneable and made of brushed aluminium by Alba Whistles (see Figure 50).

**Fig. 50** High D and low D tin whistles made of brushed aluminium\(^{213}\)


\(^{213}\) Photo by the author.
Ornamentation is a key feature of Irish traditional music, in which embellishments serve more to accent the rhythm than to adorn the melody.\(^{214}\) Agile and precise articulation through tonguing is possible on the tin whistle; however, the uilleann pipes have greatly influenced ornamentation for wind instruments. The method of articulating primarily via fingering on the uilleann pipes has carried over to the tin whistle.\(^{215}\) Tin whistles mainly use the same ornaments as the pipes, such as cuts, rolls, and crans.\(^{216}\) Slides are effective and easily performed on the instrument, as there are no keys covering the finger holes. Vibrato is achieved in two ways: either by fluctuation of the diaphragm or by quickly opening and closing two finger holes below the note being sounded. Finger vibrato is more commonly used in Irish traditional settings, despite the fact that, due to fingering, it is not possible for every pitch. This may be influenced by a preference for a brasher tone which is typically sought during traditional music sessions, one which allows the timbre to cut through the ensemble. Diaphragm vibrato results in a warmer tone and so has less carrying power.

The repertoire of the whistle is vast and ever changing. While there is a massive collection of songs passed from generation to generation through oral dissemination, new tunes are created and adopted all the time. Furey’s ‘The Lonesome Boatman’, written for a low G whistle in 1969, is an example of a relatively recently composed melody which is now considered part of the folk canon. However, there exists little in the way of new

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\(^{216}\) See Fig. 17, Chapter 3.1 for examples of Irish traditional ornaments.
contemporary art music written especially for the tin whistle. Two examples of contemporary compositions written for tin whistle are found in works by Irish composers, Roger Doyle and Philip Martin.

Doyle’s *Ceol Sidhe* (Fairy Music) was written in 1973 for a trio of Irish traditional instruments: high D tin whistle, uilleann pipes, and Irish harp. The piece opens with an exposed descending third played by the tin whistle. While the heraldic motive has the effect of defining the piece, the tin whistle functions throughout as an accent more than a key player. The sparsely textured work allows the timbre of each of the folk instruments to be heard and appreciated, but the uilleann pipes and the harp deliver the bulk of musical material. Assigning the tin whistle a non-dominant role deviates from Irish traditional idiom.

While triplet rhythms in *Ceol Sidhe* make reference to Irish traditional music, an aleatoric aspect to the harp’s arpeggios and a chromatic melody line in the uilleann pipes create non-idiomatic dissonances in the counterpoint between the two. Embellishments are notated in neither the tin whistle nor the uilleann pipes; yet the uilleann pipes melody, and not the tin whistle line, is liberally ornamented by the performer on the 2018 recording (provided by the Contemporary Music Centre Sound Archive). A whistler is capable of playing any interval or repeated notes without ornaments; if the ornaments are not specifically notated, the whistler may decide not to add any extemporaneously. A piper is largely limited to finger articulation and, for certain pitches, playing ‘off the knee’, and this often necessitates ornamentation whether notated or not.

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219 See Chapter 3.1 about uilleann pipes mechanics and ornamentation.
Ceol Sidhe offers new and non-idiomatic material for the Irish traditional trio. The role of the tin whistle, however, is not that of a soloist. This subverted role, while non-idiomatic, offers little in the way of exploration of the full capabilities of the instrument.

The same can be said of the role of the tin whistle in Philip Martin’s *Thalassa*, written in 1991 for voice, mixed chorus, children's choir, and large ensemble.\(^{220}\) An ensemble of western orchestral instruments is augmented with Irish traditional instruments: tin whistle, traditional violin, *bodhrán*, Irish harp, and accordion. Throughout the piece, the whistle doubles or plays homophonically with the flute, and does not stand alone as a solo instrument, but rather is absorbed by the ensemble.

Doyle and Martin are innovative in their setting and instrumentation for contemporary art music compositions which include the tin whistle. The participation of the tin whistle as an ensemble member rather than a soloist is non-idiomatic. In this role, however, there is limited opportunity for exploration of additional non-idiomatic features, such as uncharacteristic ornamentation and articulation, registral extremes, and timbral exchange.

Master whistlers such as Mary Bergin have certainly elevated the status of the tin whistle from toy to instrument. Her 1979 album, *Feadógá Stáin*, allows the tin whistle to be seen as a vehicle for virtuosity while remaining within the genre of Irish traditional music.\(^{221}\)

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Further exploration of the capabilities of the instrument, through the use of extended technique and non-idiomatic ornamentation and harmonic structures, serves to expand the perception of the whistle beyond that of a toy which is limited to a certain setting or genre, to one of a versatile instrument with a wide range of possibilities.
6.2
Commentary on *Glissade*

*Glissade* is inspired by Oliver Postgate’s poem, in which the tin whistle evolves from the status of toy to ‘real instrument’.²²² Written for high D tin whistle, slide whistle, alto flute, bass clarinet, and snare drum, the piece allows the tin whistle to emerge from the ensemble as a solo instrument capable of much variety of expression.

**Fig. 51** The high D tin whistle and the slide whistle used while composing *Glissade* ²²³

The choice of instrumentation in *Glissade* was influenced by the register and timbre of the tin whistle, as well as the poem. Two additional instruments in the ensemble can be associated with child’s play: the snare drum and the slide whistle. Picturing a child playing the tin whistle as a toy, one might also envision a playmate on a small drum. The slide

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²²² The poem appears at the start of Chapter 6.
²²³ Photo by the author.
whistle, though a standard feature in percussion sections of western orchestras, is considered a toy in many settings. The alto flute and bass clarinet compliment the flute-like timbre of the tin whistle while expanding the pitch range of the ensemble.

Through the use of extended technique, the slide whistle and the snare drum share in the metaphor of growth from toy to ‘real instrument’. Throughout the piece, the slide whistle is treated more like a wind instrument than a toy or a percussion instrument of indefinite pitch. The pitch production of the slide whistle is controlled to a certain extent, as the score calls for approximate pitches rather than free slides with random boundaries. In this way, a measure of control is held over the width of the intervals played by the slide whistle. Instructions for dynamics, vibrato, and articulation are notated, all of which are aspects of playing a wind instrument.

The capabilities of the snare drum are also exploited throughout the piece. *Tchik*, a work for solo snare drum written in 2003 by Nicolas Martynciow, was influential in compositional choices. A variety of techniques are employed in *Glissade*, such as finger taps, finger drags, cross stick, rim slaps, stick clicks, and swiping the drum head with a wire brush. This allows for variety not only in sounds produced, but in dynamics as well, aiding in the overall balance of the ensemble.

Restriction of the roles of the flute, clarinet, and drum in the first thirty bars provides aural space for the exchange between the whistles to develop. Key clicks in the flute and clarinet and light punctuation by the snare drum allow the tin and slide whistles to

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dominate the pitch realm. More percussion than pitch, the key clicks ally with the snare drum, serving to bridge the timbral gap between snare and tin whistle.

Beginning in bar 30, the sparse texture develops into a fuller sound in the ensemble as a whole. The slides exchanged between the tin and slide whistles are played by the clarinet and flute as well, and the key clicks previously played by the flute and clarinet develop into a melodic gesture played by the tin whistle and the flute.

From bar 85 and on, the tin whistle takes on more of a leadership role in the melodic development, as the accompaniment is reduced in volume to key clicks and canonic homophony in the flute and clarinet, and wire brush swipes and finger taps in the snare drum.

The piece concludes with an extended tin whistle solo, in which the whistle expands on the melodic gesture that has grown out of the key clicks in bar 19. This expansion develops into a virtuosic passage, featuring precise tongue articulation and registral extremes. The wide interval leaps are inspired by baroque works such as the Cello Suites by J.S. Bach and the Sonata in A Minor for Flute Solo by C.P.E. Bach, in which monodic music gives the impression of two lines of music, a duet between registers.

The cadenza begins and ends with D as a clearly defined pitch centre; however, the bulk of the cadenza does little to reinforce D major, the home key of the instrument. Instead, non-diatonic pitches such as D sharp/E flat, and C natural emphasise melodic direction rather than harmonic definition. The cadenza does not cadence on D until the final phrase.

Fluttertongue, which embellished the sextuplet ‘key click’ motive (for example, in bar 47), embellishes the key click motive in the cadenza as well, but then the use of the
technique is expanded to longer lines. This, in addition to the irregular rhythms, division of register, and fast moving phrases, render the cadenza a virtuosic passage, requiring a skilled performer.

The title, *Glissade*, makes reference to a sliding dance step. The ability of the tin whistle to perform slides is exploited throughout the piece as a foundational motive. While the piece can be said to begin and end with a pitch centre of D with a middle section in G major, the many slides in the tin whistle, slide whistle, and bass clarinet parts introduce a microtonality which mitigates the familiar brightness of a major key.

Appropriately, the slide motive is first introduced by the slide whistle. It’s as though the playful meandering of the tin whistle in the first eight bars meets a friend in the slide whistle in bar 9, as the two participate in a volley of slides.

The bulk of the composition is not in the key of D, which is the home key of the whistle for which *Glissade* is written. While the pitch material of the opening solo passage is diatonic to D major, the first cadence on D does not occur until the end of the solo, in bar 16. The cadence dovetails with the first presentation of the principle motive, and this firmly establishes D as the pitch centre. However, this is not reinforced in the following passage. Instead, a sliding semitone motive is introduced. This, rather than a pitch centre, becomes the defining feature. In fact, the tin whistle does not play another D until bars 49-50, where the D prepares for the modulation to G in bar 51.

From bar 92 the pitch centre is E, and the music takes on the feel of a minor key. A return to the pitch centre D does not occur until the cadenza, beginning in bar 118.
The style of ornamentation in *Glissade* is varied, and reflects the influence of both Irish traditional and Native American music, as well as my own approach to how grace notes effect harmony or motivic development. The double cuts in bars 38 and 54, for example, are idiomatic to Irish traditional music. In bar 38 the downbeat is strengthened by the gesture, and in bar 54 the double cut strengthens the entrance of the semitone motive on the third beat of the bar.

Whereas ornaments in Irish traditional music are typically used to accent the rhythm, ornaments in Native American music emphasise structural tones.\(^{225}\) In bars 2 through 14, the grace notes which are a step away from B and D mark those pitches as structural tones, rather than add weight to any particular beat. Emphasising B and D reinforces the momentary sense of B minor, delaying the weight of D as a pitch centre until the downbeat of bar 16 (see Figure 52). The lift-offs in bars 66 and 68 are also reflect Native American influence, and they serve to strengthen the cadences.

Some ornaments in *Glissade* are not influenced by either Irish traditional or Native American music, such as the grace note at an interval of a fourth in bar 15. This foreshadows the melodic fourth that characterises the motive presented in bars 16-20. The F sharp grace note before the downbeat of bar 11 adds weight to the A, which is the highest pitch of the opening solo and the dominant of the pitch centre. While it does indeed strengthen the downbeat, the grace note at the interval of a minor third adds more weight than would a grace note that is an idiomatic step away. In bar 39, the grace note at the uncommon interval of an augmented fourth serves to destabilise any diatonic aspect to the

\(^{225}\) See Chapter 2 for a discussion of ornamentation in Native American music.
passage, as well as emphasise the accented B played by the alto flute, bringing out the dissonance with the C sharp played by the bass clarinet.

**Fig. 52 Glissade bars 1-16**

In a slight deviation from idiom, the tin whistle is instructed to play with ‘warm vibrato throughout’. This suggests playing with diaphragm vibrato unless otherwise indicated to play finger vibrato, as in bars 27-8. As noted in Chapter 6.1, it has been my
observation that the carrying power of finger vibrato is favoured in Irish traditional music sessions over the warmer tone of diaphragm vibrato. In *Glissade*, finger vibrato is used sparingly, and as a means to shape the semitone motive.

The rhythms played by the wind instruments in *Glissade* are reflective of Native American influence. The rhythmically free opening solo passage connotes the free metre of birdsong, as is typical of Native American flute melodies.\(^{226}\) Throughout the work, the melodic lines of the whistle, flute, and clarinet do not adhere to a regular metre, but interact in a more conversational way. The snare drum repeats cells of rhythmic gestures, but often at uneven intervals, and so not in strict imitation of body rhythm, as would be characteristic of Native American drum music. For instance, the two phrases played in bars 39-41 are repeated in bars 43-5, but with an extra beat rest between them. The steadiness of a regular metre is interrupted, so to speak.

In *Glissade*, the tin whistle not only participates in an ensemble with instruments which lie outside the boundaries of its typical context, but it emerges as soloist in the new setting. Whereas the role of the tin whistle, which is typically soloistic in Irish traditional music, was subverted in the contemporary compositions discussed in Chapter 6.1, there is an opportunity in *Glissade* for the instrument to expand its artistic and stylistic expression. The piece concludes with a solo passage that requires skills such as those demonstrated by Mary Bergin in her performance of Irish traditional and baroque music. While the inclusion of the slide whistle makes playful reference to the humble beginnings of the tin whistle, the concluding cadenza, with its registral extremes, precise articulation, non-idiomatic

\(^{226}\) See Chapter 2.1 for discussion of rhythms in Native American music.
ornaments, and free metre, demonstrates a full capacity for a wide range of capabilities and technique. In this way, a new voice is given to the tin whistle, with much opportunity for further exploration.
7

Commentary on *Cloud Shadows*

*Cloud Shadows* is written for five different kinds of flute: high D tin whistle, Native American flute, xiao, western concert flute, and low D tin whistle. Inspiration for the piece came during a moment when I was standing on a high peak in Dingle, Ireland, enjoying a view of the valley below. As clouds passed overhead, the appearance of the landscape below changed as the light shifted. In *Cloud Shadows*, shifts in timbre among the flutes transfer this image from landscape to soundscape. As melodic fragments are passed from one voice to another, and as notes are exchanged during sustained chords, the perception of the melodic line and the chords changes. As pitches are swapped between the flutes, it is often the change in timbre that propels the piece forward or gives closure to a cadence, as opposed to harmonic progression.

*Fig. 53 Five flutes used to compose Cloud Shadows*\textsuperscript{227}

\textsuperscript{227} Photo by the author.
The five flutes have at their roots four different musical cultures. *Cloud Shadows* does not expressly incorporate the melodic idioms and harmonic languages of the different cultures, yet each of the flutes brings to the piece its distinct timbre and tuning system. While ensembles of instruments from varying cultures exist, research has not revealed pre-existing works for five different kinds of flutes. The Silkroad Ensemble, for example, perform on instruments from many different cultures, including the *ney*, a Persian flute, and two Japanese flutes, the *shakuhachi* and the *shinobue*, yet their body of work does not include a piece for an ensemble of flutes alone.²²⁸, ²²⁹

Works performed by the Silkroad Ensemble demonstrate a collaboration in which one culture is not dominant over another, and a new sound is born through the meeting of equals. ‘Ascending Bird’ is a Persian folk melody arranged by santoor player, Siamak Aghaei, and violinist, Colin Jacobsen.²³⁰ The two arrangers come from different musical backgrounds to create a work which reflects both. ‘Arabian Waltz’, by Rabih Abou-Khalil, fuses Arabic musical traditions with jazz improvisation.²³¹ The improvisational passages allow the musicians to take turns interpreting the melody. The various instruments enter into an imitative dialogue while retaining their distinct identities, including their different tuning systems.

In *Cloud Shadows*, the flutes are also instructed to play in the tuning systems idiomatic to the instruments. All of the flutes in *Cloud Shadows*, except for the western

²²⁹ Adam Gurczak, Artistic Programs Director, Silkroad. ‘Re: PhD research question.’ Message to the author. 3 September 2020.
concert flute, are tuned in just intonation or in relation to their fundamentals, not in equal temperament. The intervals between scale degrees on the whistles, the Native American flute, and the xiao are not equidistant, as they ordinarily are on western orchestral flute. The third, sixth, and seventh scales degrees are tuned about an eighth of a tone lower in just intonation, whereas the second and fifth scale degrees are tuned slightly higher.\textsuperscript{232} As the scale degrees are tuned in relation to the fundamental, each key will sound different from another. In \textit{Cloud Shadows} then, it is understood that an A played on a Native American flute with an F sharp fundamental, for example, will naturally (without alteration or accommodation) sound lower than an A played on the western concert flute. An F sharp played on a tin whistle in D will naturally sound lower than an F sharp on both the Native American flute and the western concert flute.

It is indeed possible for the five flutes to play in equal temperament, by means of alternate fingering and breath regulation.\textsuperscript{233} In \textit{Cloud Shadows}, however, each flute is to perform according to its distinct tuning, exploiting the individuality of each flute. To an ear accustomed to equal temperament tuning, it is possible that the combination of the five different flutes results in a sound that seems ‘out of tune’. In the article ‘Temperaments, tonalities and micro tonalities: an introduction’, Christopher Fox refers to James Tenney to support music which explores non-equal temperaments:

James Tenney has argued that the harmonic development of Western art music reached something of an impasse around 1910 and that it was only when composers began to imagine music that went beyond 12-tone equal temperament

\textsuperscript{232} The Native American flute has a unique tuning system, as discussed in Chapter 2.1.

\textsuperscript{233} In compositions ‘Hope’ and ‘Soft-spoken Power’, the Native American flute is to play in equal temperament. See Chapter 2.1 for discussion of alternate fingerings developed for this purpose.
that our music evolution could continue.²³⁴

While the interaction of alternate tunings is a distinguishing feature of *Cloud Shadows*, timbral exchange is a primary focus. In the article, ‘Perception of musical tension for nontonal orchestral timbres and its relation to psychoacoustic roughness’, Pressnitzer and McAdams indicate that ‘nontonal [sic] tension could be perceived consistently on the basis of timbral differences’.²³⁵ The authors discuss the results of an experiment which they conducted to determine whether tension in non-tonal music can be expressed without dynamic or rhythmic cues. Their findings reveal that music that ‘does not draw on the implicitly shared tonal culture may disorient listeners and, hence, deprive them of the essential landmarks that schemas of tension and release provide for the appreciation of a musical work’.²³⁶ Thus, in non-tonal works it is necessary to build tension through alternate means. *Cloud Shadows* is not non-tonal, but has D as a pitch centre; however, timbre is indeed an aspect used to define the phrase structure and cadences, participating in the development of tension and release. Joshua Fineberg names the treatment of timbre as one of the distinguishing characteristics of spectral music. He writes that spectral music ‘has made colour into a central element of the musical landscape, often elevating it to the level of the principle narrative thread.’²³⁷ While *Cloud Shadows* is not a spectral work, the approach to timbre is similar. Timbre is used to help shape phrases and participates in the tension and release, and pitch is relegated to a role that is, while significant, not paramount.

²³⁶ Ibid. pp. 66-80.
Whereas Messiaen sought to transform timbre by combining diverse registers and dynamics (in *Couleurs de la Cité Céleste*, for example), the close and overlapping pitch ranges of the five flutes in *Cloud Shadows* necessitate alternate means of creating variety in tone colour and expression.\(^{238}\) The fact that there is so much registral overlap among the flutes allows for a keener focus on tone colour. Variety of tone colour is accomplished through the exchange of flutes within motives and by exploiting various means of articulation.

![Fig. 54 Ranges of flutes in *Cloud Shadows*](image)

Each flute in *Cloud Shadows* has a distinct timbre, and the initial entrances of each of the flutes are staggered, allowing the individual voices to be introduced to the listener one at a time. The high D tin whistle is bright and somewhat metallic. It can be piercing and has the ability to cut through most instrumentation unless it is playing its very lowest

notes. The low D whistle, on the other hand, has a warmer and much more subdued tone. Though it is made of aluminium, the length of the tube and the size of the finger holes allow a bit of breathiness to enter the tone. The Native American flute has a warm, woody tone, but its fetish adds a certain brightness, and there is a distinctive edginess to its tongued notes. The xiao has a light, breathy tone throughout much of its range, with a fair amount of resonance in its lowest notes. The western concert flute is made of silver and is a standard member of the western European orchestra. Its dynamic range is great, and the instrument could quite easily overpower the other flutes if care is not taken in the composition.

The opening melody of Cloud Shadows, which first appears in its entirety in bar 5, is fragmented and divided among the flutes. The unbroken melody is shown in Figure 55.

Fig. 55 Opening melody of Cloud Shadows

The fragmentated melody as it appears in bars 5-6 is shown in Figure 56.

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239 Both the high D and the low D tin whistles used in the composition and the performance of Cloud Shadows are constructed of finished brushed aluminum.

240 The Native American flute used in the composition and performance of Cloud Shadows is constructed of cedar wood and has an F# fundamental.

241 The xiao used in the composition and performance of Cloud Shadows has eight holes (as opposed to the more common five or seven holes), allowing for more chromatic notes without half-hole fingering. Its fundamental is D.
Fig. 56 Cloud Shadows, bars 5-6

Rather than a single thread of melody, the result is a spectrum of musical colour woven into a fabric. In bars 1-13, as the melody transfers from one flute to another, pitches within the line are sustained, and a predominant harmony of D minor emerges. Through exchange of one flute for another in a sustained chord, a shift in the tone colour of the chord occurs. A D minor triad in second inversion is sounded seven times in the first thirteen bars (The first appearance, in bars 2 and 3, is broken, with the A appearing after the F has been released.). The register of the three pitches (A4, D5, and F5) remains constant; however, the presentation and resultant perception is in continual flux, because of the difference in timbre. Only once is the exact combination of flutes that are playing the chord repeated (bars 5 and 9).
Fig. 57 Seven instances of D minor in bars 1-13, *Cloud Shadows*

<table>
<thead>
<tr>
<th></th>
<th>bars 2-3</th>
<th>bar 5</th>
<th>bar 6</th>
<th>bar 9</th>
<th>bar 10 (a)</th>
<th>bar 10 (b)</th>
<th>bar 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>F5</td>
<td>Xiao</td>
<td>Flute</td>
<td>Xiao</td>
<td>Flute</td>
<td>Xiao</td>
<td>Xiao + Low Whistle</td>
<td>Flute</td>
</tr>
<tr>
<td>A4</td>
<td>Flute</td>
<td>Xiao</td>
<td>Flute</td>
<td>Xiao</td>
<td>Low Whistle</td>
<td>Flute</td>
<td>Xiao</td>
</tr>
</tbody>
</table>

Shifts in timbre through voice exchange are observed throughout the piece. The second motive (introduced in bar 25) is not as fragmented as the opening motive, and this allows more time for the timbral shift to be heard. The xiao introduces the second motive on the downbeat of bar 25, and the third note of the motive, A4, is played in bar 26 by the western concert flute. With the immediate repetition of the motive played in bars 27-8 by the low whistle and the xiao, a difference in tone colour is readily discerned, and the differently coloured motive functions as a development rather than a duplication (see Figure 58).

Other instances of voice exchange in *Cloud Shadows* include:

- bars 31-2: the low whistle sustains an A4 while a G4 is played first by the xiao and then by the western concert flute. In bar 32, the Native American flute adds an A4.
- bars 33-4: the western concert flute and the low whistle exchange E4 and G4.
- bar 47: the A4 and B4 played by the xiao and the Native American flute are then played by the low whistle and the xiao.
Fig. 58 Cloud Shadows, bars 25-31

Exchanges of timbre on a unison occur throughout the piece as well. This device allows for development or closure of a musical idea exclusively by means of timbre, not pitch. The entrance of the second motive with xiao playing a D4 in bar 25 is preceded by a D4 in the low whistle in bar 24. The low whistle’s line is paired with a similar musical gesture in the high whistle, which ends an octave higher. Despite identical pitches being played by the low whistle and the xiao, it is the tone of the xiao which starts the motive, not the low whistle. The xiao is distinguished from the low and high whistles not only by its differing timbre, but also with a slightly louder dynamic.

Throughout the faster middle section of the piece, a pedal note F sharp is played by different flutes and with different pairings. Compare bar 67 with bar 69, for example.
The shift in tone colour from the changing instruments adds progression and musical development to a single repeated pitch. As the section draws to a close, rhythmic variety is added to the pedal tone as a means of transition, as can be seen in bars 83-7, shown in Figure 60.

A third example of timbral exchange on a unison is found in bars 36-8, shown in Figure 61. The end of the melodic line is extended by shifting the tone colour of the G4 from xiao to western concert flute.
This exchange lays bare the difference in tuning, and the effect is rather jarring. The cadence might prove more successful if the E in the low whistle is held over through bar 37.
In addition to timbral exchange, embellishments and a variety of articulations are employed throughout the piece to vary musical colour and to propel melodic lines. In particular, the distinctive sound of tongued notes on the Native American flute plays a role in shaping the melody in at least three instances. After a four bar introduction, the melody is first played in bar 5 (see Figure 56). The initial pitch is sustained by the western concert flute in bar 4, but reiterated on the downbeat of bar 5 with a non-tongued accent in the western concert flute and an entrance in the Native American flute, both on A4. It is the sharp sound of the tongued note in Native American flute that marks the start of the melody. In bar 7 and then bar 11 (see Figure 62), the shift in harmony is made more impactful as a tongued note on the Native American flute is combined with finger vibrato to highlight the entrance of the E5. A third example of the distinctive sound of tonguing on Native American flute which affects the voice leading is found in bar 40. The articulated E5 and the D sharp5 in the Native American flute accentuate the line, and thus the complex rhythm of the offset triplets is highlighted.

Fig. 62 Cloud Shadows, bars 7-11
Additional techniques used throughout *Cloud Shadows* lend variety to the tone colour. For example, fluttertongue and a slide in the high D whistle, finger vibrato and slides in the Native American flute, and lift-offs in all flute parts will all be found in the first thirteen bars. In bars 42-7, the A4 - B4 dyad undergoes several tone colour changes with alternating trills in the Native American flute and the low whistle and quarter-tone bends in the xiao and the Native American flute. Here, too, the E5 that was sustained in the xiao in bar 43 changes tone colour with the addition of fluttertongue in bar 44. In bar 48, the western concert flute distinguishes its pitch from the octave pairing in the high D whistle by breaking the sustained E5 into a triplet. This device is also used in bar 37 in the xiao and the western concert flute.

The shifts in timbre throughout *Cloud Shadows* are heightened by the differences in tuning among the five flutes. When instruments are playing in an ensemble which incorporates different tuning systems, it is likely that accommodations will be made, whether intentional or not, to even out perceived dissonances. However, unless extraordinary measures are taken, such an ensemble will not play in equal temperament tuning. As mentioned above, the flutes in *Cloud Shadows* are to be played according to their individual tuning systems. The undulation of pitch resultant in the combination of differently tuned flutes provides an additional dimension to the timbral exchange. This is most evident when the flutes are playing a unison interval, either simultaneously or in immediate succession. In addition to the previously discussed unison in bars 36-8, an

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242 See Chapter 2.1 for an explanation of the lift-off.
243 The recording provided in supplementary materials is of one player (the author) playing all five tracks of *Cloud Shadows*, and so the sympathetic tuning which is likely to happen in a live setting did not occur.
equally bare unison occurs in bars 95-118, with the A played in the Native American flute and the xiao. As with the unison in bars 36-8, the unison A that recurs at the end of the work may be too jarring. A solution to this compositional issue may be to have the low whistle drone on alternating D4 and E4.

Three stylistic techniques, namely half-hole fingering, bending of notes down a quarter-tone, and sliding between pitches, serve to move the overall sound of the piece further away from that of equal temperament. Examples of half-hole fingering are found in the low whistle in bars 6, 10, and 13 (playing an F natural), and in the Native American flute in bars 103, 107, and 112 (playing a B flat). Both the F natural in the low whistle and the B flat in the Native American flute are slurred from the preceding notes. This means that the microtones sounded as the finger moves position over the hole will be audible. The incorporation of slides and quarter-tone bends throughout the piece also sound microtones, blurring the line between intervals and offering a soundscape beyond that of equal temperament.

Through the combination of flutes from various origins, the continuous shift of tone colour in *Cloud Shadows* elevates the role of timbre to that of a structural feature. The inherent differences in timbre and tuning among the five flutes allow the music to move beyond the familiar and enter a new soundscape.
Bird Suite is a five movement work for xiao, two percussion players, and string quartet. It is the third work in this portfolio that is written for xiao, and the total duration is just under thirty minutes. The suite reflects a thorough exploration of the instrument.244 As with Zephyr, which is discussed in Chapter 5.2, Bird Suite does not expressly incorporate idioms of Chinese folk music, but explores the register, articulation, and extended techniques available to the xiao. The five movements offer a range of expression, as each movement has its own instrumentation, structure, and themes. The varying textures of the movements allow the xiao to participate in polyphony, a role which is atypical in Chinese folk music.245

It is assumed that the string quartet will perform in equal temperament, as western art musicians typically do so unless otherwise instructed. The direction for the strings to match the just tuning of the xiao is not given by the composer. The different tunings are not in conflict; rather, the texture and the harmonic material of the suite as a whole allow the aural space for the xiao to be played in its customary tuning, supported by strings played in equal temperament.

Imitation of natural birdsong is the central theme of the suite, and the xiao plays the prominent role in the delivery of the birdsong. Participating in an ensemble of western orchestral instruments, the xiao emerges as soloist, but not as a foreign guest. Balance and

244 Zephyr, for xiao, cello and suspended cymbal, is discussed in Chapter 5.2, and Cloud Shadows, for high D tin whistle, Native American flute, xiao, western concert flute, and low D tin whistle, is discussed in Chapter 7.

245 See Chapter 5.1 for a discussion of the xiao and heterophony in Chinese folk music.
interplay are maintained between soloist and ensemble. The size of the ensemble is expressly kept to a minimum so that the xiao is not overpowered. The percussion acts more as an accent, punctuation, or imitation of the rhythms of birdsong, than provider of an ongoing pulse.

Inspiration for the suite was drawn from a range of musical compositions, including G.F. Telemann’s Suite in A minor for Flute, Medieval Suite by Katherine Hoover, Sonata in A minor for Flute Solo by C.P.E. Bach, The Aviary by Richard Rodney Bennett, and Le Merle Noir by Olivier Messiaen. All of the above, except Le Merle Noir, are large scale works presented in a series of movements. The division of Bird Suite into five segments allows for differing aspects of the xiao to be examined, from short angular bird chirps with large interval leaps to longer, slow-moving lines of melody.

‘Suite’ is a word with many meanings; the original musical connotation of the word is a set of instrumental compositions in dance style, though it evolved to encompass works comprised of series of movements for solo instrument. The word itself is derived from the Latin sequere, a cognate meaning ‘to follow’.246 Broad application of the musical term may be understood as a sequence of movements of instrumental music with a unifying factor, such as harmonic or motivic relationships between the movements.247

Composers of the Second Viennese School frequently titled compositions with baroque names. Writing about Schoenberg, musicologist Donald Mitchell notes that

‘despite the radical innovations in language, in fact, the sense of tradition persists and expresses itself most powerfully in the maintenance of traditional forms, however much expanded or re-formulated.’

More recently, Lachenmann’s 1979 suite for string quartet and orchestra, *Tanzsuite mit Deutschlandlied*, both embraces and disrupts historical music form. As University of Chicago professor Seth Brodsky writes, Lachenmann’s suite ‘structures and then defaces old dances; it sets and then obliterates old tunes’. In the works of these masters, acknowledgement of history is partnered with innovation.

The use of baroque nomenclature in contemporary music titles is not uncommon, and recent works bear the word ‘suite’ in the title. *Medieval Suite*, written by Katherine Hoover, for example, was written in 1986 and is a five movement suite for flute and piano, the first movement of which also bears a baroque title, ‘Virelai’.

Each of the movements depicts an event from *A Distant Mirror: The Calamitous Fourteenth Century*, the history of medieval France written in 1978 by Barbara W. Tuchman. Unifying elements throughout the suite are the programmatic elements (all based on Tuchman’s opus), and reference to medieval forms and styles. *Medieval Suite* is a series of vignettes in which medieval melodies are embellished, altered, and injected with chromaticism in the creation of a work that is innovative and at times daring.

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250 For example, Aulis Sallinen’s *Dance Music Suite* (2017) and Claude Bolling’s *Picnic Suite* (1980) and *Suite for Flute and Jazz Piano* (1973).
Two factors unify the movements of *Bird Suite*. The first is the programmatic element of birdsong permeating all five movements, and this is usually delivered by the xiao. The birdsong is notated from sounds heard in nature; the process was inspired by Messiaen, but is not as methodical.²⁵³ *Bird Suite* is a series of five discrete vignettes, and these do not necessarily depict five distinct birds. The reproduction of the birdsong in the suite is not meant to be exact, but more of an impression, akin to the ‘verism’ of Messiaen.²⁵⁴

The second unifying factor of the suite is a harmonic structure which maintains two separate realms, ‘atmosphere’ and ‘birdsong’. The ‘atmosphere’ is predominantly characterised by open-spaced chords played by the strings, and the ‘birdsong’ by melodic progression via a fourth plus a semitone.²⁵⁵ The semitone is the agent of motion in the horizontal realm, as opposed to the relative stability of chords in the vertical. The melodic cell is recognised despite inversion and octave displacement. Two examples of this birdsong motive are illustrated in Figures 63 and 64. In bars 24 and 25 of the first movement (see Figure 63), the semitone is present between the F and E, and the fourth between the F and B flat (spelled as an A sharp). In bar 248 of the same movement (Figure 64), the semitone is present between the D and C sharp, and the fourth between the D and the G.

²⁵⁴ Ibid.
²⁵⁵ Set-class 016, as defined by Allen Forte.
Except for the third movement, the harmonic language of the suite does not rely on tertiary harmonies, and this permits aural space for the unique tuning of the xiao to be heard.\textsuperscript{256} Throughout the suite, most of the ‘birdsong’ occupies a realm without a pitch centre, and often this pitch-world is at odds with that of the ‘atmosphere’. This has the dual effect of setting the programmatic bird apart from its natural surroundings and setting the xiao apart from the six other members of the ensemble, aiding in its distinction as soloist.

The metre of the ‘birdsong’ aspect of the suite is almost totally irregular. This is in part inspired by Native American music, in which flute and vocal melodies are set in irregular metre meant to imitate birdsong while percussion instruments play in regular metre, or body rhythm.\textsuperscript{257} Whereas the regular metre of Native American percussion may

\textsuperscript{256} See Chapter 5.1 for discussion of the tuning of the xiao.
\textsuperscript{257} See Chapter 2.1 for discussion of Native American rhythms.
appear to be at odds with Native American flute melodies, the metres of the two realms, ‘atmosphere’ and ‘birdsong’, in \textit{Bird Suite} are more complimentary than contrasting.

Keeping in mind the aggressive articulation in Messiaen’s \textit{Le Merle Noir} which successfully evokes birdsong, alternative tonguing on the xiao was explored during the composition of \textit{Bird Suite}. This resulted in the arrival at alternate methods of articulation, notated in the score with the letters, ‘h’ and ‘k’, and the word ‘tut’. Examples of this notation are shown in Figure 65.

\textbf{Fig. 65 ‘k’, ‘t’, ‘tut’, and ‘h’ articulations, ‘Loons on the Lake’, bars 38-43}

The letter ‘h’ appears in the score when the note should begin without any articulation, but rather an aspiration. The letter ‘k’ indicates that a note is to be articulated with the back of the tongue. Where ‘k’ is notated in \textit{Bird Suite}, it is followed by a ‘t’, a reminder to return to ordinary tonguing. Flutists regularly use the back of the tongue when double tonguing, alternating front and back for speed; however, to begin a phrase with the back of the tongue produces a harsher sound than the ‘k’ sound produced in double tonguing. This harsher sound is even more prominent on the xiao than the western concert flute. The notation ‘tut’ means that the note should start and end with the front of the
tongue. Closing the note with the tongue results in a sharp, percussive stop. The ‘tut’ articulation performed on the xiao also produces a more distinctive sound than on the western concert flute.

The five movements of Bird Suite are comprised of two pairs of like movements surrounding a middle movement. The first and fourth movements, ‘Listen for the Birds’ and ‘Dancing Owl’, are similar in texture, and the ‘atmosphere’ is firmly established by the ensemble before the entrance of the xiao with ‘birdsong’. The second and fifth movements, ‘Woodpecker’s Song’ and ‘Shore Birds’, are energetic and less chromatic than the other three movements. In these movements the ensemble plays more of a role in the depiction of birdsong. The third movement, ‘Loons on the Lake’, is for xiao solo, and stands apart from the rest of the suite in its harmonic language and creation of atmosphere, as well as its instrumentation and the use of vocalisation while playing.

In the process of composing Bird Suite, personal exploration of the instrument has led to the discovery and production of new sounds for the xiao, which include vocalisation, quarter-tone bends (also used in Zephyr and Cloud Shadows), and the ‘h’, ‘k’ and ‘tut’ articulations. The timbre and embellishments of the xiao are complimented by extended techniques in the string quartet and the percussion. In particular, the pizzicato imitates the lift-off. The balance of texture, instrumentation, and dynamics allows the xiao to emerge as a soloist. Set in harmonic language that is not idiomatic to Chinese traditional music, Bird Suite offers new opportunities of expression for the xiao.
8.1

*Bird Suite* 1. ‘Listen for the Birds’

Percussion I: tam-tam, snare drum, triangle  
Percussion II: triangle, rain stick, two wood blocks

In ‘Listen for the Birds’, the xiao occupies a separate harmonic and textural realm from the rest of the ensemble. Thus in the first movement of the suite, the xiao is immediately distinguished as a lead character. Extended techniques in the strings further distinguish the two realms.

‘Listen for the Birds’ begins with the creation of atmosphere through the use of extended technique in the percussion and the strings: the edge of the tam-tam is scraped with a triangle beater sounded a dramatic start to the suite as a whole, and the string quartet plays ‘air noise’ (a technique resulting in a breathy sound with a hint of pitch) as the performers audibly exhale. The combination of the air noise and exhalation creates a sound like the wind in the trees. No definite pitch is sounded by the ensemble until the entrance of the xiao in bar 23. The silence that precedes the first sound from the xiao recalls the quiet expectation we experience in nature when we listen for the sound of a bird call.

The first melodic gesture of ‘Listen for the Birds’ (and so of *Bird Suite* as a whole) is an expression of a fourth plus a semitone by the xiao. This utterance, as well as much of the material played by the xiao throughout the movement, is short and clipped, as are many of the calls heard in nature. The special ‘tut’ articulation, as well as fluttertongue, are used frequently in the movement to evoke the sound of a bird. The texture and articulation in the
strings remains distinct from that of the xiao. The two realms, ‘atmosphere’ and ‘birdsong’, remain separate, allowing the xiao to emerge from the ensemble in a soloistic role.

The xiao continues to ‘chirp’ above the atmospheric sounds with minimal pitch material delivered by the strings until bar 97, when a unison and doubled G is sounded, which develops into a relatively stable D-G-A-D chord in bars 102-5. One of several examples of the xiao leading harmonic direction is found in bars 106-9, in which any residual weight of the unison G followed by the D chord is immediately offset by the xiao’s G sharp. It is the G sharp which directs the strings to the next chord, F sharp-C sharp-G sharp-C sharp. A second example is found in bars 138-40, in which the xiao moves up a semitone, and this shifts the chord in the strings up a whole-tone.

Beginning in bar 150, the xiao begins to participate in the harmony produced by the strings as it plays a longer, not clipped, melodic line whose structural outline is E-A-D. The long line continues, occasionally interrupted by short clips of birdsong which resemble but do not duplicate the fourth plus semitone motive, as is seen in bars 203-04 and 217-9 (see Figure 66 and 67).

**Fig. 66 ‘Listen for the Birds’, bars 203-04**
In bars 273-84, the xiao delivers a final long melodic line, ending on D, which feels like a pitch centre. The strings had foreshadowed the cadence with a chord with D as its root, in bars 269-71. The D in bars 282-4 is unsupported by any vertical stability, as the strings return to the air noise and the exhalation. The sound of ‘wind in the trees’ followed by bars of silence has the listener waiting once again for the sound of birdsong, which concludes the movement.
8.2

*Bird Suite 2. ‘Woodpecker’s Song’*

Percussion I: bell tree; Percussion II: tambourine

‘Woodpecker's Song’, as the name suggests, is a percussive movement, characterised by repeated pizzicato pitches in the strings and short clips of birdsong in the xiao. The sounds of the woodpecker’s drumming mingle with his call, and the realms of ‘atmosphere’ and ‘birdsong’ are not totally discrete in this movement. Nonetheless, the xiao primarily directs the forward progression in the movement.

Throughout much of ‘Woodpecker’s Song’, the regular drumming of the woodpecker is depicted by the strings, not the percussion. The tambourine often plays thumb rolls, a technique of imprecise rhythm meant to convey irregularities which occur in nature, and the bell tree serves to accent and punctuate the birdsong. As in the first movement, ‘Listen for the Birds’, the birdsong is depicted with short bursts in the xiao, but here large intervallic leaps are incorporated into the bursts. This introduces a division of register which is more fully explored in the third movement of *Bird Suite*. The wide intervals and repeated staccato notes featured throughout the movement are highly uncharacteristic of Chinese traditional music, and offer a new mode of expression for the xiao.258

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258 See Chapter 5.1 for discussion of Chinese folk music.
‘Woodpecker’s Song’ is a type of rondo, with the opening theme developed and repeated in transposition. Sections B and B\(^1\) introduce the xiao as soloist, and in sections C and C\(^1\) the xiao plays longer lines in place of the birdsong motive.

**Fig. 68 ‘Woodpecker’s Song’, structural form**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>B(^1)</th>
<th>A(^1)</th>
<th>C</th>
<th>A(^1)</th>
<th>C(^1)</th>
<th>Transition</th>
<th>A(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bb</td>
<td>1-9</td>
<td>10-17</td>
<td>18-22</td>
<td>23-31</td>
<td>33-51</td>
<td>52-62</td>
<td>63-72</td>
<td>73-79</td>
<td>80-90</td>
</tr>
</tbody>
</table>

The movement begins with the xiao sounding a D, the pitch which ended final cadence of the previous movement. The D in the xiao is played as a harmonic, and so the D is not pure, it has a hint of G in it. G emerges as the pitch centre as the strings gradually fill out the chord G-C-D-G, and the vertical stability establishes the initial atmosphere of the movement. With pizzicato repetition in the strings and no semitones yet in the birdsong of the xiao, the forward momentum is entirely rhythmic until bar 10, when the xiao introduces semitones.

So as not to obscure the birdsong played by the xiao in bars 10-22, the dynamics of the strings and percussion are lowered and the texture thinned. The bell tree is hand muted, the strings tap the bodies of the instruments and play harmonics, and the ensemble plays piano against the mezzoforte xiao. The rhythmic accents within the parts are offset, mitigating the regularity of the metre and creating a sense of aural space. Expressions of the fourth plus a semitone motive lie within the chromatic melody, for example in bar 13 (see Figure 69).
From bar 33, the realms of ‘atmosphere’ and ‘birdsong’ are reversed. The xiao plays long melodic lines with fourths as structural notes, and the strings imitate the birdsong texture and motives. Here the progression is led by the strings, and the pitch centre remains firmly on F until bar 48. The harmonies are non-chromatic, and the forward momentum is achieved through rhythmic means, via syncopation and offset accents. The reversal of ‘atmosphere’ and ‘birdsong’ occurs a second time, beginning in bar 63, transposed to B.

In bars 49-52, the xiao regains its role as director of horizontal progression and leads the ensemble via a series of fourths to a new pitch centre. There follows a reprise of the refrain, now transposed to A-D-E-A. The repeated pizzicato renews the vertical stability, and forward momentum is achieved via birdsong played by the xiao.

The final statement of the refrain begins in bar 80. As in the A\textsuperscript{1} section of bars 23-31, it has C as a pitch centre. Whereas, in bar 31 the xiao leads the harmonic progression up a fourth to a pitch centre F, in the final bars the xiao leads down a fourth to pitch centre G, and the movement concludes in the tonality in which it began.
8.3

**Bird Suite 3. ‘Loons on the Lake’**

**Strings and Percussion tacet**

‘Loons on the Lake’ stands apart from the other movements of ‘Bird Suite’ in its instrumentation and harmonic language. It is written for xiao solo, and the xiao establishes the separate realms of ‘atmosphere’ and ‘birdsong’ without the aid of the ensemble. This is accomplished through register shifts and distinction of melodic material. Bird calls are prominent throughout the movement, and the thematic thread of the suite as a whole is maintained.

Inspiration for the composition of ‘Loons on the Lake’ was found in three works for solo flute: *Le Merle Noir* by Olivier Messiaen, Sonata in A minor for Flute Solo by C.P.E. Bach, and Sequenza I by Luciano Berio. In these works, the sonic expression of the flute is expanded through the use of large interval leaps and extended technique.

Messiaen’s notation of bird calls from nature influenced *Bird Suite* as a whole, but most especially ‘Loons on the Lake’. Of particular influence was the fast moving section labelled ‘Vif’, the final third of *Le Merle Noir*, which features octave displacement and staccato semiquavers in an irregular metre. An excerpt from the work is shown in Figure 70.
Fig. 70 Example from *Le Merle Noir*\textsuperscript{259}

Whereas Sequenza I and *Le Merle Noir* employ registral extremes and large intervallic leaps for dramatic and motivic effect, Bach’s Sonata in A minor uses the techniques as a structural device. Through separation of registers, two lines of melody are formed, creating the illusion of polyphony performed on a monodic instrument. The first bars of the Poco Adagio movement and a few bars from the Allegro movement serve as examples, and are shown in Figures 71 and 72.\textsuperscript{260}

Fig. 71 C.P.E. Bach Sonata, Poco Adagio, bars 1-4

Fig. 72 C.P.E. Bach Sonata, Allegro


In ‘Loons on the Lake’, wide interval leaps are used as a structural device, to distinguish the ‘atmosphere’ and ‘birdsong’ realms, as well as for dramatic enhancement of material evoking bird calls.

‘Loons on the Lake’ has as its goal the exploration and expansion of the extreme capabilities of the xiao, much in the same manner that Sequenza I explores technical extremes on a western concert flute. Novel ways of producing sound on the xiao are incorporated, including vocalising while playing and the special articulations, ‘h’, ‘k’, and ‘tut’. While these techniques are frequently used in contemporary western art music for flute, my research has not revealed their application in playing the xiao.

The movement begins in a similar manner to ‘Listen for the Birds’, in that a relatively still atmosphere is created, followed by silence. A moment of quiet expectation precedes the initial bird call. The first note of the movement is D4, the lowest note on the xiao, and arguably the most sonorous. The lowest tetrachord of the xiao defines the ‘atmosphere’. The sonority of these pitches has a grounding effect, and indeed, D is the pitch centre of the movement as a whole.

With the first pitch, instruction is given to allow the pitch to fluctuate with dynamic change. When the same D4 is performed ordinario in bars 3-5, a disturbance in the pitch occurs with vocalisation on D3 and E3. The ‘atmosphere’ established in the first bars may be characterised by stillness, but it is not static.

The discovery of which pitches work optimally when vocalising into the xiao, as well as how this technique might best be executed, required me to experiment quite a bit.
The range below the xiao’s lowest notes was chosen for two reasons: first, it distinguishes the voice from the xiao, and secondly, my own vocalisation into the xiao around D4 produces a buzzing sound which is not suitable for this movement. My vocal range is low for a woman, and not all women will be able to vocalise on a D3. If the D3 is not available to a performer, the vocalisation may be transposed up an octave. At the time of this writing, it is not yet known if such a transposition would change the sound in a negative way or create the undesirable buzzing that I experienced in my experiments.

The start and stop of vocalisation while playing the xiao has the potential to sound abrupt and carries a weighted accent, due to a glottalisation at the start of the sung note combined with the tongued articulation of the note played on the xiao. Thus, two different devices are used to soften the edges of the vocalised notes. Experimentation proved that it is much more subtle to begin a vocalisation without a glottal attack once the xiao note has already begun. Therefore, in bars 3-5 and bars 9-11, the vocalisation begins after the xiao note has begun, and ends before its completion. In this manner, the tonguing used to initiate the xiao note is not coupled with a glottalised start to the vocalisation.

Fig. 73 ‘Loons on the Lake’, bars 1-11
The second device used to soften the vocal entrance is found in bar 17 (see Figure 74). Here the xiao and the vocalisation begin at the same time, and the instruction to begin the xiao note without tongued articulation is given, as indicated by the letter ‘h’.

*Fig. 74 ‘Loons on the Lake’, bars 17-8*

In contrast with the other movements of *Bird Suite*, the harmonic language of ‘Loons on the Lake’ is built on tertiary harmonies in both the ‘atmosphere’ and ‘birdsong’ realms, rather than vertical simultaneities of fourths in one and horizontal expressions of a fourth plus a semitone in the other. ‘Loons on the Lake’ is linked structurally and motivically with the other movements of the suite through the establishment of a stable ‘atmosphere’, in this case grounded by register and a firm pitch centre, which is interrupted by a registrally distinct ‘birdsong’ in an irregular metre.
8.4

*Bird Suite 4. ‘Dancing Owl’*

Percussion I: crotale, snare drum, suspended cymbal
Percussion II: three wood blocks, shaker

The fourth movement of *Bird Suite*, ‘Dancing Owl’, may be paired with the first movement, ‘Listen for the Birds’, in that they are similar in texture and both establish the ‘atmosphere’ well before the entrance of the xiao with the ‘birdsong’. Extended techniques played by the xiao include quarter-tone bends, lift-off, and the ‘t’, ‘k’, and ‘tut’ articulations.

‘Listen for the Birds’ starts with the atmospheric sound of wind in the trees; ‘Dancing Owl’ begins with the sounds of a dense forest at night. The dramatic sound of scraping the edge of the tam-tam that starts the first movement is replaced with the eery sound of a bowed crotale, and the air noise in the strings is replaced with sul ponticello tremolo and pizzicato.

The ‘birdsong’ played by the xiao dominates bars 17-78 of ‘Dancing Owl’. The texture in these bars is extremely sparse and of a low dynamic, with pizzicato in the strings and finger tapping on the wood blocks. This allows the introduction and development of the theme to be heard and absorbed by the listener without obstruction.

Unlike the first and second movements, in which the ‘atmosphere’ is clearly delineated via stable, open-spaced chords, the ‘atmosphere’ established in bars 1-10 of ‘Dancing Owl’ does express the musical cell of a fourth plus a semitone (bars 1-6 are shown in Figure 75). It is not until bar 15 (shown in Figure 76) that a vertical fourth chord is sounded, and the ‘birdsong’ and ‘atmosphere’ are differentiated. Followed by silence,
this sets the stage, as it were, for the dramatic entrance of the xiao with ‘birdsong’. The xiao plays two pitches belonging to the fourth chord, F sharp and B, but then bends the pitch down a quarter-tone, suggesting a fourth plus a semitone, and the distinction of the realms is made clear.

**Fig. 75 ‘Dancing Owl’, bars 1-6**

![Musical notation for 'Dancing Owl', bars 1-6](image-url)
The xiao further differentiates itself with a lift-off conclusion to the second statement of the bird call in bar 20. Thus, with its first two phrases, the xiao distinguishes itself by performing two special techniques available on the instrument, the quarter-tone bend and the lift-off. These in turn influence technique in the strings, creating a connection between the disparate instruments, as well the realms of ‘atmosphere’ and ‘birdsong’. Pizzicato is complimentary in tone to the lift-off articulation, and the two are often sounded simultaneously throughout the movement. Indeed, the pairing is a prominent feature of the faster middle section, bars 78-121. The quarter-tone bend, a defining aspect of the first
statement of the xiao, is subsequently taken up by the strings, and the relative stability of vertical fourth chords (bars 51-4, for example, as shown in Figure 77) is somewhat mitigated by the aspect of motion which is inherent in the bends.

Fig. 77 ‘Dancing Owl’, bars 49-54

When the opening soliloquy of the xiao concludes in bar 78, the strings take on more of a role in establishing the stable ‘atmosphere’. Fourth chords are played pizzicato, and the xiao distinguishes itself with the aggressive articulations, ‘k’ and ‘tut’.

In contrast to the first section of the movement, pitch takes on more of a defining role than intervallic relation in the faster section, beginning in bar 78; the section begins with a tonicisation, albeit momentary, of D. As in the first and second movement, vertical stability is established by fourth chords, and semitone movement in the horizontal regularly informs the vertical chord structure.
8.5

*Bird Suite 5. ‘Shore Birds’*

Percussion I: ocean drum, thunder tube
Percussion II: bass drum, suspended cymbal

‘Shore Birds’ brings an energetic ending to *Bird Suite*, featuring cacophonous bird calls and dramatic percussion. ‘Shore Birds’ and ‘Woodpecker’s Song’ are similar in that they have faster tempos than the other three movements, the realms of ‘atmosphere’ and ‘birdsong’ are not totally discrete, and the strings play a prominent role in the depiction of bird call. Whereas the xiao is a soloist in the first four movements of *Bird Suite*, in this movement it is an equal participant in the ensemble.

In ‘Shore Birds’, the ‘birdsong’ is delivered mainly by the strings. Extended technique is used to evoke bird calls, such as the ‘seagull glissando’, semitone bends, and col legno battuto jeté. The xiao and percussion provide the ‘atmosphere’, the sounds of the sea. The xiao plays long lines of melody which evolve into a sort of sea shanty, and the percussion produces sounds of waves, rolling surf, and thunder. Two percussion instruments in particular are responsible for the sound of the sea: the ocean drum and the thunder tube.

An ocean drum is a double-sided hand drum filled with metal beads. The skins of the drum are played with fingertips. When held horizontally and rolled in the circular motion, the metal beads create a sound similar to ocean waves. The drums come in several sizes; ‘Shore Birds’ calls for a forty centimetre drum. Images of ocean drums are shown in Figures 78 and 79.

A thunder tube is a cylindrical one-sided drum with a metal spring fixed to the centre of the drum head. When the spring is pulled, a loud noise resembling thunder or a
large wave is produced. The sound can be sustained either by rocking the tube about thirty degrees in either direction or by waving an open hand over the open end of the drum.

Images of a large thunder tube are shown in Figures 80 and 81.

Fig. 78 An ocean drum, 40 centimetres in diameter\textsuperscript{261}

![Image of an ocean drum](image1)

Fig. 79 Ocean drums in various sizes\textsuperscript{262}

![Image of ocean drums](image2)

\textsuperscript{261} Photo by the author, with the cooperation of Gandharva Loka Music Store, Dublin.
\textsuperscript{262} Ibid.
Fig. 80 Large thunder tube, short snap position\textsuperscript{263}

Fig. 81 Open top of a thunder tube\textsuperscript{264}

\textsuperscript{263} Photo by the author, with the cooperation of Gandharva Loka Music Store, Dublin.
\textsuperscript{264} Ibid.
The first twenty-two bars of ‘Shore Birds’ convey the image of a bevy of birds on the shore all singing at once. Deliberate attempt was made to eschew any pitch centre or sense of metre in these bars, in order to more faithfully imitate the sounds imagined. The seagull glissandi and quarter-tone and semitone bends obscure definite pitches. Similar to the rhythmic imprecision of the thumb roll used in ‘Woodpecker’s Song’, col legno battuto jeté is used to produce an irregular percussive sound, in imitation of a magpie.

The ‘birdsong’ motive (a fourth plus a semitone), which is featured throughout the suite, appears in fragmented form in the cacophonous opening bars of ‘Shore Birds’. The many tritones and semitones allude to the motive without fully expressing it. The one instance it appears intact, in bars 4 and 5, it is played by the xiao, not the strings.

**Fig. 82 ‘Shore Birds’, bars 4-5**
A loud burst of sound with a snap of the thunder tube marks the transition from irregular metre without pitch centre to a section in 12/8 with pitch centre E (shown in Figure 83). From bars 40-163, the ‘atmosphere’ is the dominant feature, with only intermittent bird calls.

Fig. 83 ‘Shore Birds’, bars 39-44

Bar 45-70 are governed by E phrygian. With melodic emphasis on the lower half of the scale and the semitone between the first and second degrees, this produces a harmonic relation to the melodic birdsong motive of a fourth plus a semitone, which can be expressed E-F-B, as well as to the many semitones in the first section of the movement.

Differences in articulation and register allow the xiao to be heard within the context of the rest of the ensemble throughout the section in E Phrygian. Relative dynamics are
used in bars 58-132, with louder dynamic markings for the xiao. Examples of articulation used to distinguish the xiao include the mordent in bar 45, fluttetongue in bars 53-5, and the sharp ‘tut’ tongue articulation in bar 66-7. The ‘tut’ articulation is shown in Figure 84.

Fig. 84 ‘Shore Birds’, bars 65-9

In bars 142-9, the strings play at different dynamic levels from each other. This is not to effect balance, but rather to evoke the frolicking waves of the sea.

‘Shore Birds’ ends with a return to the serenity expressed in the opening bars of the first movement, ‘Listen for the Birds’. The ocean drum plays a slow swirl as the xiao plays bird calls which make reference to the opening motives of the first movement. Though the
realms ‘atmosphere’ and ‘birdsong’ are not discrete in ‘Shore Birds’, as all members of the ensemble play material from both realms, the final sounding of ‘birdsong’ reiterates the distinction one last time, and the listener is left with a reminder of bird calls expressed by the xiao throughout the suite.
8.6
Reflections on Bird Suite

*Bird Suite* is the culmination of this portfolio in terms of scope and scale. Though the work is written for seven players, the varying percussion has the effect of broadening the instrumentation beyond that number. In the course of the five movements, the xiao is placed in multiple settings, as strings perform various techniques including pizzicato, harmonics, finger tapping, pitch bends, and glissandi, and the percussionists play different instruments in each movement.

Knowledge of traditional music and performance practice for the xiao certainly informed the composition of the suite. Close study of the idioms of the instrument provided a foundation upon which to build further modes of expression. The musical material of the suite, however, does not allude to traditional Chinese music. Personal exploration of and experimentation on the xiao enabled me to discover new sounds for the instrument, and Irlandini’s term ‘re-significance’ is brought to mind.²⁶⁵

I was able to draw upon and transfer my skills as a western concert flutist and apply them to exploration of new material for the xiao. Application of techniques that are commonly played on the western concert flute include harmonics, vocalisation, martellato, fluttertongue, and the aggressive ‘k’ articulation using the back of the tongue.

Central among the aims when writing the suite was to allow the distinct timbre of the xiao to bring a distinguishing sound to the ensemble. The full range of its registers are utilised, and the texture and the harmonic material of the suite as a whole allows the aural

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space for the xiao to be played in its customary tuning, while the strings played in equal temperament. Extended techniques played by the strings bridge timbral gaps between the quartet and the xiao and contribute to the balance of the ensemble. The division of the music material into two realms, ‘birdsong’ and ‘atmosphere’, has the overall effect of defining a soloistic role for the xiao.

Two pairs of like movements surrounding a middle solo movement offer a range of expression, as each movement has its own instrumentation, structure, and themes. The centuries old structural form of the suite is partnered with a non-orchestral instrument and a wide range of percussion, offering a new interpretation for the time honoured form.
Conclusion

Before integrating ethnic instruments into my compositions, I asked the question, ‘Is the instrument fundamentally changed if we divest it of its original context?’ One thing is clear: the mechanics of the instrument will not change. For instance, the quick decay of sounds produced on the santoor and tar will not lengthen, and the range of the Native American flute will remain an octave and a half, no matter what is written into the score. Whether an uilleann piper is in County Cork or California, the bellows will still be pumped by the elbows.

Familiarisation with the traditions and techniques of an instrument allows for its defining aspects to be celebrated in music written especially for it. Knowledge of finger articulation on the uilleann pipes, for example, presents the composer with many options for expression that are not available without this knowledge. If this particular technique is not utilised, however, then those intimate with the uilleann pipes may feel something in the music is missing, that the composer may have missed an opportunity.

Just as Irlandini recognises that intimate knowledge of an instrument is a ‘collateral advantage’ to the composer, he also writes that exploring new sounds on the instrument, sounds that do not draw upon its tradition, may yield artistic fruit. Acknowledging that ‘traditional knowledge is of the essence’, he suggests that exploring an instrument without prior knowledge of its tradition may result in previously unexpected sounds, and this may result in a ‘re-significance’ of the instrument.266, 267

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267 Ibid, p.3.
The compositions in this portfolio draw upon the original contexts of the instruments for musical material as well as offer new modes of expression. When direct allusions to traditional music are made, they are expanded upon through the cultural exchange in the ensemble. For example, in *Hope* the idiomatic juxtaposition of ‘body’ and ‘speech’ rhythms is placed in a new context as it defines the opening bars of the piece. In *Zephyr*, the elaborate embellishments and prevalence of minor thirds which characterise Chinese music are complemented by extended technique in both the cymbal and the cello. However, in both *Hope* and *Zephyr*, the Native American flute and the xiao, solo instruments by tradition, perform as equal participants in an ensemble.

The compositions present a range of new and non-idiomatic material for the instruments. In *Under a Cobalt Sky*, for example, the tar and the santoor, which typically play non-polyphonic, melodic music, here participate in the generation of harmonic material, and the santoor performs extended techniques, striking chords in unconventional ways. *Soft-spoken Power*, a piece to be performed in equal temperament despite it being monodic, deviates a great deal from idiom. The Native American flute performs energised, chromatic music of a quick tempo with aggressive articulation, which is beyond the expected meditative or hypnotic range of expression. In *Moving Toward Home*, the uilleann piper encounters a novel way to use the regulators. New notation was developed for the xiao in order to indicate atypical articulation. Throughout *Bird Suite*, the special articulations ‘k’, ‘tut’, and ‘h’ are notated with letters above the notes. Further experimentation on the xiao yielded an additional new technique, namely the vocalisation in the third movement of *Bird Suite*, ‘Loons on the Lake.’
The ethnic instruments included in my compositions do not typically perform in equal temperament. This fact is addressed in different ways, depending on the aesthetic needs of the composition. Whereas *Hope* and *Soft-spoken Power* ask the Native American flutist to perform in equal temperament, five of the compositions provide the textural space for alternate tuning to be heard and to enhance the harmonic world, and *Cloud Shadows* specifically asks the instrumentalists to perform in the tuning system which is natural to the instrument. While microtonality is no longer especially rare in contemporary western art music, exposure to instruments with alternate tuning systems broadens the western art musician’s harmonic world beyond that of equal temperament.

There is a cross-cultural exchange between the compositions as well. For example, the lift-off, a common embellishment in both Native American and Chinese folk music, is applied to the wind parts in *Hope*, *Glissade* and *Cloud Shadows*, and imitated by the strings in *Bird Suite*. The technique is not typically notated in either Chinese or Native American music, and it is something with which few western musicians are familiar. I developed a notation for the embellishment, and explain the technique in the glossaries accompanying the scores. A second example of cross-cultural exchange is found in the irregular rhythms played by the xiao in *Bird Suite*, which are in part inspired by rhythms characteristic of Native American flute music. The concept of speech rhythm as appropriate for flute writing had been internalised, and became part of my approach to writing for all flutes, regardless of genre. The speech rhythms in the suite are not a deliberate reference to Native American music, but rather an example of the way in which our creativity is enhanced by exposure to other cultures.
Through the imitation of timbre, the western art musicians are invited to focus on and appreciate the new sounds included in the ensembles. In *Under a Cobalt Sky*, for instance, the clarinet and violin imitate the quick delay of the tar and the santoor with staccato and pizzicato; and the cello and suspended cymbal imitate the breathy tone of the xiao in *Zephyr*. As noted above, in the third movement of *Bird Suite* the pizzicato violins echo the lift-off, a special technique which is idiomatic to the xiao. Through articulation and technique, a timbral bridge is created between differing genres.

The compositions are often sparsely textured, and this brings three benefits. First, the balance of the ensemble is maintained, and the ethnic instruments are not overpowered. Second, the texture allows the instruments to be introduced individually, inviting the listener to appreciate the new sound or new context. Lastly, the sparse texture allows the aural space for the alternate tuning of the ethnic instruments to be heard and appreciated.

Of the seven instruments included in this work, the flutes were explored to greater depth than the uilleann pipes, santoor, and tar, as they each appear in more than one composition: the Native American flute and the xiao are each featured in three compositions, and the tin whistle in two. This has mainly to do with the fact that I am a western concert flutist. I own several models of each of the flutes, and so was able to experiment and gain knowledge on a first-hand basis. A growth in understanding the xiao, in particular, may be noted in the progression from *Zephyr*, a short trio, to *Bird Suite*, a work for seven musicians and a wide range of percussion instruments, which offers a broader range of musical material in the variety of its five movements.
The possibilities for further exploration of these instruments and integration of their traditions are of course, myriad. A composition for Native American flute, for example, may incorporate vocalists singing ‘down in the throat’, as is characteristic of the genre. The new means of utilising the regulators of the uilleann pipes as seen in *Moving Toward Home* may inspire other novel approaches to this feature. The dastgāh tunings of Persian instruments, which incorporate non-aleatoric microtones and traditionally occupy horizontal lines, could be applied to an ensemble with western orchestral string instruments, perhaps creating new vertical harmonies. Further application of extended techniques of the western concert flute to the tin whistles and the xiao will produce a broad range of new sounds. Harmonics, in particular, may expand their timbral range.

To conclude, I refer once more to Irlandini, who recognises the value of exploring new sounds as well as drawing upon rich and long-standing musical traditions. When composing for an ethnic instrument, the well-researched composer shall strive to become an ‘active member of that instrument’s cultural history’, thereby honouring its past and present, and expanding its future.
APPENDIX A

Additional Photos

The author performing in Sin É, Dublin

Native American flute with F sharp fundamental, six holes, and a smaller five hole flute, A fundamental

Photo by Darius M.  
Used with permission from DeMars Entertainment.

Photo by the author.
A tar player


Shahab Coohe, holding his santoor, and Shayan Coohe, holding his tar

A student and his master

APPENDIX B

Examples of traditional Irish tunes transcribed in the key of G or D

The Blackbird

[Music notation]

The Silver Spear

[Music notation]

268 The source for ‘The Blackbird’ is: Cowdery, The Melodic Tradition of Ireland. All other tunes in this appendix are from: Mitchell, The Dance Music of Séamus Ennis.
The Bucks of Oranmore

2. The Milliner’s Daughter (1st)

1. Bonny Kate
3. The Flannel Jacket

4. The Pipe on the Hob
Appendix C

Suzhou Scenes

(convert to musical notation)
Suzhou Scenes
for solo flute

Quite slowly and with a great deal of freedom $\frac{3}{4}=56$

transcr. Margaret Collins Stoop

Chinese folk tune

Suzhou Scenes
Suzhou Scenes

\[ \text{In strict time } \frac{q}{d} = 60 \]

\[ \text{In strict time } \frac{q}{d} = 56 \]

\[ \text{rit.} \]

\[ \text{rit.} \]

\[ \text{rit.} \]
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Hope

Glossary and Performance Notes

**Instrumentation:** soprano, mezzo-soprano, western concert flute, Native American flute, clarinet in B flat, and one percussion player (quad toms and guiro)

The clarinet is notated one whole step above concert pitch.

**Duration:** 6'15"

In the composition and premiere performance of ‘Hope’, a cedar flute with an F# fundamental was used. The flute was manufactured by High Spirits Flutes, headquartered in Patagonia, Arizona.

**Performance Notes:** The Native American flute is to be played in equal temperament. Along with embouchure and breath support, alternate fingering may be required to play in equal temperament. The chart below shows the alternate fingering used by the composer. AF indicates alternate fingering, and an arrow indicates preferred fingering. As Native Americans flutes are uniquely tuned, the chart may be used as a guide to play in equal temperament. AF indicates alternate fingering, and an arrow indicates preferred fingering.

It is understood that the Native American flute will have a much more narrow dynamic range than the rest of the ensemble. Relative dynamics in the score reflect this.

The soprano and mezzo-soprano are to sing in a non-operatic style, with minimal vibrato.

All grace notes are to be played as quickly as possible.
WINDS:

\[ + \]

Lift-off: on the eighth note (quaver), release all fingers while simultaneously stopping breath, resulting in a percussive sound

\[ \]

Slide: bending without perception of individual half steps

Glissando: playing chromatic notes

PERCUSSION:

Quad Toms

\[ \]

Low Tom  |  Low Mid  |  High Mid  |  High Tom

Rim shots on respective drums

\[ \]

Guiro

\[ \]

Quick stroke  |  Long stroke: the whole length of the guiro  |  Strike the body of the guiro
S

Mezzo

Perc.

Fl.

N.A. Fl.

B. Cl.

S

Mezzo

Perc.

Fl.

N.A. Fl.

B. Cl.

in the chill - est land, the chill - est, chill - est, chill - est land, And on the

in the chill - est land, the chill - est, chill - est, chill - est land, And on the
ne- ver, in ex- trem- ity,  It asked a crumb of me.
Soft-spoken Power
Glossary and Performance Notes

For solo Native American flute

Duration: 4 minutes

In the composition and premiere performance of ‘Soft-spoken Power’, a cedar flute with an F# fundamental was used. The flute was manufactured by High Spirits Flutes, headquartered in Patagonia, Arizona.

Performance Notes: The Native American flute is to be played in equal temperament. Along with embouchure and breath support, alternate fingering may be required to play in equal temperament. The chart below shows the alternate fingering used by the composer. AF indicates alternate fingering, and an arrow indicates preferred fingering. As Native Americans flutes are uniquely tuned, the chart may be used as a guide to play in equal temperament. AF indicates alternate fingering, and an arrow indicates preferred fingering.

- Slide: bending without perception of individual half steps
- Glissando: playing chromatic notes
- Lift-off: on the eighth note (quaver), release all fingers while simultaneously stopping breath, resulting in a percussive sound

All grace notes are to be played as quickly as possible.
Soft-Spoken Power
for solo Native American Flute

Pensive, freely $\frac{\text{d}}{\text{b}} = 84$

Margaret Collins Stoop

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Soft-spoken Power

Energized

Freely, like the opening bars

meno mosso express.

rall.

warble
Moving Toward Home
Glossary and Performance Notes

**Instrumentation:** uilleann pipes, clarinet in B flat, bassoon, and cello
The clarinet is notated one whole step above concert pitch.

**Duration:** 6 minutes

It is understood that the uilleann pipes will have a much more narrow dynamic range than the rest of the ensemble. Relative dynamics in the score reflect this.

All grace notes are to be played as quickly as possible.

![Lift-off](image)
Lift-off: on the eighth note (quaver), release all fingers while simultaneously stopping breath, resulting in a percussive sound

![Slide and Glissando](image)
Slide: bending without perception of individual half steps  
Glissando: playing chromatic notes
Moving Toward Home

Margaret Collins Stoop

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Yearning for the home that was
Moving Toward Home

U.P.C.

B-Cl.

Bsn.

Vc.

U.P.C.

B-Cl.

Bsn.

Vc.

U.P.C.

B-Cl.

Bsn.

Vc.

U.P.C.

B-Cl.

Bsn.

Vc.
Moving Toward Home

U.P.C.

B♭ Cl.

Bsn.

Vc.

U.P.C.

B♭ Cl.

Bsn.

Vc.

U.P.C.

B♭ Cl.

Bsn.

Vc.

U.P.C.

B♭ Cl.

Bsn.

Vc.
Stepping out

C

Stepping out

C

Stepping out

C
Moving Toward Home
Moving Toward Home
**Under a Cobalt Sky**

**Glossary and Performance Notes**

**Instrumentation:** clarinet in B flat, violin, Persian santoor, and Persian tar

**Duration:** 8'40"

Two santoors are be played by one player:

Santoor 1 tuned in E phrygian, with white (middle) strings D4 to E5.

Santoor 2 tuned in B phrygian, with white (middle) strings A3 to B4.

The violin, santoor, and tar are notated at concert pitch (note the octavo basso clef for the tar).

The clarinet is notated one whole step above concert pitch.

All grace notes are to be played as quickly as possible.

= slide, half steps indiscernible

= strum with the thumbnail  = strum with the back end of the mezrab

= strum from the bottom note up  = strum from the top note down

= natural harmonics, sounding one octave higher

= in the tar and santoor parts, stop the pitch from ringing by touching the string
Under a Cobalt Sky

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Clarinet in Bb

Violin

Santoor

Tar

B-Cl.

Vln.

San.

Tar

B-Cl.

Vln.

San.

Tar

B-Cl.

Vln.

San.

Tar

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Under a Cobalt Sky
Under a Cobalt Sky
Under a Cobalt Sky
Under a Cobalt Sky

82

B♭ Cl.  

Vln.  

San.  

Tar

rit  C  Slower  \( \frac{J}{J} = 66 \)

86

B♭ Cl.  

Vln.  

San.  

Tar

90

B♭ Cl.  

Vln.  

San.  

Tar

96

B♭ Cl.  

Vln.  

San.  

Tar
Excited and jubilant  \( \text{\# \#} \)

Under a Cobalt Sky
### Zephyr

**Glossary and Performance Notes**

**Instrumentation:** xiao (a Chinese bamboo flute), cello, and suspended cymbal

**Duration:** 6’30”

In ‘Zephyr’, the airy timbre of the xiao is often accompanied by breath-like sounds in the cello and cymbal parts. In this way, the cello and the cymbal complement the ensemble without overpowering the xiao. While the word ‘zephyr’ means a gentle, westerly breeze, an Irish traditional tune, ‘An Ghaoth Aneas’ (The Wind from the South) is loosely woven into the fabric of the piece.

The xiao used in the composition and premiere performance is an eight-hole xiao with a D fundamental. It is notated at concert pitch.

**Cymbal:**

\[
\text{SB} = \text{superball mallet} \quad \text{☉} = \text{at center} \quad \text{☉} = \text{at rim}
\]

= strike the centre of the cymbal and drag the mallet to the rim

☉ = strike the cymbal with the side of a fist

\[\text{♩} = \text{wire brush} \quad \text{shr} = \text{single hand roll}\]

\[\text{♩} \text{☉} = \text{hard sticks with plastic heads at the rim of the cymbal}\]

\[\text{♩} = \text{strike the side of the cymbal with the side of a wooden stick}\]

\[\text{♩} \text{scrape} \text{☉} = \text{scrape the rim of the cymbal with the side of a metal triangle beater}\]

\[\text{♩} = \text{plastic tip snare sticks}\]
**Cello:**

*silent fingering* = “hammer on,” finger the notes on the fingerboard without bowing

*tonlos* = bow directly on the bridge, little to no pitch discernible

*air noise* = “rauschen,” mute the string a little bit and use very light pressure, resulting in a breathy sound with a touch of pitch

= circular bowing. Quarter note (crochet) equals 48. One rotation per beat.

**Xiao:**

= cover most of the split edge of the xiao with the bottom lip and blow, no pitch discernible

= Quarter-tone bend: drop pitch by approximately a quarter-tone on the last half beat of the note’s duration. The graphic above indicates to bend on the second half of beat three. The bend is executed by lessening breath support while tilting the mouthpiece away from the mouth.

= Lift-off: on the eighth note (quaver), release all fingers while simultaneously stopping breath, resulting in a percussive sound
Mysterious stillness \( \frac{4}{4} = 48 \)

Xiao

Suspended Cymbal

Cello

8

Xiao

Cym.

Vc.

13

Xiao

Cym.

Vc.

19

Xiao

Cym.

Vc.
Zephyr

Xiao

71

Cym.

Vc.

74

Xiao

Cym.

Vc.

77

Xiao

Cym.

Vc.

84

Xiao

Cym.

Vc.
Glissade
Glossary and Performance Notes

**Instrumentation:** high D tin whistle, slide whistle, alto flute, bass clarinet, and snare drum
The clarinet is notated one whole step above concert pitch.

**Duration:** 6'15"

The title ‘Glissade’ makes reference to a sliding dance step. The piece was inspired by a poem by Oliver Postgate, in which the tin whistle evolves from toy to ‘real instrument.’

> When I was nothing but a very little boy
> My own tin whistle was a favourite toy
> I played it madly; I played it sadly;
> I played it gladly; for my private joy!
> Now I’m a man I’ll play it, pleasure bent,
> Not merely a toy but a real instrument.

**Performance notes:**

All grace notes are to be played as quickly as possible.

Slide: bending without perception of individual half steps

Glissando: playing chromatic notes

Lift-off: on the eighth note (quaver), release all fingers while simultaneously stopping breath, resulting in a percussive sound

Quarter-tone bend: drop pitch by approximately a quarter-tone on the last half beat of the note’s duration. The graphic above indicates to bend on the second half of beat three.
SNARE DRUM:

All techniques with sticks have stems up.

\[\text{cross stick}\]

followed by two ordinary strikes

\[\text{stick clicks}\]

**single hand swipe motion on drum head**

All techniques without sticks have stems down.

\[\text{drag finger across drum head}\]

\[\text{tap two fingers on drum head}\]

\[\text{slap stroke, rim}\]
Glissade

High D Tin Whistle
Slide Whistle

Alto Flute
Bass Clarinet

Snare Drum

T.W.  S.W.  B. Cl.

Quite freely
with warm vibrato throughout
glide

say slide whistle

slide positioned
all the way out

say tin whistle
slide all the way up

In strict time

key clicks

as loudly as possible

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Glissade

T.W. 21
S.W. 26
A. Fl.
B. Cl.
S.Dr.

T.W.
S.W.
A. Fl.
B. Cl.
S.Dr.

T.W.
S.W.
A. Fl.
B. Cl.
S.Dr.

T.W.
S.W.
A. Fl.
B. Cl.
S.Dr.
Cadenza: to be played quite freely, like the opening measures
Cloud Shadows
Glossary and Performance Notes

**Instrumentation:** high D tin whistle, Native American flute with an F# fundamental, xiao with a D fundamental (in G), western concert flute, low D tin whistle.

**Duration:** 7’25’’

**Performance Notes:** Equal temperament is not required for the performance of ‘Cloud Shadows’. On the contrary, the players are to perform in the tuning system characteristic of their flutes.

All parts are notated at concert pitch.

Relative dynamics are not written into the score.

All grace notes are to be played as quickly as possible.

- \(\text{Slide: half notes indiscernible}\)

- \(\text{Quarter-tone bend: drop pitch by approximately a quarter-tone on the last half beat of the note’s duration. The graphic above indicates to bend on the second half of beat three.}\)

- \(\text{Lift-off: on the eighth note (quaver), release all fingers while simultaneously stopping breath, resulting in a percussive sound.}\)

- \(\text{Flutter tongue}\)

Finger vibrato: tap two fingers on the open holes two steps below the note being played.
Cloud Shadows

Margaret Collins Stoop

High D Tin Whistle

Native American Flute

Xiao

Western Concert Flute

Low D Tin Whistle

6

TW

NAF

Xi

Fl.

LW

fluttertongue

mp

finger vibrato

lift-off

ord.

lift-off

p

lift-off

mp

ord.

mp

mf

ord.

mp
Bird Suite
Glossary and Performance Notes

A suite in five movements
Total duration: 30 minutes

Instrumentation: xiao, string quartet, and two percussion players, with birdsong as the unifying theme.
The xiao used in the composition and premiere performance is an eight-hole xiao with a D fundamental. It is notated at concert pitch.

1. Listen for the Birds 5’45”
   Percussion I: tam-tam, snare drum, triangle
   Percussion II: triangle, rain stick, two wood blocks

2. Woodpecker’s Song 3’50”
   Percussion I: bell tree
   Percussion II: tambourine

3. Loons on the Lake 6’30” (for solo xiao, strings and percussion tacet)

4. Dancing Owl 6’05”
   Percussion I: crotale on snare drum, snare drum, suspended cymbal
   Percussion II: three wood blocks, shaker

5. Shore Birds 7’25”
   Percussion I: ocean drum (40 cm), large thunder tube
   Percussion II: bass drum and suspended cymbal

Glossary

= Quarter-tone bend down: drop pitch by approximately a quarter-tone on the last half beat of the note’s duration. The graphic above indicates to bend on the second half of beat three.

= Quarter-tone bend up: slide up approximately one quarter-tone at the end of the note

Slide: bending without perception of individual half steps
Glissando: playing chromatic notes

All slides are to be performed as slowly as possible.

All grace notes are to be played as quickly as possible and before the beat.
Xiao

tut: begin an end the note with a sharp tongue
k: begin note with the back of the tongue
t: return to ordinary tonguing
h: begin note without any tongue articulation

+ = lift-off: Release all fingers while simultaneously stopping breath, resulting in a percussive sound with indiscernible pitch

= harmonic. Finger G and overblow to sound D6

Strings

= a diamond note head indicates air noise: mute the string a little bit and use very light pressure, resulting in a breathy sound with a touch of pitch

= x note head indicates to exhale audibly, no phonation

= Bartók pizzicato
Percussion

1. Listen for the Birds

Both Percussion I and Percussion II are notated on a three-line staff for this movement.

Percussion I:

Tam-tam:

\[ \begin{array}{c}
\text{notated on the bottom staff line, stems down} \\
\text{diamond note head on bottom line: scrape edge of tam-tam with} \\
\text{triangle beater}
\end{array} \]

Snare Drum:

\[ \begin{array}{c}
\text{notated on the top line, stems down} \\
\text{= single hand swipe with wire brush on snare drum head, in} \\
\text{steady pulses}
\end{array} \]

Triangle:

\[ \begin{array}{c}
\text{notated on the space above the top line, stems up} \\
\text{= choke. A staccato mark above the note indicates to stop sound with} \\
\text{hand to end note}
\end{array} \]
(Listen for the Birds, Percussion I, triangle continued)

\[
\text{\textbf{Triangle:} }
\]

\[
\text{\textbf{Rain Stick:} }
\]

\[
\text{\textbf{Two Wood Blocks:} }
\]

Percussion II:

Triangle:

\[
= \text{choke. A staccato mark above the note indicates to stop sound with hand to end note}
\]

Rain Stick:

\[
= \text{allow beads to cascade for the duration}
\]

\[
= \text{holding horizontally, shake the rain stick in quaver pulses, notated on the bottom space, stems up}
\]

Two Wood Blocks:

\[
= \text{Low on bottom line, high on top line, both with stems down}
\]
2. Woodpecker's Song

Percussion I:

**Bell Tree**: The pitches are chosen at the player’s discretion. The placement of notes in the staff gives a general shape to the musical gestures.

\[ \text{\textendash} \text{\textendash} \text{\textendash} \] = bracket denotes repeated pitches

\[ \text{\textendash} \text{\textendash} \] = choke. A staccato mark above the note indicates to stop sound with hand.

\[ \text{\textendash} \text{\textendash} \] = mute bell with hand, before sounding pitch

4. Dancing Owl

Percussion I:
Notated on a single line staff for his movement

**Snare Drum:**
Notated on the staff line

\[ \text{\textendash} \text{\textendash} \] = bow the low crotale, which has been placed on the edge of the snare drum.

\[ \text{\textendash} \text{\textendash} \] = after bowing the crotale, move it across drum head with hand. At the staccato mark, choke (stop) the sound by touching the crotale.
(Dancing Owl, Percussion I, snare drum continued)

\[
\begin{array}{c}
\text{\textbullet} \text{\textbullet} \text{\textbullet} \\
\text{\textbullet} \text{\textbullet} \text{\textbullet} \\
\end{array}
\]

= stems down, swipe drum head in circular motion.
Stems up: strike

**Suspended Cymbal:**

\[
\text{\textbullet}
\]
notated on the space above the staff line, stems up

\[
\text{\textbullet}
\]
= scrape the cymbal with a coin

**Percussion II:**

Notated on a three-line staff for this movement

\[
\begin{array}{c}
\text{\textbullet} \\
\text{\textbullet} \\
\end{array}
\]
three Wood Blocks: low, medium, and high, all stems down

\[
\begin{array}{c}
\text{\textbullet} \\
\end{array}
\]
Shaker: notated on the space above the top staff line, stems up
5. Shore Birds

Both Percussion I and Percussion II are notated on a single line staff for this movement.

**Percussion I:**

**Ocean Drum:**
Notated on the staff line, stems up.  
To be held horizontally, as a platter, or vertically, with the rim facing the floor  

= holding drum vertically, tap drum head with fingers

= slow swirl: holding drum horizontally, slowly swirl beads

= quick swirl: holding drum horizontally, make a quick swirling motion, one rotation

= shake: holding drum vertically, shake beads in up and down motion

= crack: Holding drum horizontally, make a forceful vertical movement so that the beads strike the head
(Shore Birds, Percussion I continued)

**Thunder Tube:**
Notated on the staff line, stems down

\[
\begin{align*}
\text{\textbullet\textbullet} \\
\text{\textbullet} \\
\end{align*}
\]

= long snap: pull the full length of the metal spring and let it snap against the drum head, resulting in a loud sound.

\[
\begin{align*}
\text{\textbullet\textbullet\textbullet} \\
\text{\textbullet} \\
\end{align*}
\]

= rocking sustain: sustain the sound of the long snap by rocking the drum side to side, about 30 degrees in either direction.

\[
\text{\textbullet\textbullet}
\]

= short snap: grasping the metal spring about halfway down its length, release to create a sound at a lower dynamic than the long snap.

\[
\begin{align*}
\text{\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet\textbullet} \\
\end{align*}
\]

= hand sustain: holding tube upright, move an open palm up and down over the open end of the drum to create a sustained vibrato.
(Shore Birds continued)

**Percussion II:**

**Bass Drum:**
Notated on the staff line, stems down

\[\text{\textbf{\textbullet}}\]

\[=\text{strike rim of drum with bamboo bundle sticks}\]

\[\text{\textbf{\textbullet}}\]

\[=\text{ordinario}\]

**Suspended Cymbal:**
Notated on the space above the staff, stems up

\[\text{\textbullet}\]

\[=\text{strike the edge of the cymbal with the side of the beater}\]
With quiet expectation  $j = 112$

**Xiao**

Tam-tam
triangle beater
scrape edge

Percussion I

$\frac{4}{4}$

Tam-tam
triangle beater
let vibrate

Percussion II

$\frac{4}{4}$

Tam-tam
triangle beater
let vibrate

**Violin I**

**Violin II**

**Viola**

**Cello**

$\frac{3}{4}$

1. Listen for the Birds

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1. Listen for the Birds

Xiao

Perc. I

Tam-tam  L.v.

mf

Perc. II

Rain Stick

Vln. I

Vln. II

Vla.

Vc.

mp

mp

mp

mp

mp

mp

mp

mp

mp

Xiao

Tam-tam  L.v.

mf

Perc. I

mf

mp
1. Listen for the Birds

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

54

p

PPP

pp

PPP

pp

PPP

pp

PPP

PP

PPP

Wood Blocks
one low, one high

Rain Stick

< Wood Blocks

&
1. Listen for the Birds

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Snare Drum
wire brushes

to Rain Stick

single hand swipe on drum head

roll
to Tam-tam
take soft beaters

pp
1. Listen for the Birds

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

---

Rain Stick

exhale

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente

as loudly as possible

a niente
1. Listen for the Birds

Xiao

Perc. I
shaken in quaver pulses

Perc. II
gradually allow pitch to enter the note

Vln. I
gradually allow pitch to enter the note

Vln. II
gradually allow pitch to enter the note

Vla.
gradually allow pitch to enter the note

Vc.
gradually allow pitch to enter the note

Tam-tam soft beaters

soft beaters

slowly to ordin.

gradually to ord.

gradually to ord.

gradually to ord.

Tam-tam soft beaters

slowly to ordin.

gradually to ord.

gradually to ord.

gradually to ord.

Tam-tam soft beaters

slowly to ordin.

gradually to ord.

gradually to ord.

gradually to ord.

Tam-tam soft beaters

slowly to ordin.

gradually to ord.

gradually to ord.

gradually to ord.

Tam-tam soft beaters

slowly to ordin.
1. Listen for the Birds
1. Listen for the Birds

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Wood Blocks

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Wood Blocks
1. Listen for the Birds
1. Listen for the Birds
1. Listen for the Birds
1. Listen for the Birds

Xiao

Perc. I

Wood Blocks

Perc. II

Vln. I

Vln. II

Vla.

Vc.

228

234

take wire brushes

tut
1. Listen for the Birds

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Wood Blocks

Snare Drum

Triangle

Wood Blocks

Triangle

Wood Blocks

Triangle

Wood Blocks

Triangle

Wood Blocks

Triangle

Wood Blocks

Triangle

Wood Blocks

Triangle

Wood Blocks

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Wood Blocks

Triangle
1. Listen for the Birds
1. Listen for the Birds

\( \text{Xiao} \)
\( f \quad mf \quad pp \)

\( \text{Perc. I} \)
Rain Stick

\( \text{Perc. II} \)

\( \text{Vln. I} \)

\( \text{Vln. II} \)

\( \text{Vla.} \)

\( \text{Vc.} \)

\( \text{Tam-tam} \)
triangle beater
tl.v.

p

f

pp

a niente

p

a niente

p

a niente

p

a niente
1. Listen for the Birds

294

Xiao

Perc. I

Perc. II

304

Xiao

Perc. I

Perc. II

311

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

mf

mf

mf
2. Woodpecker's Song

Driving \( \frac{1}{4} = 96 \)

Xiao

Bell Tree

Tambourine

Violin I

Violin II

Viola

Cello

Pitches are chosen at player's discretion. Repeated pitches are bracketed.

Hard plastic mallets

choke

\( \text{mf} \)

\( \text{pizz.} \)

\( \text{f} \)

\( \text{mp} \)

\( \text{mp} \)

\( \text{mp} \)

\( \text{mp} \)

\( \text{mp} \)

\( \text{mp} \)

\( \text{mf} \)

\( \text{pizz.} \)

\s\text{pizz.} \s

\( \text{tut tut} > \)

\( \text{same pitches} \)

\( \text{pizz.} \)

\( \text{pizz.} \)

\( \text{mp} \)

\( \text{f} \)

\( \text{mp} \)

\( \text{mp} \)

\( \text{f} \)

\( \text{f} \)

\( \text{f} \)

\( \text{f} \)

\( \text{f} \)

\( \text{f} \)

\( \text{f} \)

\( \text{f} \)

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2. Woodpecker's Song
2. Woodpecker's Song
2. Woodpecker's Song

B.T.
roll whole tree

Tamb.
shake

Vln. I
pizz.

Vln. II
pizz.

Vla.

Vc.
mp
2. Woodpecker's Song
2. Woodpecker's Song

56

B.T.

Tamb.

Vln. I

Vln. II

Vla.

Vc.

59

B.T.

Tamb.

Vln. I

Vln. II

Vla.

Vc.
2. Woodpecker's Song
3. Loons on the Lake

Margaret Collins Stoop

Quite freely, contemplative $\frac{d}{=} 69$

allow pitch to fluctuate
with dynamic change

Xiao

Voice

(sing into xiao,
unless
there are lyrics)
3. Loons on the Lake
3. Loons on the Lake
4. Dancing Owl

Margaret Collins Stoop

Peaceful but eerie  \( \dot{=} 72 \)

Xiao

Percussion I

Percussion II

Violin I

Violin II

Viola

Cello

Pizz. sul ponticello

Low Crotale placed on edge of Snare Drum (snares off)

Bow the edge of the crotale

let vibrate

3 Wood Blocks rubber mallets

placed a set of keys on the snare drum head

10

Perc. I

Wood Blocks

Perc. II

Vl. I

mp

Vl. II

moving away
from the bridge

Vla.

Vc.

mp

17

Xiao

quarter-tone bend

Perc. I

Perc. II

Vl. I

Vl. II

Vla.

Vc.

lift-off

play with fingertips

set crotale and keys aside

snare on, take wire brushes

pizz.
4. Dancing Owl

Xiao

Wood Blocks fingertip

Perc. I

Snare Drum wire brushes

Perc. II

swipe circles in quarter note pulses

Vln. I

Vln. II

Vla.

Vc.

Ord.
4. Dancing Owl

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

44

Snare Drum

cresc.

Shaker

mp
cresc.

Wood Blocks

rubber mallet

mf

48

Snare Drum

cresc.

Shaker

mp
cresc.

Wood Blocks

rubber mallet

mf

F

F

F

F

F

4. Dancing Owl

122

F

F

F

F

F

F

F

F

F

F

4. Dancing Owl

122

F

F

F

F

F

F

F

F

F

F
4. Dancing Owl

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Snare Drum

Shaker

Wood Blocks

Snare Drum

Wood Blocks

Fingertips

Pizz.
4. Dancing Owl

Xiao

\[ \text{mf} \] strike edge \[ f \]

Perc. I

\[ \text{mf} \]

Suspended Cymbal

Wood Blocks

rubber mallets

Perc. II

\[ \text{pizz.} \] \[ \text{mf} \]

Vln. I

\[ \text{pizz.} \] \[ \text{mf} \]

Vln. II

\[ \text{pizz.} \] \[ \text{mf} \]

Vla.

\[ \text{mf} \] \[ \text{pizz.} \]

Vc.

\[ \text{mf} \]

83

Xiao

\[ \text{mf} \] strike edge

Perc. I

\[ \text{mf} \] strike edge

Perc. II

Vln. I

Vln. II

Vla.

Vc.
4. Dancing Owl

99

Xiao

Susc. Cymb.

Perc. I

Wood Blocks

Perc. II

Vln. I

mp

Vln. II

mp

Vla.

mp

Vc.

mp

104

Xiao

Sus. Cymb.

Perc. I

wire brush
drive triangle beater

Perc. II

strike edge

single hand roll

Vln. I

Vln. II

Vla.

Vc.
Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Wood Blocks

Sus. Cymb.
4. Dancing Owl

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

mf

Sus. Cymb.

take coin

srage with coin

l.v.

set mallets aside

fingertips

mp

mf

arco

p

arco

arco

mp

place crotale on snare drum

snares off

take a set of keys on the snare drum head

take bow

Crotale

place shaker

pizz.

pizz.

pizz.

pizz.

arco

arco

arco

arco

mf

mf

mf

mf

mf

mf

mf

mf

mf

mf

mf

mf

mf
4. Dancing Owl

Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

133

remove keys from drum head

Shaker

pp

mp

pp

mp

pp

139

f sempre al fine

choke

Wood Blocks

P fingertips

Wood Blocks

mf

mf

mf

mf
Xiao

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Wood Blocks
fingertips

Shaker

Suspended Cymbal

Suspended Cymbal

scrape with coin

sul tasto

sul tasto

sul tasto

sul tasto

sul tasto
5. Shore Birds

Margaret Collins Stoop

Cacophonous \( \text{jeté} \)  
quarter-tone bend

Xiao

Percussion 1
Ocean Drum \( \text{vertical} \)  
ap with fingers

Percussion 2
Bass Drum \( \text{bamboo bundle sticks} \)

Violin I

Violin II

Viola

Cello

5 \( \text{jeté} \)  

Xiao

Perc. 1

Perc. 2

Violin I

Violin II

Viola

Violoncello

5. Shore Birds
5. Shore Birds

Xiao

Perc. 1

Perc. 2

Vln. I

Vln. II

Vla.

Vc.

80

let decay

Sus. Cymbal

Bass Drum

Ocean Drum

Sus. Cymbal

Bass Drum

Ocean Drum
5. Shore Birds

Xiao:

Perc. 1:

Perc. 2:

Vln. I:

Vln. II:

Vla.:

Vc.:

132

Xiao:

Perc. 1:

Perc. 2:

Vln. I:

Vln. II:

Vla.:

Vc.:

132