Diction For Mandarin/Chinese Singers: A Methodology To Achieve Resonant Tone And Vowel Unification In Western Choral Music

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DICTION FOR MANDARIN/CHINESE SINGERS: A METHODOLOGY TO ACHIEVE RESONANT TONE AND VOWEL UNIFICATION IN WESTERN CHORAL MUSIC

by

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DEDICATION

I dedicate this dissertation to my parents, who have been a great source of inspiration and support. This dissertation is also dedicated to Dr. Alicia Walker, a great mentor who has encouraged, educated, and inspired me and build up confidence as a choral conductor. To the Cheng family, Pearce, Ruth, and Ariel, I am grateful to have their kind support, love, encouragement, and family bond. I am grateful to my dissertation committee members, Dr. Wyatt, Dr. Gowan, and Dr. Stallard for their patient, professional guidance during my dissertation process. I would not have been able to complete this degree without you all.
ABSTRACT

Understanding vowel production is vital in order to develop a rich choral tone based on unified vowels, appropriate resonance, and freely produced singing. Likewise, correct articulation of consonants produces understandable text. Enunciating the texts of Western choral repertoire is often challenging for Mandarin singers, and learning English pronunciation requires a significant amount of rehearsal time. Further, amateur and developing singers in Mandarin-speaking countries often employ a bright sound and lowered soft palate when singing, in common with their native speaking position. Therefore, voice placement, resonance, and vowel modification must be carefully addressed and improved upon when they are singing Western choral music, and the conductor must also understand the challenges of unfamiliar consonant articulation.

The principal purpose of this document is to present a methodology to achieve resonant tone, vowel unification, and clarity of diction, with the goal of assisting Mandarin/Chinese singers’ performance of the Western choral canon. To facilitate Mandarin singers’ understanding of the differences between English and Mandarin, I will present a phonological analysis and comparison between English and Mandarin Chinese, then address the problematic issues for Mandarin singers related to the pronunciation of English vowels and consonants. I will address vocal technique through breath management, formation, placement and modification of vowels, articulation of consonants, and the perception of timbre to provide Mandarin choirs and their conductors a systematic method to develop resonant tone, vowel unification, and clarity of diction.
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INTRODUCTION

The purpose of this dissertation is to present a methodology to achieve resonant tone and vowel unification, with the goal of assisting Mandarin/Chinese singers’ performance of the Western choral canon. Asian singers who are non-native English speakers often have difficulties enunciating Western choral music. As a result, Asian singers spend a disproportionate amount of time in rehearsal learning to pronounce the English lyrics. Moreover, amateur and developing singers in Asia often employ a brighter sound and lowered soft palate when singing, in common with their native speaking position, so voice placement, resonance, and vowel modification must be carefully addressed.

The principles of diction are best approached through the technical terminology of phonetics and through the International Phonetic Alphabet (IPA). These tools, once clearly understood, enable singers to recognize language sounds precisely and are an invaluable aid in mastering diction in foreign languages. Singers often use their own linguistic accents when they are speaking or singing in a foreign language. IPA is a useful tool to communicate pronunciation rules to help singers who are required to sing in languages other than their own.

To achieve resonant tone, articulating vowels in a consistent manner is important for a focused sound, and in the choral setting it is even more important than in solo singing. In the choral setting the use of unified vowels improves blend and intonation.
Employing vowel modification for different vocal ranges, such as higher pitches, is also an effective way to improve choral tone.

The research concerning western diction for Asian speakers has primarily focused on the individual singer, specifically Japanese, Korean, and Chinese singers. For example, the following studies emphasize the demonstration of correct placement and shape of the articulators in various ways. Chang\(^1\) identified and compared speech difficulties for Chinese singers when singing in English, Italian, German, and French. She developed exercises using IPA symbols to address difficult sounds and combinations of words. Yang\(^2\) addressed English diction for Korean singers, presenting a phonological analysis of problematic areas and a guide for teaching English diction at the sound level, word level, and phrase level. Lim’s\(^3\) publication, entitled “The perception of voice teachers regarding English pronunciation difficulties among native Chinese, Japanese, and Korean students,” focused on singing English songs with proper diction.

These three dissertations were written for non-native English speakers and singers to resolve their difficulties in speaking foreign language and address clarity of enunciation issues. Their diction analyses and vowel exercises were published primarily for the solo singer, and not particularly for the choral ensemble.

In the western choral education system, diction, vowel modification, and resonance have been widely adopted to master choral singing. The goal of this research

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is to help Chinese/Mandarin choral singers achieve resonant tone and vowel unification in order to perform the Western traditional repertoire effectively. Drawing on existing research, and the foundations of western choral music education, I have developed a methodology to resolve the diction and enunciation issues for Chinese/Mandarin choirs. This methodology will employ choral rehearsal techniques, ensemble vowel modification, IPA education, and healthy singing to achieve choral blend and produce the richness of tone resulting from individual timbres unified in song.
CHAPTER 2

LITERATURE REVIEW

There have been many articles, textbooks, and media resources for choral singing published worldwide. These resources address diction, resonance, performance practice, and vocal pedagogy for singers and conductors, but do not address these issues as they pertain to Mandarin choral singers who are performing Western choral music. To Mandarin choral singers, the pitches and rhythms of Western choral repertoire may not be challenging, but singing in foreign languages and learning to articulate Western diction is quite difficult. These challenges often slow the rehearsal pace and impede the learning process. This literature review will focus on the analysis of Chinese phonemes, the significance of choral warm-up exercises, the pedagogy of diction and articulation for singers, the articulation of singing vowels, and proper modification of vowels in the upper range for male and female singers. All materials will be related to the foundations of healthy singing, clarity of diction, and resonant choral tone, as appropriate to this document.

Chinese Phonemes

Lim’s dissertation focused on the phonological comparisons between English and Chinese, Japanese, and Korean vowels and consonants in order to develop an effective method of singing English songs with proper diction.\(^4\) The charts\(^5\) of general Chinese

native speakers’ difficulties with vowel and consonant articulation were useful in the development of my methods to address tone and vowel unification. Details are described in Chapter Four, English Phonic Challenges for the Mandarin Singers.

**Warm-up Exercises**

Jordan noted that the primary role of the warm-up is to transition from the speaking voice to the singing voice. He further stated that foundations of good vocal health and basic technique are goals in every choral warm-up. Jordan presents fourteen pedagogical cardinal rules that will promote healthy singing during the rest of the rehearsal when warm-up exercises are conducted correctly. Teaching singers to sing "on the breath" (using appropriate breath support) at all times is one of the conductor’s primary responsibilities. Singing off the breath (lacking appropriate breath support) usually causes other choral problems, such as an edgy, harsh sound, a breathy, thin sound, over singing, pitch problems, and a lack of dynamic flexibility.

Jordan’s pedagogical cardinal rules include singing on the breath at all times and using the sigh to create space (via a lifted soft palate) during the process of vocal warm-ups. He specifically mentioned that vocal sounds must be spacious, high, and forward (SHF) at all times. Jordan said

> The result of such vocalism is a bright, brilliant, and resonant sound in which the pitches are clear and distinct. The sound must also be spacious. A sound that is spacious possesses a roundness and fullness of tone aurally distinguishable from a sound that lacks space (one that is small, pressed, and airy and lacks freedom and vocal color).

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7 Ibid., 195.
In the same way, Kemp used the phrase “emboucher your face” to improve the clarity of tone and pitch.\(^8\) To adjust the placement forward, Kemp’s idea is to use “emboucher” as a first step on the helping singers find frontal buzz, which includes raising the soft palate, the hum-buzz (buzzy “ng”), and incorporating frontal consonants. Kemp also addresses register and placement for female and male singers.

From both Jordan’s and Kemp’s views of the warm-up exercise, employing these vocal skills can lead to a relaxed larynx, throat, tongue, and flexible vocal production. Singing with forward placement presents the clarity of tone and pitch that will help the choral ensemble create a roundness and fullness of tone quality.

LaTour and Davids pointed out that a productive warm-up must be a thoughtful process that addresses important aspects of vocal technique essential to the vocal development of singers.\(^9\) Resonance will work hand in hand with vowels; exercises that play with the tone color can be added to encourage flexibility of sound. The dynamic level can be varied to work toward a free, resonant sound regardless of dynamic. They suggested using vowels that are comfortable to singers—generally [a] for women and men, but modifying to [ɔ] in the upper portion of the men’s range.

Webb presented that the whole body is the instrument of the singer and developed the acronym FREE (Freedom, Resonance, Energy, and Expression) to build four qualities of vocal sound that are found in almost every good singer.\(^10\) He employed many active processes, visual imagery, and suggestions rather than repeating the same verbal

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instructions to the singers. In the warm-up section, he maintained that vocalizing downward greatly improves singers' range and intonation; humming helps them develop a resonant quality as they blend the hum into vowels and consonants. Moreover, humming has several functions; among them are helping the singers discover a clear tone, and allowing the singers to feel the resonance of each pitch across the vocal range.

**Speaking and Singing**

Doscher pointed out the difference between speaking and singing. In speech there is widespread use of gliding pitch modulation. In classical singing, specific tonal steps are indicated. Vowels make up 99% of the singing sound and must be properly tuned. The functional unity of proper breathing, an efficiently operating vibrator (vocal folds), and an appropriate resonating tract are the prerequisites for the art of intelligible diction.

Emmons and Chase demonstrated the difference between speaking and singing, showing that breaths are far more stringent for singing than for speaking; vowels must be sustained for longer durations in singing than in speaking; the range covered by the singing voice far exceeds that used for speaking; the sounds of singing demand greater fluctuations of dynamics; and singing requires a constant level of resonance not necessary for speaking. The authors presented their viewpoints on the comparison of acoustical and speech vowels:

…whereas spoken vowel values vary according to languages and dialects, in singing they cannot depart from the coincidence of a vowel pitch and a harmonic of the sung pitch. This is an absolute of singing. This is one of the reasons that a

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person can sing a foreign language without an accent but cannot speak it without an accent.¹³

**Clarity of Diction**

Emmons and Chase said that beauty of tone depends primarily on the vowel, whose role is to be comprehensible, perhaps by means of its modification.¹⁴ An efficient consonant contributes to vowel clarity by not interfering with the comprehension of the vowel. More importantly, consonants are the backbone of text clarity. The authors defined the following two basic elements of singing expression: 1) the musical element of the voice—accurate, sustained, acoustically suitable vowels, and 2) the expressive communication of speech—accurately and cannily executed consonants with some help from the vowels.

In *Up Front*, Webb concluded that singers and listeners agree that diction is important to the success of a choral group.¹⁵ Diction is a vitally important aspect of choral singing, because clear enunciation enables the audience to understand the words; uniformity of vowel sound promotes uniformity of pitch; uniformity of consonant articulation permits rhythmic uniformity; the flexibility of lips, tongue, and jaw that makes good diction possible promotes healthy and efficient vocal production. Vowels are also described in terms of the relationship between the tongue and the roof of the mouth. Thus, a vowel is “high” or “low” depending on the distance from the tongue to the roof of the mouth. “Front” or “back” describes the point at which the tongue is closest to the roof of the mouth. A consonant is described as voiced or voiceless (unvoiced), depending on

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¹⁴ Ibid., 64-91.
whether the vocal cords vibrate during its articulation. A consonant that can be whispered is by definition voiceless.

**Use of the Articulators—Lips, Lower Jaw, and Tongue**

Emmons and Chase emphasized that the correct positions of the tongue define vowels, and are instrumental in producing precise intonation, blend, high and low range, intelligible diction, and beauty.\(^{16}\) The neutral vowel \([\Lambda]\) is the only vowel with a completely relaxed tongue. “Front vowels like [i] or [e] cannot be sung identifiably with a flat tongue, and the all-important head voice cannot be added in the upper range when saddled with a tongue that does not move from the position of lower pitches,” said Emmons and Chase\(^ {17}\). According to the authors, special attention must be paid to the four vowels required to produce most of the modifications on the upper *passaggio* notes and higher pitches: \[\text{ʊ}, [e], [\Lambda], \text{and } [\varepsilon].\]

**Vowel Uniformity and Clarity of Consonance**

Kemp states that clarity of vowel placement creates beautiful choral blend and provides intelligible diction.\(^ {18}\) He believes women usually need more “loft” (echoey, hooty head-tone quality) in their mid-range, while men need a brighter, more forward-placed resonance. In choral singing, it is often most effective to warm the women up on \([u]\) and the men on \([ɔ]\) in their mid-ranges. He provides basic rules for modifying vowels, for projecting consonants, and for articulating consonants.

\(^{17}\) Ibid.
\(^{18}\) Kemp, *The Choral Challenge*, 75-79.
Modification of Vowels for Pitches

LaTour and Davids affirmed that most singers must modify vowels as they sing higher pitches.\(^\text{19}\) They mentioned that the benefit of vowel modification is that it helps to prevent front vowels (particularly [i]) from sounding too bright or brassy at high pitches. As long as the vowel is not modified too much, it will remain understandable, particularly given the context of the lyrics. Moreover, in the choral setting those sections not singing in the upper portions of their range will be singing the vowel in the normal manner. The authors further detailed the modification of vowels for women and men’s high range singing.

Emmons and Chase equated the voice to a musical instrument, responsive to the laws of acoustics just as any instrument is.\(^\text{20}\) In the chapter on vowel modification, they note that when the vowel being sung is compatible with the sung pitch, three advantageous things happen: the singer is more comfortable, the tone is more beautiful, and the air supply lasts longer. However, “vowel modification must be mastered to facilitate a smooth transition from low to high and soft to loud…As a basic rule, the louder or higher, softer or lower a vowel is sung, the more it will migrate,” said Emmons and Chase.\(^\text{21}\) For teaching vowel modification, the authors suggest using a medium-range register, teaching the entire group to sing the interval of a perfect fifth ascending, then descending, sliding on the vowel [ʌ] (as in duh or up) with a large mouth opening; then teaching the same slide on the vowel [ʊ] (as in foot) with a smallish mouth opening and rounded lips.

\(^{19}\) Davids and LaTour, *Vocal Technique*, 99-105.
\(^{21}\) Ibid., 119.
CHAPTER 3
A PHONOLOGICAL ANALYSIS AND COMPARISON BETWEEN ENGLISH AND MANDARIN CHINESE

Good tonal quality, vocal freedom, clarity of diction, and sensibility of distinctive vowels are important elements in singing for the choral ensembles. Phonetically, words and sentences are nothing more than a stream of consonants and vowels. However, a singer needs to break down the words of any language into individual consonants and vowels and shape the articulation of each speech sound with precision and energy.\(^{22}\) Mandarin Chinese singers who are non-native English speakers often have difficulties in enunciating Western choral music. As a result, the ensembles spend too much time in rehearsal learning to pronounce the English or other Western lyrics. The challenge includes articulation of vowels and consonants, placement of vowel sounds, and effective unification of vowels across the ensemble. Because of their native speaking position, amateur singers often employ a brighter sound and lower soft palate when singing. These singing habits will limit their ability to produce beautiful resonance, intelligible diction, and unified vowel sound.

There are certain English vowels and consonants that do not exist in Mandarin. Many English phonemes generally have equivalents in Mandarin Chinese, but some particular English phonemes do not have Chinese counterparts, e.g., the vowels [ɪ, ɛ, æ, ʌ, \(\ldots\)]

ʊ, œ] and consonants [v, θ, Ʌ, tʃ, dʒ]. The other linguistic challenges include consonant clusters, connected speech, and word stress. Characteristic intonation patterns are also very challenging to Mandarin speakers when singing in English or other Western languages. For Mandarin singers, studying English diction can facilitate and improve their pronunciation, enunciation, and articulation when singing Western choral music. Eisenson stated that because of the proximity of articulatory position of American-English sounds and some other similar ones such as Spanish, French, Italian, and German, the tendency to carry over foreign-language speech habits is understandable.  

In this chapter, I will discuss the phonological analysis between English and Mandarin Chinese, with a focus on vowels, consonants, diphthongs, and glides. The linguistic differences noted from the comparison can help Mandarin singers articulate English diction effectively and naturally. Furthermore, distinguishing vowels and articulating consonants precisely would create expressive blend, resonance, and more intelligibility in choral singing. I will use an analysis of the differences between English and Mandarin Chinese to help Mandarin singers improve their grasp of the English language, and provide a resource for those who conduct these singers.

Vowels in Singing

Identifying and producing clear vowel sounds are important skills for good diction. Specifically, understandable singing needs clear vowels. From my observation of rehearsal techniques between American and Mandarin choirs, the most significant differences are the unified vowels, rich resonance, and clarity of diction in American ensembles. In Mandarin speaking countries, English is at most a secondary language, if it

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23 Jon Eisenson, *Voice and Diction*: a program for improvement (Boston: Allyn and Bacon, 1997), 263.
is spoken at all. When non-native singers sing foreign repertoire, they often struggle with linguistic pronunciation, enunciation, and articulation. Each vowel sound has a specific structure, governed by the position of the lips, jaw, tongue, teeth, and soft palate, and these articulators change the size and shape of the vocal tract.

In Mandarin speaking countries, non-native English speakers are taught to distinguish English vowel sounds by using the terms “long” or “short” to classify the vowel. This is confusing to singers, since all vowels are sustained when singing text. For example, the [i] and [ɪ]: the [i] sound is described as long and [ɪ] is short. These vowels may be more accurately described as closed and open for singing. In my observation of Mandarin speech patterns, I have found that Chinese has very little inflection as compared with English. Based on Chinese speaking patterns, along with their understanding of long and short vowel sounds, Mandarin speakers often have difficulty producing English vowels with appropriate shape and inflection. For instance, when singing, they may have difficulty differentiating between [i] and [ɪ]. In the NATS journal article, “The Significance of Recognition of the Vowel Core in the Teaching of Singing and Voice Rehabilitation,” Virginia Morrow states:

> Each vowel has a quality which is unique to that particular vowel, a quality which names the vowel or makes it what it is. The vowel core then, is the identifying quality of a given vowel. It is also an acoustical phenomenon; i.e., when the vowel is identified precisely…resonance chambers of the vocal instrument are immediately re-shaped (coupled) so that one hears optimum amplification of the basic sound; one has more volume, and potential for dynamic variation, and one has improved intonation and greater ease of production.²⁵

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In order to deliver beauty, stability, resonance, and ease on a particular pitch, understanding of the vowel is vital in choral singing for Mandarin choirs.

**Vowel Production in English**

The phonetic systems of English and Mandarin are quite different. English consists of twenty vowels, twenty-four consonants, five diphthongs, and is an intonation language—inflexion is meaningful. Almost all vowels are more open in space and louder than all consonants; Vowels have greater sonority that carries information about stress, speaker identity, and emotional tone.²⁶ Barbara M. Doscher found that

> vowels make up 99% of the singing sound and must be properly tuned to produce an even, fluid sound. The functional unity of proper breathing, an efficiently operation vibrator (vocal folds), and a well-tuned resonating tract are the prerequisites for the fine art of intelligible diction.²⁷

That is why the study of vowels is very important for foreign language pronunciation, and is profoundly significant in choral singing. Most of the vowel sounds in English are formed by the articulators: the tongue, lips, and jaw. Singers who are studying vowels may benefit significantly from the use of the English Vowel Chart (Figure 3.1²⁸). The chart describes the position of each of these. For instance, vowels on the top left side will be formed with the jaw more closed, and the tongue more forward. To form the vowels on the right side, the lips are more rounded and the tongue is further back. The vowels at the bottom of the chart call for a more relaxed, open jaw. Neutral vowels are in the center of the chart.

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Diphthong Production in English

The diphthong is composed of two vowels in the same syllable. In English there are five diphthongs, [aɪ], [eɪ], [ɔɪ], [aʊ], and [ʊ]. Typically, English diphthongs end in a lax high vowel [i] or [ʊ]. In the production of diphthongs, the tongue moves from one position to another, in which the first vowel is considered to be longer or sustained than second vowel. Teachers of singing often use the terms “open” and “closed” to refer to vowel formation (Figure 3.1), while linguistic scholars refer to them as “lax” and “tense”.29

Singers may pronounce vowels correctly when speaking, but may mispronounce or drop the second vowel when singing. This is a common issue for the Mandarin singer, who would focus on the second vowel more than the first one. In every diphthong, the first vowel must be sustained, with the second vowel added at the very end. Even when

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29 Pennington, Phonology in English Language Teaching, 98.
the diphthong is to be sung over several notes, the first vowel is sung on all the notes and
the second vowel is sung at the end of the very last note as shown in Figure 3.2.

![Figure 3.2 Diphthong in Handel’s “Hallelujah, Amen” from Judas Maccabaeus](image)

**Contrasting Pairs of Tense/Lax Vowels in English**

As depicted in the high to mid-low range of the vowel diagram (Table 3.1), in
English there are four main pairs of vowels; each exhibits distinctive characteristics
(Table 3.1). It is quite challenging for the non-native speakers to differentiate them.
Traditional Italian or Latin vowels [i, e, α, o, u] are called the long vowels because in
speech they are sustained longer than the remaining vowels, which are referred to as short
vowels. Mandarin speakers are often taught English by teachers who are native Chinese
speakers themselves, and the idea of long and short may not be communicated effectively.
When applied to singing, the distinction between long and short vowels is even more
difficult.

Contrasting lax with tense vowels is useful for teaching English vowels. It is
especially helpful for Mandarin students, who find it useful to classify the English vowels
into the two contrasting groups. Using the designations “lax and tense” rather than “long
and short” will provide useful information. For example, [i] and [ɪ], the pronunciation of
long [i] requires the lips to be rounder, or tense, while reducing the space in the mouth.

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30 James C. McKinney, *The Diagnosis & Correction of Vocal Faults*: a manual for teachers of singing and
The short [ɪ] requires the lip muscles to relax from tenseness to laxness, with a slightly open lower jaw.

Table 3.1 English Tense (Closed/Long) / Lax (Open/Short) Vowels

<table>
<thead>
<tr>
<th></th>
<th>Front Vowels</th>
<th>Example</th>
<th>Back Vowels</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>[i]-tense/close/long</td>
<td>beat</td>
<td>[u]-tense/close/long</td>
<td>two</td>
</tr>
<tr>
<td></td>
<td>[i]-lax/open/short</td>
<td>bit</td>
<td>[ʊ]-lax/open/short</td>
<td>books</td>
</tr>
<tr>
<td>Mid-High</td>
<td>[e]-tense/close/long</td>
<td>say</td>
<td>[o]-tense/close/long</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>[e]-lax/open/short</td>
<td>yes</td>
<td>[o]-lax/open/short</td>
<td>law</td>
</tr>
</tbody>
</table>

Central Vowels [ʌ]/[ə] and [ɜ]/[ə]

Two pairs of central vowels require tense and lax formation are [ʌ]/[ə] and [ɜ]/[ə]. English central vowels (Figure 3.1) cannot be found in the phonological system of other languages. Each pair of central vowels has nearly the same sound, but the tense vowel is in the stressed syllables, while the lax one is in the unstressed syllables. However, “the central vowels are those that are made with the middle of the tongue arched toward the palate and the second feature is the presence or absence of r coloring.”

In the first group of central vowels, [ʌ] and [ə], [ʌ] is pronounced like most neutral vowels sound in the English language; it occurs only in stressed syllables of strong word-types such as discussion, blunder, trouble, summer, and sudden. The production of [ʌ] is achieved by relaxed tongue arched slightly toward the middle. Many people, however, produce the sound with back tongue arching as for a back vowel rather than a central vowel. Many non-native English speakers produce a vowel close to [ɑ].

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31 Eisenson, Voice and Diction, 238.
instead of the [ʌ].\textsuperscript{32} This is caused by arching the tongue as if forming a back vowel. Singer should practice this vowel with vibrant vocal resonance to avoid dull tone quality.\textsuperscript{33}

Compared to the stressed syllable [ʌ], the schwa sound [ə] exists in unstressed English syllables. Note that any vowel letter such as \textit{a}, \textit{e}, \textit{i}, \textit{o}, and \textit{u} in an unstressed syllable is usually called schwa. The words include \textit{sofa}, \textit{nation}, \textit{alone}, \textit{above}, \textit{nickel}, or \textit{problem}. Schwa [ə] is probably the most frequently occurring vowel sound in English, and long phrases are likely to employ numerous schwa sounds. Also [ə] is a vowel used when prepositions, articles, conjunctions, and auxiliary verbs are unstressed in sentence context. Mandarin singers also have difficulty understanding the idea of unstressed vowels, as well as the schwa as a neutral sound in English.

The difference between [ʌ] and [ə] is defined as stressed and unstressed. Each has its own symbol in IPA, but the only difference in sound is the amount of intensity given to each vowel. Neither uses rounded lips, but the [ʌ] is usually a more open vowel sound, and schwa [ə] a more closed vowel sound with lax tongue.

The second group of central vowels, [ɜ] and [ɚ], are called the r-colored vowel sounds, which are produced by the tip of tongue retracted and suspended in the center of the mouth. The r-colored sound is the letter \textit{r} following a vowel in the same syllable, and it often loses its consonant quality and blends with the preceding vowel to become an r-colored vowel sound,\textsuperscript{34} such as with the combination of letters \textit{ir, ear, ur, or,} and \textit{er}. Both vowels are similar in sound, but are differentiated in terms of stress. [ɜ] is represented in the stressed syllables, e.g., \textit{early, curt, blur,} or \textit{Berlin}, while [ɚ] is used in unstressed

\textsuperscript{32} Eisenson, \textit{Voice and Diction}, 240.
\textsuperscript{33} Wall and Caldwell, \textit{Diction for singers}, 18.
\textsuperscript{34} Ibid., 18.
syllables and is often found at the end of words such as *sister, butter, confer*. To produce this sound, the tip of tongue remains down in contact with lower front teeth. Do not raise the tongue tip to initiate the vowel, or allow the tongue to curl backward. The lips should be rounded but not tense, and the jaw should remain stationary during execution.

**IPA and Pinyin System**

Chinese characters are represented in a pictographic or logographic written system, different from English’s alphabetic letters. Each Chinese character has its pronunciation and ideographic shape. To learn Chinese characters and pronunciations, one has to study and memorize each word character and pronunciation starting from a young age. In order to teach Mandarin Chinese to non-Mandarin speakers, the *Pinyin* system, which uses the Roman alphabet to spell the sounds of Chinese characters, is frequently employed. It is currently the most popular tool for encoding Mandarin Chinese sounds for language learners. Although it is not a real phonetic transcription system, nor is it a real orthographic system, it does carry out both functions in a partial sense.\(^35\)

The IPA system is a one-to-one correspondence between a symbol and a sound to provide phonetic information for pronunciation.\(^36\) IPA symbols are composed of one or more elements of two basic types, letters and diacritics. It could precisely represent the single letter [k], or with a letter plus diacritics [kʰ] showing Mandarin’s aspirated consonant, and [] is used to signal broad or phonetic transcription. However, the goal of IPA is to describe all human languages including Chinese, as shown in Table 3.2. To produce precise language pronunciation, study of IPA is valuable to singers because it

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provides a clear method of vowel formation and consonant articulation. In the section of the comparison of language differences between English and Mandarin, IPA phonetic transcriptions and Pinyin Romanization system will be used.

Table 3.2 Mandarin Chinese Pinyin and IPA Symbols in Consonants, Vowels, and Diphthongs

<table>
<thead>
<tr>
<th>Pinyin</th>
<th>IPA</th>
<th>Pinyin</th>
<th>IPA</th>
<th>Pinyin</th>
<th>IPA</th>
<th>Pinyin</th>
<th>IPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>[p]</td>
<td>l</td>
<td>[l]</td>
<td>z</td>
<td>[ts]</td>
<td>a</td>
<td>[a]</td>
</tr>
<tr>
<td>p</td>
<td>[pʰ]</td>
<td>g</td>
<td>[k]</td>
<td>c</td>
<td>[tsʰ]</td>
<td>o</td>
<td>[ɔ]</td>
</tr>
<tr>
<td>m</td>
<td>[m]</td>
<td>k</td>
<td>[kʰ]</td>
<td>s</td>
<td>[s]</td>
<td>e</td>
<td>[e]</td>
</tr>
<tr>
<td>f</td>
<td>[f]</td>
<td>h</td>
<td>[x]</td>
<td>zh</td>
<td>[tʂ]</td>
<td>i</td>
<td>[i]</td>
</tr>
<tr>
<td>d</td>
<td>[t]</td>
<td>j</td>
<td>[tɕ]</td>
<td>ch</td>
<td>[tʂʰ]</td>
<td>u</td>
<td>[u]</td>
</tr>
<tr>
<td>t</td>
<td>[tʰ]</td>
<td>q</td>
<td>[tɕʰ]</td>
<td>sh</td>
<td>[ʂ]</td>
<td>ü</td>
<td>[y]</td>
</tr>
<tr>
<td>n</td>
<td>[n]</td>
<td>x</td>
<td>[ɕ]</td>
<td>r</td>
<td>[ɻ]</td>
<td>w</td>
<td>[w]</td>
</tr>
</tbody>
</table>

**Vowel Production in Mandarin**

In contrast to English, Mandarin is a tone language, in which the phonetic system consists of five vowels, four diphthongs, twenty-five consonants, three glides, and four tones. The four tones are used to symbolize differences in word meaning. The term monosyllabic language is also used to refer to Mandarin because over ninety percent of words contain only one syllable.  

In the general phonetic system, Mandarin (Figure 3.3) has three high vowels, [i], [y], and [u], a mid vowel [ɔ], and a low vowel [a], while the English vowels [ɪ, e, ɛ, æ, ʊ, ɑ] do not exist in Mandarin. In addition, there are three glides (semi-vowels) [w], [j], and [ɥ] (Table 3.3), which are considered as vowels rather than consonants in Mandarin; they resemble vowel-like articulation, but function as consonants.

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37 Odinye, “Phonology of Mandarin Chinese,” 7.
39 Ibid., 21.
The Mandarin high vowels [i] and [u] are similar to those in English. Another high vowel [y] is also a mixed vowel, with an [i] tongue position and [u] lip position. Moreover, there are three glides considered high vowels in the Mandarin system, as shown in Table 3.3. Typically, Mandarin glides are followed by a low or mid vowel. Due to variations of Mandarin dialects, allophones\(^4\) often occur during speech. For example, [i] and [j] are the allophones of [i]; [y] and [ɥ] are the allophones of [y]; and [u] and [w] are the allophones of [u] (Table 3.4).

![Mandarin Vowel Chart](image)

**Figure 3.3 Mandarin Vowel Chart**

The mid vowel [ə] in Mandarin has two allophones [e] and [o], matching with the *pinyin* letters of *e* and *o*. Some Mandarin speakers produce a mid-vowel, which is actually closer to the schwa [ə], when *e* and *o* appear in diphthongs. For example, [kei]

---


*Allophone*: any of the phonetically similar sounds that are the realization of a single phoneme in varying contexts. For example, [pʰ] and [p] are the allophones of the phoneme [p]; the former occurs at the beginning of a stressed syllable (e.g. *pay* [pʰe]) and the other elsewhere (e.g. *sport* [spɔrt]).
sounds like [kəi], and [kou] like [kəu]. When e and o are at the end of a syllable, they become phonetically close to the lax vowels [ɛ] and [ɔ] respectively.

Table 3.3 Glides in Mandarin\(^ {41}\)

<table>
<thead>
<tr>
<th>Function of Glides in Mandarin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glides</td>
</tr>
<tr>
<td>[w]</td>
</tr>
<tr>
<td>[j]</td>
</tr>
<tr>
<td>[u]</td>
</tr>
</tbody>
</table>

Table 3.4 Mandarin High Vowels and Glides\(^ {42}\)

<table>
<thead>
<tr>
<th>Mandarin High Vowel and Glides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
</tr>
<tr>
<td>Unrounded</td>
</tr>
<tr>
<td>Vowel</td>
</tr>
<tr>
<td>Glide</td>
</tr>
</tbody>
</table>

The vowel [a] is the only Mandarin vowel at the low end of the vowel chart. However, phonetically speaking, the vowels [a], [ɑ] and [ɛ] are the allophones of [a].\(^ {43}\)

When [a] is followed by [u] or ng [ŋ], the [a] becomes [ɑ]; and when it is in between [j]/[u] and [n], the vowels becomes [ɛ] (Table 3.5). These sounds can be treated as single underlying phonemes because they are in complementary distribution (the chart indicates that, two superficially different elements are often the same linguistic unit). It is possible for more than two elements to be in complementary distribution with one another.

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\(^ {42}\) Ibid., 70.
\(^ {43}\) Ibid., 78.
Table 3.5 The Allophones of [a] in Mandarin

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Pinyin</th>
<th>IPA</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>[a]</td>
<td>yā</td>
<td>[ja]</td>
<td>‘duck 鴨’</td>
</tr>
<tr>
<td>[a] in diphthongs ending in [u]</td>
<td>māo</td>
<td>[mɑu]</td>
<td>‘cat 貓’</td>
</tr>
<tr>
<td>y[a] before [ŋ]</td>
<td>táŋ</td>
<td>[tʰaŋ]</td>
<td>‘candy 糖’</td>
</tr>
<tr>
<td>[ɛ] between [j] and [n]</td>
<td>yǎn</td>
<td>[jɛn]</td>
<td>‘eye 眼’</td>
</tr>
<tr>
<td>[ɛ] between [ɥ] and [n]</td>
<td>yuǎn</td>
<td>[ɥɛn]</td>
<td>‘far 遠’</td>
</tr>
</tbody>
</table>

Diphthong Production in Mandarin Chinese

There are four diphthongs in Mandarin Chinese. In contrast to English, Mandarin Chinese diphthongs can also be found in English, but only [ɔɪ] does not appear in Mandarin Chinese phonetic system.44 In Table 3.6, English diphthongs consist of a lax high vowel [i] or [ʊ] at the end, while the tense vowels [i] or [u] appear at the end of Mandarin diphthongs. There are two explanations for this. First, phonetically speaking, the lax vowels do not appear in Mandarin; nevertheless, the phonemes [i] and [u] are typically used to transcribe Mandarin diphthongs. Secondly, the central low vowel [aʊ] is an English diphthong, but the low back vowel [ɑʊ] is a Mandarin diphthong. Inversely, the [a]–[ɑ] difference in Mandarin (as it is in English) is allophonic rather than phonemic and there is only one low vowel phoneme in Mandarin.45

Table 3.6 Comparison of Diphthongs of English and Mandarin Chinese

<table>
<thead>
<tr>
<th>English Diphthongs</th>
<th>[ai]</th>
<th>[ei]</th>
<th>[aʊ]</th>
<th>[ʊ]</th>
<th>[ɔɪ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandarin Diphthongs</td>
<td>[ai]</td>
<td>[ei]</td>
<td>[aʊ]</td>
<td>[ou]</td>
<td></td>
</tr>
</tbody>
</table>

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45 Ibid., 68.
Tense and Lax Vowels in Mandarin Chinese

The tense and lax vowels may change the meaning of the word in English, whereas that is not the case in the Mandarin language. For example, the only difference between the words sheep and ship is the vowel sound [i] or [ɪ]. In comparison with English, Mandarin does not have a phonemic contrast between tense and lax vowels. In general, to Mandarin speakers, the mid front and back vowels, which are [e] and [o] when they occur in the middle of a syllable, are closer to [ɛ] and [ɔ] when they are spoken at the end of a syllable (see Table 3.7).

Table 3.7 Mandarin Mid and Back Vowel

<table>
<thead>
<tr>
<th>Mandarin Chinese Mid Front and Back Vowel</th>
<th>Vowel</th>
<th>Pinyin</th>
<th>IPA</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tense (non-syllable final)</td>
<td>[e]</td>
<td>Bēi</td>
<td>[pei]</td>
<td>‘cup’</td>
</tr>
<tr>
<td></td>
<td>[o]</td>
<td>Gǒu</td>
<td>[kou]</td>
<td>‘dog’</td>
</tr>
<tr>
<td>Lax (syllable final)</td>
<td>[ɛ]</td>
<td>Yě</td>
<td>[je]</td>
<td>‘also’</td>
</tr>
<tr>
<td></td>
<td>[ɔ]</td>
<td>Guǒ</td>
<td>[kwɔ]</td>
<td>‘fruit’</td>
</tr>
</tbody>
</table>

In Mandarin, the meaning of the word is not altered by the difference between a tense or lax vowel. [e] and [ɛ] are transcribed only to [e], while [o] and [ɔ] are transcribed only to [o]. In practicing Mandarin, [e] is used for any front unrounded mid vowel and [o] for any back rounded mid vowel, shown in Figure 3.1.

Consonants in English and Mandarin

In normal speech, consonants separate the vowels into intelligible language. When articulating consonants and vowels precisely, one can present clear meaning and establish effective communication. Jon Eisenson noticed that

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47 Ibid., 62.
In American English, the favored contact area is the upper gum ridge. At this point, by contact with the tongue tip, the sounds [t], [d], [l], and [n] are articulated. A fraction of an inch behind the gum ridge, articulatory placements are made for the sounds [s], [z], [ʃ], [ʒ], [dʒ], [tʃ], and one of the varieties of [r]. Because of the proximity of articulatory position of American-English sounds and those much like them in Spanish, French, Italian, and German, the tendency to carry over foreign-language speech habits is understandable.\textsuperscript{48}

English has 24 consonants and contrasting pairs of voiced and unvoiced consonants. Each pair can be placed at the same position and exhibit the same articulation, with voicing (voiced or unvoiced) being the only contrasting factor. On the other hand, the 25 consonants of Mandarin are mostly unvoiced consonants except [m, n, ŋ, l, w, j, u].\textsuperscript{49}

Compared with the characteristics of English consonants, Mandarin’s consonants are either aspirated or unaspirated. The aspirated sound is represented in IPA with a superscript [h] as in [pʰ]. Therefore, aspirated and unaspirated sounds are signified by two phonemes in Mandarin, different from English’s voiced and unvoiced. In this section, we will discuss the comparison of consonants in English and Mandarin to explore the understanding of similarities and differences in both languages. Furthermore, the study of consonants would help Mandarin students to articulate English consonants accurately and improve their pronunciation when they perform Western lyrics.

**Stopped Consonants**

The three pairs of stopped consonants, [p]/[b], [t]/[d], and [k]/[g], exist in both languages, but exhibit differences between English and Mandarin. Generally speaking, the consonants [b], [d], and [g] are voiced in English but are unvoiced in Mandarin. The

\textsuperscript{48} Eisenson, *Voice and Diction*, 263.

sounds represented by the letter b, d, g in pinyin are in fact unvoiced [p], [t], [k]. The sounds represented by the letter p, t, and k in pinyin are also unvoiced, but they are aspirated as [pʰ], [tʰ], [kʰ], in which an aspirated sound is denoted with a superscript [h].

The groups of Mandarin stopped consonants, [p] [t] [k] and [pʰ], [tʰ], [kʰ], are used to distinguish meaning of the word. There are no such functions in English. Mandarin’s stopped consonants are presented as unvoiced only, and Mandarin speakers tend to lose the voiced feature when speaking English.

Nasal Consonants

In Mandarin, there are three nasal consonants [m], [n], and [ŋ], which can also be found in English. Even though these three consonants appear in both languages, each is placed in a different position in a syllable. In English, the [m] and [n] sound can be found in the initial, medial, and final positions. And [ŋ] appears either medially or finally, followed by either a k as [ŋk] or a g as [ŋg]. Among the three nasal consonants in Mandarin, [m] only exists the initial position of a syllable. Both [n] and [ŋ] are allowed in the final position, while [n] can also occur in the initial and final positions of a syllable.

Fricative Consonants

There are nine fricative consonants [f, v, ð, θ, s, z, ʃ, ʒ, h] in English, which occur in five different places of articulation. “Eight of these fricatives are pairwise matching in voiceless/voiced labio-dental [f, v], inter-dental [ð, θ], alveolar [s, z], and palate-alveolar [ʃ, ʒ] places of articulation. The remaining [h] is a voiceless glottal fricative.”

---

fricative consonants appear in the initial, medial, or final position of a word. Some partial consonants must be produced by the friction of airflow against the articulators. The groups of alveolars [s, z] and palate-alveolars [ʃ, ʒ] involve more intensity and have a greater amount of intensity.\(^{53}\)

To produce distinctive fricative consonants in English, the speaker must use appropriate duration and a somewhat narrow mouth cavity. Each pair of fricative consonants has the same placement and manner of articulation, except [h] is restricted by the glottis. To produce any one of them, the mouth cavity is narrowed because airflow is restricted in order to sustain sufficient duration at the end of a word. Many choral singers ignore the final consonants or give insufficient duration when releasing the final consonant. As a result, the word meaning would be changed, and clarity of diction becomes muffled or sloppy. However, maintaining appropriate duration as well as a narrow mouth cavity makes fricative consonants distinct.

Only two of the English fricative consonants, [f], and [s], exist in Mandarin. The rest of fricative consonants [v, θ, θ, z, ʃ, ʒ], are typically new sounds to Mandarin speakers who are learning English. They usually replace familiar consonants for the so-called new sounds when speaking, e.g. [d] for [ð], [s] for [θ]. The challenges of pronunciation will be described in the section on problematic consonants. The pronunciation of [f] and [s] in Mandarin is similar to that in English, in contrast to [h], which is pronounced differently in both languages. In English, [h] is an aspirate sound, which it needs in order to be heard, but it should not be over-aspirated.\(^{54}\) On the other


\(^{54}\) Wall and Caldwell, *Diction for singers*, 31.
hand, [h] tends to be pronounced as a heavily aspirated velar fricative by Mandarin speakers, because it approximates a Chinese consonant.\footnote{Swan and Smith, Learner English, 312.}

Mandarin has five fricative consonants listed in Table 3.8, among which [f] and [s] are very much the same as those in English, and the three [x, ʂ, ɕ] only exist in the Mandarin language. The [x] is spelled as ʰ in pinyin, and is pronounced as [h] in English.\footnote{Lin, The Sounds of Chinese, 44.} As noted before, [x] is the same as the [h] sound in English, but it is a heavily aspirated sound in Mandarin. [ʂ] is an unvoiced retroflex fricative that is produced by keeping the tongue in the [ʃ] position with the tip of the tongue curled up toward the hard palate.\footnote{Ibid., 47.} The pronunciation of [ɕ] is like the fricative [ʃ] in English as in she [ʃi]. The speaker must hold the articulators/tongue position while intentionally spreading the lips to pronounce it correctly.\footnote{Ibid., 47.}

<table>
<thead>
<tr>
<th>Mandarin Fricative Consonants</th>
<th>Pinyin</th>
<th>IPA</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>[x] voiceless velar fricative</td>
<td>Hēi</td>
<td>[xēi]</td>
<td>‘fly 飛’</td>
</tr>
<tr>
<td>[ʂ] voiceless post-alveolar fricative</td>
<td>Shàng</td>
<td>[ʂɑŋ]</td>
<td>‘above 上’</td>
</tr>
<tr>
<td>[ɕ] voiceless alveolo-palatal fricative</td>
<td>Xī</td>
<td>[ɕi]</td>
<td>‘west 西’</td>
</tr>
<tr>
<td>[f] &amp; [s] as in English, but pronounced as voiceless aspirated</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Affricative Consonants**

The two affricative consonants, [dʒ, tʃ], in English are combination consonants. Each of them consists of stops and fricatives, which are categorized with unvoiced and voiced distinction. However, affricative consonants combine the articulation of two
consonant sounds into a single speech unit. Both affricative consonants occur initially, medially, or finally within a word, but their characteristics are different. [dʒ] is voiced and often represented by the letters g, j, and dg in spelling; and [tʃ] is unvoiced and frequently related to the letter ch in spelling. These consonants are not found in Mandarin.

In contrast to English, Mandarin has three pairs of unvoiced affricates [tsʰ/ts], [tʂʰ/tʂ], and [tɕʰ/tɕ]. All of them are associated with the group [ts], whether aspirated or unaspirated. These three pairs of affricate consonants are also related to three different places of articulation: dental, post-alveolar, and alveolo-palatal as listed in Table 3.9.

<table>
<thead>
<tr>
<th></th>
<th>Dental</th>
<th>Post-alveolar</th>
<th>Alveolo-palatal</th>
<th>Pinyin</th>
<th>IPA</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unspirited</td>
<td>[ts]</td>
<td></td>
<td>Zai</td>
<td>[tsai]</td>
<td>‘again 再’</td>
<td></td>
</tr>
<tr>
<td>Aspirated</td>
<td>[tsʰ]</td>
<td></td>
<td>Cài</td>
<td>[tsʰai]</td>
<td>‘vegetable 菜’</td>
<td></td>
</tr>
<tr>
<td>Unspirited</td>
<td>[tʂ]</td>
<td></td>
<td>Xi</td>
<td>[tʂan]</td>
<td>‘rise 漲’</td>
<td></td>
</tr>
<tr>
<td>Aspirated</td>
<td>[tʂʰ]</td>
<td></td>
<td>chén</td>
<td>[tʂʰəŋ]</td>
<td>‘Chang 陈’</td>
<td></td>
</tr>
<tr>
<td>Unspirited</td>
<td>[tɕ]</td>
<td></td>
<td>Jī</td>
<td>[tɕi]</td>
<td>‘chicken 雞’</td>
<td></td>
</tr>
<tr>
<td>Aspirated</td>
<td>[tɕʰ]</td>
<td></td>
<td>Qī</td>
<td>[tɕʰi]</td>
<td>‘seven 七’</td>
<td></td>
</tr>
</tbody>
</table>

The first pair of affricatives, [tsʰ] and [ts], is associated with the dental position, and spelled as z, c in pinyin. To produce the sound, “the tip of tongue is behind the front teeth in the former but behind the alveolar ridge in the latter.” The second pair of affricatives, [tʂʰ] and [tʂ], is described as a retroflex sound and spelled zh and ch in the pinyin system. Compared with the first pair of dental affricatives, this pair requires the tip

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58 Wall and Caldwell, *Diction for singers*, 36.
60 Ibid., 44, 46, 48.
of the tongue to be curled up and backward, with the underside of the tongue tip touching or approaching the post-alveolar region. The third pair, [tcʰ] and [tc], is spelled as j and q in Pinyin. They are only found in the initial position of a syllable, followed by the vowel [i], the glide [j] and [ɥ], and the vowel [y]. The pronunciation of each consonant is somewhat like the [dʒ] and [tʃ] in English. To more accurately produce both sounds, the lips have to intentionally spread when pronouncing [dʒ] as jeep, [dʒ] for which [tc] is unvoiced, and [tʃ] as in cheese, for which [tcʰ] is aspirated.

**Consonant [l] and [r]**

The consonants [l] and [r] are characterized by breath passing through the vocal tract with a greater constriction than that of vowels. Both can be positioned in the initial, the medial, or the end of a word. Regarding articulation, [l], along with other sounds [t], [d], [n], is produced by placing the tip of the tongue against the upper gum ridge in American English. The articulation of [r] in English is typically produced in the back of the mouth with tongue. These two consonants often appear in English, but they are difficult for non-native speakers to pronounce.

In contrast, the lateral consonant [l] in Mandarin language can only be placed in the initial position of a syllable. Mandarin’s consonant [ɻ] is similar to [r] in English. Although [ɻ] and [r] sound alike, there are quite a few differences between them. Generally speaking, English speakers pronounce [r] with lip-rounding and tongue tip

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63 Ibid., 47.
65 Eisenson, *Voice and Diction*, 263.
66 Ibid., 393.
curled back in a retroflex position. On the other hand, the pronunciation of [ɻ] uses no lip-rounding, and raise the tongue tip toward the back of the alveolar ridge.67

**Glides**

Glide consonants exist in both English and Mandarin languages; English has two, [j] and [w], and Mandarin has three [j], [w], and [u]. The glides are made by starting with the articulators in one position and immediately gliding to the following vowels such as [j] in *you*, and *yard*, [w] in *ways*. Even though those glides are vowel-like sound, their functions are like consonants. As shown in Table 3.4, [j] is initiated with the vowel [i], [w] with the vowel [u], and the Mandarin extra [u] starts with the rounded vowel [y]. All of them are always paired with a vowel. Both English glides, [w] and [j], can either occur as initial consonants, as part of initial consonant clusters, or at the beginning of a new syllable in the middle of a word.68 The Mandarin glides, however, are only found in the beginning or the middle of words.

The glide, [j] is formed with the [i] tongue position as vowel-like in quality because it is an unobstructed and continuant sound. It is spelled with the single letter *y* when in the initial position of a syllable, and by the letters *io, ie*, and *ia* in medial positions as in *senior, yield*, and *genial*. To enunciate [j], the tongue glides forward and the lips are somewhat retracted, as though for a smile. The glide, [w] is initiated with the vowel [u]; it exists in English only when it precedes a vowel. According to Kathryn Labouff’s notes, to avoid producing two-syllable words, singers must avoid lazy lips and thick tongues, which produce dull and shapeless glides.69 For example, *walk* and *wide*

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68 LaBouff, *Singing and Communicating in English*, 100.
69 Ibid., 103.
start with [w] followed by a vowel, but Mandarin singers often do not move swiftly through the first vowel to sing the second vowel. They must articulate the glides quickly and move directly to the vowel for clarity. This is common among English singers also, but it is a particular challenge for Mandarin speakers.

**Word Stress in English vs. Syllabic Stress in Mandarin**

Word stress in English is distinct from syllabic stress in Mandarin but they are equally important. In English the importance of a stressed syllable over an unstressed one may be due to several factors. “There may include (a) loudness (stressed syllables are louder than unstressed syllables), (b) duration (stressed syllables are longer than unstressed syllables), and (c) pitch (stressed syllables are produced with higher pitch than unstressed syllables).”\(^70\) However, accurate syllabic stress is imperative for correct pronunciation and understandable words. Not all syllables in a word carry the same prominence or importance. Changing some of the sound, including pitch, loudness, timing, and sometimes the vowel, can produce the appropriate word stress. Inappropriate stress makes a word difficult to understand. That is why non-native speakers confuse native speakers when they use the wrong stress while speaking or singing.

Rhythmic variety in English is *stress-timed*, meaning that the timing of utterances is based on the number of stressed syllables, which tend to be evenly spaced, with the unstressed syllables squeezed in between.\(^71\) The important marker of stress in English is length, but stress is also accompanied by greater loudness or clarity on the stressed syllable as well as a higher pitch. On the other hand, unstressed syllables are very short.

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\(^{71}\) Ibid., 22.
and unclear and are often reduced to the vowel to /ə/ (schwa) or ih [i]. The unstressed form of [u] may become [œ] in unstressed syllables such as in usual or closure. Generally, English word stress relies on duration, volume, and pitch to convey meaning.

Mandarin Chinese is syllable-timed — determined by the rhythmic beat in the recurrences of syllables, not stresses. Learning English syllabic stress, with its strong and weak sounds, is a significant challenge for non-native speakers. In Mandarin Chinese, a monosyllabic language, each character has one syllable. Most of the characters end with a vowel such as ta (meaning she, he or it), wo (I), and ma (mother), except one that ends with /n/ (lin) and /g/ (Zhang). Typically, words display full vowels in every syllable, and each syllable gets approximately the same amount of time. These characteristics may lend the speech a staccato-like rhythm and negatively affect the clarity of the English.

Yen-Hwei Lin states about “stressed” as follows.

Each syllable in a word has a full tone, as in most in standard Chinese (SC), it is not clear which syllable. This is a situation very different from English, because English speakers are readily able to identify which syllable is stressed in a word and yet SC speakers’ judgments of SC words without a neutral tone vary and are often inconsistent.

In light of this, it is not surprising that word stress issues are challenging for most Mandarin speakers as they learn English. They often fail to sufficiently differentiate stressed and unstressed vowels but produce full vowels in unstressed syllables. The use of full vowels may also be influenced by spelling. Thus, non-native speakers who do not correctly produce unstressed vowels may pronounce a word such as ‘campus’ [kæmpəs]

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72 Wall and Caldwell, Diction for singers, 15.
73 Ibid., 15.
74 Danling Fu, An Island of English: Teaching ESL in Chinatown. (Portsmouth, NH: Heinemann, 2003), 140.
as [kæmpus]. The phenomenon of unstressed syllables is an important characteristic of English, and non-native speakers must carefully pronounce the unstressed vowels accurately. Otherwise, the words sound over-articulated and become difficult to understand.

**Intonation/Inflection in English and Tone in Mandarin**

In *American Diction for Singers*, Geoffrey G. Forward and Elisabeth Howard stated that inflections and intonation are the pitch/resonance changes in the voice. The term inflection refers to a change in the pitch/resonance of a single syllable or word, and intonation refers to the pattern of pitch/resonance changes over a whole phrase or sentence. Generally speaking, intonation and tone language are produced differently in English and Mandarin Chinese. The speaker uses voiced tones to help the listener get the sense or meaning of the sentence. The meaning of a sentence may depend on its intonation pattern. In contrast to intonation, tone language depends on the pitch levels of the syllables. The pitch for words, even those that have the same initial vowel sounds, makes a difference in meaning.

In English, intonation is related to sentence stress and conveys the speaker’s attitude about what is being said. It is communicated in the rise and fall of the speaking voice. The so-called “thought groups” are defined as large groupings of words that are determined by the meaning of the sentence. Each thought group has its own tone pattern, and group of words that hold together to express a meaning. The falling of the voice is often used for declarative sentences, requests or commands; the rising of the voice is typically for questions. Intonation, like melody language, plays an important role in

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delivering meaning. In order to speak English well, English intonation and inflection must follow the rhythm of stressed/unstressed syllables, and it affects the interpretation of the sentence, including the meaning and emotion. Singers often practice speaking the text before singing. It is important to note that intonation does not fit the familiar grammatical rules for Mandarin speakers. Moreover, non-native speakers have to avoid giving equal stress to every syllable.

Mandarin Chinese is a tone language (syllable-timed language) with four different tones (see Table 3.10), which show that the pitch contour over a syllable can distinguish word meaning. The sounds of these four tones are: (1) high level (-), (2) high rising (/), (3) low ring (v) or low dipping, and (4) high falling to low (\). The analysis of tone language differs from English because the tone interprets the meaning of the word. English normally makes use of consonants and vowels to form distinctive words, e.g., bad and bed, in which bad [bæd] and bed [bed] have different vowels, [æ] vs. [ɛ], and different meanings. On the other hand, in Mandarin Chinese ba follows the four tones, demonstrated in diverse meaning as [bā] ‘eight’, [bá] ‘pull out’, [bǎ] ‘grasp’, [bà] ‘father.’ Each of the four tones is given equal stress and sounds as full tone when spoken.

<table>
<thead>
<tr>
<th>C+V</th>
<th>Tone/Pitch Pattern</th>
<th>Tone Symbol</th>
<th>Tone Number</th>
<th>Pinyin</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ma</td>
<td>High level</td>
<td>_</td>
<td>Tone 1</td>
<td>mā</td>
<td>‘mother’</td>
</tr>
<tr>
<td>ma</td>
<td>High rising</td>
<td>/</td>
<td>Tone 2</td>
<td>mà</td>
<td>‘hemp’</td>
</tr>
<tr>
<td>ma</td>
<td>Low falling-rising</td>
<td>v</td>
<td>Tone 3</td>
<td>mà</td>
<td>‘horse’</td>
</tr>
<tr>
<td>ma</td>
<td>High falling</td>
<td>\</td>
<td>Tone 4</td>
<td>mà</td>
<td>‘to scold’</td>
</tr>
</tbody>
</table>

C = consonant  V= vowel

Table 3.10 Four Tones in Mandarin

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Mandarin Chinese is also referred to as a monosyllabic language. Almost all Chinese words contain only one syllable, in contrast to the great number of polysyllabic words in English. In Mandarin Chinese, the syllable is a unit for carrying tone and stress. For example, in English, the word *system* [ˈsɪstəm] has two syllables, *sys* and *tem*, with the first syllable as the stressed syllable; a Chinese word, like *xué-xiào* [ɕɥe²ɕjaʊ⁴] ‘school,’ has two syllables and two tones—a high rising tone (tone 2) on the first syllable *xué* and a high falling tone (tone 4) on the second syllable *xiào*.⁷⁸

In Mandarin, the four tones distinguish the meaning of words that have the same pronunciation, but generally speaking, there is minimal word stress compared to English. Because the speech pattern of Mandarin is monosyllabic, native speakers have difficulty producing the stream of speech that is common in English, and the inflection of English is also particularly challenging to accomplish.

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CHAPTER 4
SPECIAL PHONIC CHALLENGES FOR MANDARIN SINGERS

There are more vowels in English than in other languages. Compared with English’s seventeen vowels, Mandarin has only six vowels in its phonetic system. As a result, most Mandarin students have difficulty in producing distinct English vowels. Undoubtedly, major challenges for Mandarin singers are unavoidable. For instance, (1) there are English vowels and consonants that do not exist in Mandarin such as [ɪ], [ɛ], [æ], [ʌ], [ɔ], [ɜ] and [ɚ], (2) some vowel formations in Mandarin do not appear in English, such as raising the tip of the tongue, (3) there are no tense/lax vowel pairings in Mandarin, and (4) English vowels are produced through distinct positions of the tongue and use of the articulators that do not correspond to Mandarin.

The following discussion is an evaluation of specific problematic issues for Mandarin Chinese singers in the performance of English vowels. Table 4.1 contains data from three hundred voice teachers from the Great Lakes Region of the National Association of Teacher of Singing (NATS). In 2012 these teachers described their perceptions of the prevalence of English pronunciation difficulties among Chinese, Japanese, and Korean (CJK) students.79 Using the level of frequency from high to low, I will address problematic issues for Mandarin singers related to the pronunciation of English vowels.

Table 4.1 Most Difficult Vowels for CJK Students

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Frequency</th>
<th>Vowel</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>[æ]</td>
<td>10</td>
<td>[o]</td>
<td>4</td>
</tr>
<tr>
<td>[ɛ]</td>
<td>9</td>
<td>Diphthongs</td>
<td>4</td>
</tr>
<tr>
<td>[i]</td>
<td>9</td>
<td>[i]</td>
<td>3</td>
</tr>
<tr>
<td>[a]</td>
<td>7</td>
<td>[ʌ]</td>
<td>2</td>
</tr>
<tr>
<td>[e]</td>
<td>6</td>
<td>[ɔ]</td>
<td>2</td>
</tr>
<tr>
<td>[ʊ]</td>
<td>5</td>
<td>[ə]</td>
<td>1</td>
</tr>
<tr>
<td>[ɔ]</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**English Lax Vowels [ɪ], [ɛ], [æ], [ʌ], [ʊ], [a], [o], and [ə] Missing in Mandarin**

The traditional Italian vowels, [ɪ], [ɛ], [o], [u], [a], exist in both English and Mandarin. As mentioned before, most English vowels and consonants do not exist in Mandarin phonetic system. The English lax vowels [ɪ], [ɛ], [æ], [ʌ], [ʊ], [a], and [ə] are most challenging and Mandarin speakers have difficulty distinguishing and producing them. The Mandarin speaker often has difficulty using the articulators (tongue, jaw, and lips) to differentiate between the five front and back vowels, as well as the paired vowels of English. Learning all of the English vowels would help singers sing the lyrics more freely, clarify their diction, and create appropriately resonant vowels. Furthermore, learning to modify vowels could also facilitate beauty across the vocal range.

**Vowel [ɛ] vs. [æ]**

From the data in Table 4.1, the English pronunciation of [æ] and [ɛ] are the most difficult for CJK students. They do not exist in Mandarin as lax vowels, and the language does not call for them in the same sound and position as in English. The vowel [æ] can
only found the in English. It is described as a long vowel sound in a stressed syllable.\textsuperscript{80}

The key issue is that most Mandarin students fail to lower the tongue and jaw enough to produce the \([\text{æ}]\) sound. Singers should let the tip of the tongue rest against the bottom of the teeth to pronounce \([\text{æ}]\) so that it is more open than \([\varepsilon]\). The lip position should be slightly spread for \([\varepsilon]\), but relaxed and not spread for \([\text{æ}]\). For vocalization in the high range, singers should modify \([\text{æ}]\) to \([\varepsilon]\). However, with the female voice, open vowel \([\text{æ}]\) is a preferred vowel as the pitch rises. Further comparison of the vowels \([\varepsilon]\) and \([\text{æ}]\) can be found in Table 4.2.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|}
\hline
Vowel & Action & Examples \\
& Tongue & Lips & Jaw \\
\hline
\([\varepsilon]\) & • Tip in contact with lower front teeth & Relaxed, slightly spread & Lower than for \([i]\) or \([\text{ei}]\) diphthong & men, wed, friend \\
& • Front of tongue less arched toward soft palate & & & \\
& • Lowest of lip vowels to still have contact with upper molars & & & \\
\hline
\([\text{æ}]\) & • Tip in contact with lower front teeth & Relaxed no spread & More open than for \([\varepsilon]\) & man, sad, happy, glad \\
& • Front arched less than for \([\varepsilon]\) & & & \\
& • Sides of tongue aligned with lower molars & & & \\
& • First vowel to be in contact with lower teeth & & & \\
\hline
\end{tabular}
\caption{Comparison of the Vowels of \([\varepsilon]\) and \([\text{æ}]\)\textsuperscript{81}}
\end{table}

\textsuperscript{80} Kathryn LaBouff, \textit{Singing and Communicating in English}: a singers’ guide to English diction (New York: Oxford University Press, 2008), 53.

\textsuperscript{81} Kathryn LaBouff, \textit{Singing and Communicating in English}, 51, 54
Vowel [ɪ] vs. [i]

The front lax vowel [i] and tense vowel [ɪ] typically confuse Mandarin speakers who are learning English. The confusion arises because they have difficulty differentiating between these two vowels. This difficulty often results in the singer producing the vowels identically, using neither the tense nor the lax vowel, but a vowel between the two.\(^8\) In English, tense and lax vowels change the meaning of the word, such as *sheep* and *ship*. This situation does not exist in Chinese pronunciation, which does not have tense/lax vowel distinction. The only way to change Mandarin’s meaning is by the pitches or tones.

To resolve this problematic issue of [i] and [ɪ], singers should practice speaking phrases that target these two vowels, particularly in alternation. Comparison of these two vowels in different articulators is listed in Table 4.3. Through the *passaggio*, or in the high register, modifying [i] to [y] and [ɪ] to mixed German and French vowel [Y] is a great approach for vocal ease.\(^8\)

Vowel [u] vs. [ʊ]

The vowel [u] is much easier for Mandarin speakers. Compared with [u], the lax vowel [ʊ] is a very specific vowel in English—short in duration. In English, [ʊ] could appear in stressed position as in *foot, pull, wood*; and it may be substituted for [ə], e.g., *wonderful, beautiful* in the unstressed position. Most Mandarin speakers commonly distort or substitute it with [u] as they learn English. If they are not aware of the different position between [u] and [ʊ] such as *pool* and *pull*, they will make these two vowels


\(^8\) LaBouff, *Singing and Communicating in English*, 44, 48.
sound the same, confusing English speakers as to what they wish to convey. To
distinguish between [u] and [ʊ] in Table 4.4, one has to slightly open/drop from tense
vowel [u], with the lips rounded but less firm than [ʊ]. When singing, the vowel [ʊ] is
often difficult for the singer. It is rarely vocalized in Mandarin, and may therefore be
distorted, or substituted with [u].

Table 4.3 Comparison Vowels of [i] and [ɪ] in Different Articulators and Examples

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Action</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tongue</td>
<td>Lips</td>
</tr>
<tr>
<td>[i]</td>
<td>• Tip on lower front teeth</td>
<td>Lips horizontal</td>
</tr>
<tr>
<td></td>
<td>• Front of tongue arched forward toward hard palate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sides of tongue touching upper molars</td>
<td></td>
</tr>
<tr>
<td>[ɪ]</td>
<td>• Tip behind lower front teeth</td>
<td>Horizontal</td>
</tr>
<tr>
<td></td>
<td>• Front arched slightly less toward hard palate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sides touching upper molars</td>
<td>More open</td>
</tr>
</tbody>
</table>

Vowel [o] vs. [ɔ]

The vowel [o] and [ɔ] are moderately difficult for Mandarin speakers. The
traditional pure vowel [o] appears in German, Italian, and French; it exists in Mandarin
Chinese as well. The vowel [o] is not difficult to pronounce, though occasionally
Mandarin speakers would pronounce as [ɔʊ] or [oə] instead of the [o] sound. On the other
hand, the lax vowel [ɔ] is similar to [o], but the jaw has to drop slightly lower than [o]
(Table 4.5). During pronunciation, singers should not change the lip shape, and should

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84 LaBouff, Singing and Communicating in English, 44, 47, 49.
substitute [ɑ] for [ɔ], e.g., water [wɔtə] becomes [watə]. To maintain vocal freedom, the vowel [ɔ] may be modified to [o] when singing melismatic passages, or throughout the *passaggio*. There can be a difference in vowel modification from male to female voices. Females prefer more open vowels as they ascend.

Table 4.4 Comparison Vowels of [u] and [ʊ] in Different Articulators and Examples

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Action</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>[u]</td>
<td>• Tip touching lower front teeth</td>
<td>Round,</td>
</tr>
<tr>
<td></td>
<td>• Back of tongue arched toward soft palate</td>
<td>smallest</td>
</tr>
<tr>
<td></td>
<td>• Sides of tongue in contact with upper molars</td>
<td>circular</td>
</tr>
<tr>
<td></td>
<td></td>
<td>shape,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mouth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>opening</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and jaw</td>
</tr>
<tr>
<td></td>
<td></td>
<td>very</td>
</tr>
<tr>
<td></td>
<td></td>
<td>small</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vertically</td>
</tr>
<tr>
<td></td>
<td></td>
<td>book,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pool,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fool</td>
</tr>
<tr>
<td>[ʊ]</td>
<td>• Tip behind lower front teeth</td>
<td>Rounded</td>
</tr>
<tr>
<td></td>
<td>• Back of tongue arched toward soft palate but lower than for [u]</td>
<td>but less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>firm than</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[u]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Slightly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dropped</td>
</tr>
<tr>
<td></td>
<td></td>
<td>from [u]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>position</td>
</tr>
<tr>
<td></td>
<td></td>
<td>book,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pull,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>full</td>
</tr>
</tbody>
</table>

**Diphthongs**

The diphthong is composed of two consecutive vowels in the same syllable. In English there are five diphthongs, [aɪ], [eɪ], [ɔɪ], [ɑɪ], and [ʊə]. Typically, English diphthongs end in a lax high vowel [ɨ] or [ʊ]. In the pronunciation of diphthongs, the tongue moves from one position to another, and the first vowel is considered to be longer or more sustained than the second vowel. Four of these diphthongs are found in Mandarin;

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85 LaBouff, *Singing and Communicating in English*, 68.
86 Ibid.
87 Ibid., 60, 64.
[ɔɪ] is the exception. Compared with the English diphthongs like [ou], [ai], [ei], Mandarin compound finals tend to be pronounced with quicker and smaller lip and tongue movements.⁸⁸ As a result, learners “make these sounds too short, with not enough distinction between the two counterparts.”⁹⁰ Therefore, they might pronounce cake as [kek] rather than [keɪk], sound [sand] rather than [sænd]. To resolve this problem, Mandarin speakers must move the tongue position smoothly from the first vowel to the second, and sustain the first vowel longer. They must be careful not to shorten the diphthongs or replace them with English monophthongs.

Table 4.5 Comparison Vowels of [o] and [ɔ] in Different Articulators and Examples⁹⁰

<table>
<thead>
<tr>
<th>Vowel</th>
<th>Action</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tongue</td>
<td></td>
</tr>
<tr>
<td>[o]</td>
<td>• Tip on contact with lower front teeth&lt;br&gt;• Back arched halfway between [ʊ] and [ɔ]</td>
<td>Rounded, with larger circle than for [ʊ]</td>
</tr>
<tr>
<td>[ɔ]</td>
<td>• Tip in contact with lower front teeth&lt;br&gt;• Back arch slightly lower than for [o]&lt;br&gt;• Lowest arch of all the lip vowels&lt;br&gt;• Sides of tongue in contact with lower molars</td>
<td>Protruded forward, lip far apart, narrowed at corners</td>
</tr>
</tbody>
</table>

⁹⁰ Ibid.
⁹⁰ LaBouff, Singing and Communicating in English, 65, 68
Replacing English Vowels with Mandarin Vowels

It is clear that distinct pronunciation of English vowels is challenging for Mandarin speakers. They often replace English vowels with Mandarin vowels, resulting in a lack of clarity. At Hong-Kong University, some of the Mandarin speakers use Chinese sounds to replace the English sounds, for example *ruler* [ruə] often becomes [ruɛ], *car* [kɑ] often becomes [kar].\(^9\) The reason is related to the Mandarin speech patterns that employ a brighter sound, a narrow space, and some nasal resonance, along with the fact that some English sounds do not exist in Mandarin. At the end of the word, the vowel quality may often be choppy or disconnected. When applied to singing, these habits produce poor resonance, a lack of unified vowels, and muffled diction. Often the vowel quality will be choppy or disconnected with smooth speech.

Problematic English Consonants for Mandarin Chinese Singers

One of the distinctive characteristics of English is the pairing of consonants, voiced or unvoiced, in various combinations. Mandarin consonants, on the other hand, are distinguished by aspirated and unaspirated sounds which are not found in the English phonetic system. Because of this, Mandarin speakers often neglect the differences between voiced and unvoiced sounds, and English speakers typically overlook the aspirated feature; they are not aware of the difference.

In this section, I will address the specific issues of English consonants for Mandarin Chinese singers. The data listed in Table 4.6 is a summary of the perceptions of three hundred voice teacher from the Great Lakes Region of the National Association of Teacher (NATS) in 2012 concerning the difficulties of English pronunciation among

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Chinese, Japanese, and Korean (CJK) students.\textsuperscript{92} I have selected some particular challenges related to consonant articulation, to help Mandarin singers resolve the differences between English and Chinese.

Table 4.6 Most Difficult Consonants for CJK Students

<table>
<thead>
<tr>
<th>Consonants</th>
<th>Frequency</th>
<th>Consonants</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>[l]</td>
<td>28</td>
<td>[g]</td>
<td>3</td>
</tr>
<tr>
<td>[ɾ]</td>
<td>25</td>
<td>[ʁ]</td>
<td>2</td>
</tr>
<tr>
<td>[ð]</td>
<td>16</td>
<td>[m]</td>
<td>2</td>
</tr>
<tr>
<td>[θ]</td>
<td>16</td>
<td>[n]</td>
<td>2</td>
</tr>
<tr>
<td>[v]</td>
<td>8</td>
<td>[b]</td>
<td>2</td>
</tr>
<tr>
<td>[ʣ]</td>
<td>8</td>
<td>[d]</td>
<td>2</td>
</tr>
<tr>
<td>[ʒ]</td>
<td>8</td>
<td>[st]</td>
<td>2</td>
</tr>
<tr>
<td>[w]</td>
<td>7</td>
<td>[k]</td>
<td>2</td>
</tr>
<tr>
<td>[f]</td>
<td>5</td>
<td>[p]</td>
<td>1</td>
</tr>
<tr>
<td>[ʃ]</td>
<td>4</td>
<td>[h]</td>
<td>1</td>
</tr>
<tr>
<td>[j]</td>
<td>3</td>
<td>[ŋ]</td>
<td>1</td>
</tr>
<tr>
<td>[ʧ]</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textit{Lateral Consonant} [l]: [l] vs. [n], [l] vs. [w]

For a Mandarin native speaker, the [l] sound is the most difficult to pronounce. As the data in Table 4.6 shows, the [l] is often omitted or easily substituted by other consonants. Generally speaking, the consonant [l] appears in English and in Mandarin, but its position in a word can be different between the two languages. In English, the position of [l] could be found in the initial, middle and final position of a syllable such as \textit{like}, \textit{yellow}, and \textit{school}. On the other hand, the position of [l] in Mandarin only exists at the beginning of a syllable. As a result, the middle and the final position of [l] sound in

\textsuperscript{92} Lim, ”The Perceptions of Voice Teachers Regarding English Pronunciation”, 37.
English are quite challenging for a native Mandarin speaker. To produce the [l] sound, the singer should touch the blade of the tongue lightly to the upper gum ridge, so that the [l] can be felt well forward in the mouth.

Mandarin speakers use a variety of substitutions for [l] at the beginning and final word positions. They would substitute [l] with [n], or vice versa, at the beginning of a word such as light and night. When the tongue does not contact the upper gum ridge, the word light and night will sound similar and cannot be distinguished. They often avoid articulating both consonants [l] and [n], turning them into a very short sound as found in Mandarin, and they tend to speak both consonants indistinctly.

Native Mandarin speakers often substitute [w] for [l], when [l] is at the end of a word such as school, feel, and legal. Final consonants do not exist in the Mandarin language except [n] and [ŋ]. Mandarin speakers may, as a result, omit the final [l], or round the mouth, rather than articulating the [l] against the upper gum ridge.

Consonant [r]

When Mandarin Chinese speakers pronounce the [r] sound, they often pronounce it with a tense tongue that is arched in the back. Similar to the [l] sound, the English consonant [r] can be placed at the initial, middle, or final position of a syllable, e.g., right, morning, and fair. The beginning and ending positions cause the most difficulties.

English learners who are native Mandarin speakers often substitute [l] or [w] for [r] at the initial position. They employ the flat tongue position rather than using rounded lips, with the sides of the tongue lightly touching the molars.
The consonant [r] is produced by a lingua-palatal gliding movement of the lips and tongue. Mandarin speakers have to round the lips in an [o] position while the tongue glides downward to produce the [r] in words such as red, remember, or righteous.

**Consonant [θ] vs. [ð]**

Pronouncing the English consonant [θ] and [ð] is a difficult task for the Mandarin speakers, since these consonants do not exist in the Mandarin language. Articulating [θ] and [ð] accurately in English conversation and singing is challenging work for non-native English speakers. Consistent practice of the mechanics of pronunciation is necessary. English words such as the, those, that, them, these, and there, etc., are quite common in musical settings of English texts. Mandarin speakers often substitute [d] for [ð]. While the [θ] sound is an unvoiced sound, Mandarin speakers often use some of the same substitutions for both [θ] and [ð]. For instance, Mandarin speakers often substitute [d] for [θ] in words such as thanks, theme, and thought. When [θ] is in the final position, [z] or [s] may be substituted for [θ] in words such as month, youthful, with, earth, health, and death.

**Consonant [v] vs. [f], [v] vs. [w]**

The voiced [v] sound does not exist in the Mandarin language. In English, [v] and [f] are voiced and unvoiced respectively, while in Mandarin, [f] is an aspirated sound. [v] is a voiced consonant while [f] is unvoiced, requiring a different use of breath pressure in English. For Mandarin speakers, the words fan and van may be pronounced similarly because the consonants are articulated very quickly, with no vibration of the [v]. Distinction between [v] and [f], [v] produces voiced sound and requires less breath.

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93 LaBouff, *Singing and Communicating in English*, 106.
pressure than the [f]. Often, replacing [f] for [v] occurs if a Mandarin speaker does not pay close attention. Regarding final consonants, omitting them or dropping off the final sound is common; Mandarin speakers are likely to change [v] to [f], or leave the sound off entirely. The result is a lack of precision and clarity. For instance, in the word *receive*, the final consonant should be released in [v] sound, but Mandarin speakers would change it to [f] or omit it at the end of the word.

Regarding the [v] sound, some non-native speakers may have difficulty and are confused by the [v] and [w], such as *ways* [warz] and *vase* [vais]. Both [v] and [w] are vocalized but there is no obvious stream of breath for [w]. To pronounce [v], the upper teeth are placed against the lower lip, while [w] is produced by rounding the lips for [u]. To distinguish between *ways* [warz] and *vase* [vais], Mandarin speakers must learn to articulate with rounded lips for [w], but use the teeth against the lower lip for [v], then pronounce the final [z] or [s] differently at the end of the word. These small differences in articulation are complicated, but necessary for clear understanding of words.

*Consonant [dʒ] vs [tʃ]*

Mandarin’s consonants are characterized by aspirated and unaspirated sounds. The most problematic issue in English then, is articulating voiced consonants. As seen in Table 4.6, [dʒ] is particularly challenging. Although the consonants, [dʒ] and [tʃ], are considered somewhat equivalent in Mandarin and English, the voiced consonant in English is difficult to distinguish from the unaspirated consonant in Mandarin. The result is that Mandarin speakers have difficulty pronouncing [dʒ] accurately, as in *Jane, jam, joke, and jump.*
Mandarin’s phonetic structure only contains a consonant plus a vowel for each word, without a final consonant. For example, in the words *badge, singe, huge, liege,* Mandarin speakers often find the final [dʒ] difficult to pronounce. Moreover, the pronunciation of [dʒ] is also problematic for non-native English speakers from other countries. In his book “*Voice and Diction,***” Joe Eisenson mentioned that “many American and English speakers tend to use unvoiced [dʒ] when the blend occurs in the final positions. French, Spanish, and German speakers may have difficulty with the voiced affricate because the sound does not occur in their native language.”94 The data in the “Frequency” column in Table 4.6 shows that [dʒ] is more difficult than [tʃ] for Mandarin speakers.

**Nasal Consonant [m], [n], and [ŋ]**

The three nasal consonants in English, [m], [n], and [ŋ], are distinguished by a different tongue-mouth contact position, and the vibration of breath passing through to the nasal-cavity reinforcement. The problematic issue of nasal sounds appears routinely in Mandarin speaking and singing.

In Mandarin, the syllables or words never end with consonants, except for [n] or [ŋ]. The [m] sound is frequently found in initial, middle, and final positions in English. When pronouncing the [m] nasal, Mandarin speakers would not automatically close [m] with the lips, and they omit it at the end of the word, as in the words *form, game,* and *climb.* When producing the [n] sound in English, the tongue should be elevated and the entire tongue tip should be in contact with the upper gum (alveolar) ridge, while the soft

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94 Eisenson, *Voice and Diction,* 362.
palate is relaxed.\textsuperscript{95} Contrarily, in Mandarin, the [n] is produced with the entire tongue in contact with the bottom gum ridge. In English, the [n] can be placed in initial, middle and final positions as *knee, noise, dinner, connect, turn*, and *sin*. Mandarin speakers have to learn how to place the tongue tip in contact with the upper gum ridge. This is important because the [n] occurs so frequently in English, especially in the initial and final position of many words. Finally, the [ŋ] sound exists at the end position of a word in Mandarin, and also occurs in medial and final position in English. However, [ŋ] is easily confused with [n] by Mandarin speakers. They seem to be similar, but [ŋ] is “produced by elevating the back of the tongue so that it makes contact with the lowered soft palate (velum) while the vocal folds vibrate”\textsuperscript{96} Generally speaking, [ŋ] is followed by [g] or [k] and pronounced either [ŋg] or [ŋk] in the same syllable, as in the words *anger, tingle, sank*, and *Frank*. In some cases, Mandarin speakers would omit the [ŋ] sound to produce *Frak* instead of *Frank*, or omit either [g] or [k] sound at the end to produce *Fran* instead of *Frank*.

In English the three nasal consonants [m], [n], and [ŋ] are articulated differently by tongue-mouth contact position shown in Table 4.7, and each of the three consonants has its own characteristics when located in different positions of a word. If Mandarin speakers are able to articulate them distinctly, their diction will be much more intelligible and communicative when they sing.

In Mandarin, final stopped consonants, voiced our unvoiced, do not exist at the end of words. In English there are three pairs of stopped consonants: [t]/[d] which are articulated by the tongue tip against the gum ridge, [p]/[b], which are bilabial, and [k]/[g],

\textsuperscript{95} Eisenson, *Voice and Diction*, 371.
\textsuperscript{96} Ibid., 376.
which are velar stops. All of the stopped consonants can be in the initial, middle, and final positions of a word. For instance, in the words *break* and *bread*, the final consonants [k] and [d] are articulated differently, and contribute to the difference in meaning of the words. Most of time, Mandarin speakers will release the unvoiced/voiceless stops [p], [t], and [k] clearly; it becomes even easier when they are the final consonant of the word. However, the voiced stops [b], [d], and [g] are often substituted or omitted.

### Table 4.7 Comparison Consonant [m], [n], and [ŋ]

<table>
<thead>
<tr>
<th>Consonant</th>
<th>Action</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>[m]</td>
<td>Flat in [a] position</td>
<td>Together</td>
</tr>
<tr>
<td>[n]</td>
<td>Tip against gum ridge</td>
<td>Released</td>
</tr>
<tr>
<td>[ŋ]</td>
<td>Middle of tongue raised toward hard palate</td>
<td>In position of following vowel</td>
</tr>
</tbody>
</table>

#### Omission of Final Stop in Voiced or Unvoiced Consonants

When final consonants are poorly articulated, the meaning of a word may be changed, and the speaker/singer is difficult to understand. In order to release consonants distinctly, some Mandarin speakers add an extra schwa [ə] at the end of a word, e.g., hard [hɑrdə] instead of [hard]. This habit may affect the meaning of a word, and may make the

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speech unintelligible. When a final stop occurs in English, Mandarin speakers have to adjust their normal speech patterns in order to produce clear enunciation.

**Consonant Clusters**

As shown in Table 4.6, the consonant clusters are considered very challenging for Mandarin speakers because consonant clusters do not exist in Mandarin. Clusters are often combinations of problem sounds, or a combination of common consonants that do not occur in clusters in Mandarin. In English, the structure of consonant clusters can be at the initial, middle, and final position of a word, and may include two or more consonants. Singers encounter consonant clusters in many foreign languages including Latin, German, French, and Italian.

The most difficult consonant clusters for Mandarin speakers are those at the beginning and final positions of a word. Mandarin speakers have particular difficulty with the initial unvoiced consonants [p], [t], [k], and voiced stops [b], [d], and [g] when they are followed by [l] or [r], as in *play*, *pray*, *break*, *glory*, or *create*. In particular, [l] or [r] are difficult for Mandarin speakers to articulate distinctively. They must intentionally use the tongue to articulate the [l] or flip the [r] at the beginning of a word when they speak or sing. Articulating final consonants is generally difficult for Mandarin speakers; consonant clusters are even more challenging. The book *Teaching American English Pronunciation*, by Peter Very and Susan Ehrlich, the authors state that final consonant clusters including [kt] as in *worked*, [[ft] as in *washed*, [dʒd] as in *judged*, and [ld] as in

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field are especially difficult for English learners to produce.\textsuperscript{100} Other consonant clusters such as [ks], [sk], [st], [ts], [lpts], [rk], [rts], [rks], [rst], and [rsts] are very difficult for Mandarin speakers as well. However, consistently being aware of the consonant clusters either at the beginning or ending of a word will improve the clarity of diction, verbal communication, and articulation.

**English Stressed Syllables, Rhythm, and Intonation**

In addition to the preceding discussion of intonation and tone differences between English and Mandarin, the comprehensibility of English by Mandarin singers must also be informed by their understanding of English word stress, rhythm, and inflection.

Due to the importance of correct stress and inflection patterns in English communication, Mandarin speakers have to adjust to emphasizing word stress instead of pronouncing each word with equal weight and duration on each syllable. When most Mandarin-speaking singers speak English or western lyrics, they are unable to automatically emphasize the stressed/unstressed syllables, resulting in a lack of clear diction or expression of text. When they sing text, diction issues may result in unclear vowels, muffled consonants, omission of sounds, or incorrect stress within the words. Correction of stressed and unstressed syllables is imperative for clarity (Table 4.8).

Generally speaking, the stressed word or syllable in English is created through changes in duration, pitch, and volume. Unstressed syllables are often shorter and may be reduced to a schwa [ə]. Focusing on these aspects of diction will help the Mandarin singer become aware of the distinction between stressed and unstressed syllables that is vital for the flow of speech and expressive singing.

\textsuperscript{100} Avery and Ehrlich, *Teaching American English Pronunciation*, 104.
Table 4.8 Hierarchy of Stress in English\textsuperscript{101}

<table>
<thead>
<tr>
<th>The Strong/Weak Word-Types</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary</strong> Nouns Active Verbs</td>
</tr>
<tr>
<td><strong>Secondary</strong> Adjectives Adverbs Interrogative Pronouns (who, what, where, when, why, how) Negatives</td>
</tr>
<tr>
<td><strong>Non-Stressed</strong> Articles (the, a, an) Prepositions (in, through) Conjunctions (and, or, but) Pronouns (me, I, she) Auxiliary and Linking Verbs</td>
</tr>
</tbody>
</table>

Over 90 percent of Mandarin words are monosyllabic and each word is pronounced as a full tone. As a result, Mandarin singers have difficulty interpreting the intonation patterns of English effectively. They also struggle with fluency of large grouping of words. Instead, they speak English text with separation of each word, in a choppy, staccato-like pattern. To improve English intonation, Mandarin singers should (1) practice reading English lyrics in groups instead of reading word by word, (2) be aware of the effect of lowered/falling pitch on declamation, and (3) practice the inflection patterns of English as a melodic, legato line.

\textsuperscript{101} LaBouff, \textit{Singing and Communicating in English}, 22.
CHAPTER 5

METHODOLOGY

The basis of beautiful choral tone is the same regardless of language: posture, breath, resonance, and vowel unification. There are many resources that address the development of these foundations, but very little has been done to address the needs of Mandarin singers who are performing Western choral literature. This methodology is designed to help Mandarin singers improve their ability to sing using Western diction and focuses on the challenges that are particular to Mandarin singers learning Western choral repertoire. This chapter will include exercises appropriate for the warm up sequence, as well as examples from Western choral repertoire.

Warm up

Healthy and beautiful singing throughout the rehearsal depends upon logical and pedagogical warm up techniques. Because so much can be achieved during a warm up it is necessary to plan effectively. Kenneth Phillips describes a useful warm up sequence for all choirs: energize the body, breath, ear, voice and song.¹⁰² This framework is useful for any singer, but there are also specific issues for Mandarin singers that can be addressed within it. Based on my experiences as a singer and conductor, I have developed the following area of focus for the warm up sequence: body, breath, onset, resonance, and articulation.

Body

Stretching and physical warm ups help singers establish and sustain proper posture throughout rehearsal. Most Mandarin conductors are effective in improving core body strength, releasing tension, and manipulating facial muscles. “Sighing is one of the most valuable pedagogical tools to the choral conductor in determining the overall health of the vocal mechanism.”103 In my experiences working with Mandarin choirs, I found that sighing exercises are not common for Mandarin singers. Specifically, the male singers were reluctant to participate, and uncomfortable with it. After I explained that sighing is much like yawning, I demonstrated and then had them use a hand motion that reinforced the lifted soft palate and the fall of the voice during the sighing sound. They were able to do this successfully. Pedagogically, sighing helps the singers employ the head voice, lift the soft palate, and round the lips. When they are aware of this, singers can avoid using the speaking voice when singing and focus more effectively on head resonance, both of which are particular challenges for Mandarin speakers. Sighing should be done at the beginning of the rehearsal, because it prepares the vocal instrument for accurate and healthy singing, and helps relieve body tension.

Breath

A pedagogical approach to breath exercises can help Mandarin choirs understand the concept of expressive singing “on the breath.” Based on my observations of Mandarin choral singing, this concept, along with the idea of breath management, is a difficult one. Some Mandarin conductors, perhaps like some of their Western counterparts, choose breathing exercises randomly, without a pedagogical sequence. During rehearsal, good

103 Holt and Jordan, The School Choral Program, 192.
breath support helps singers sing long musical phrases, control the dynamics, and achieve healthy onset. Because of their speech patterns, these may be particularly difficult for Mandarin choirs, but a systematic approach can have a positive impact on their ability to employ head voice, increase the resonating space, and sing on the breath.

**Use of Fricative Consonants**

The consonants [s], [v] and [tʃ] can be used to expand the singer’s control of the muscles of exhalation, increasing the control of tone and the ability to sing long phrases. For instance, hissing [s] over a crescendo/decrescendo helps singers maintain consistency of breath. Singing a descending penta-scale on [v] helps singers engage appropriate resistance in order to support the tone. Staccato patterns on [tʃ] activate the abdominal muscles needed to fully engage the breath. Three such exercises are listed in Figure 5.1.

When the choir performs these exercises, the conductor should use a forward/backward gesture to direct the singers in a gradual dynamic change. The pedagogical steps here include addressing consistency, resistance, and engagement. These steps are significant for all singers, but Mandarin speech patterns may make this use of the breath even more of a challenge.

![Figure 5.1 Exercises Using Fricative Consonants](image)
**Panting**

This is a very good exercise to assist Mandarin singers when they sing English lyrics or Western texts, in which they may drop consonants or muffle the clarity of the diction. Greater control of the breath helps singers articulate consonants with clarity and precision. Panting alternates exhalation and inhalation at a steady tempo through the mouth while making a “panting” noise. This exercise requires steady use of the abdominal muscles, so that singers produce *staccato* notes from the diaphragm rather than from the glottis, or with a breathy [h] before each pitch. This exercise needs to be taught very slowly at first, gradually speeding up and extending the duration as singers learn to control the pant more fully. Figure 5.2 demonstrates this process. It is important to note that when the speed of panting increases the amount of abdominal movement actually decreases.¹⁰⁴

![Suggested tempo range: $J = 80-132$](image)

Exhale

**Figure 5.2 Panting Exercise**

**Onset**

Healthy, balanced onset is necessary for a beautiful singing tone. In my observations of Mandarin choirs, while most singers engage the breath by following the conductor’s preparatory gesture, there are also singers who have a breathy tone, scoop the first notes, or use a glottal entrance. Some conductors stop and re-start the choir, after

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requesting that singers open their mouths, breathe before singing, concentrate, and look at the conductor. While this may be effective at times, it does not address the real difficulty. Singers who do not use healthy onset have a breathy tone caused by a lack of support, or they produce a glottal attack by closing the glottis and forcing it open with breath pressure. Breathy tone lacks clarity and glottal attacks result in tense vocal production. However, the use of the audible [h], e.g., the word “high” during the early stage of warm-up can improve balanced onset because it promotes the inducement of breath activity prior to phonation. This technique directs singers to produce the tone with an imaginary or nearly inaudible [h] in spoken exercises or in any onset vocalization as a means of promoting healthy, balanced onset. Figure 5.3 shows examples of onset exercises.

![](image)

**Figure 5.3 Onset Exercises**

**Resonance**

Conductors of Mandarin choirs need to address the resonators and articulators as they affect choral tone. The registers of the voice include the chest voice, mixed/middle voice, and the head voice. “The chest voice is made up of pitches that sound below the general speaking range of a voice. The terms middle/mixed voice refer to those singing

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106 Ibid.
sounds that coincide with pitches heard in the speaking range. The head voice consists of singing sounds that ring above the speaking range.”

Mandarin conductors often employ a lifted soft palate and the head voice. This is important, but the articulators—lips, tongue, and teeth—and the placement of the jaw also need to be addressed. Because of their speech patterns, Mandarin singers usually employ a very bright speaking space and a lowered soft palate, and their speaking tone is mostly without inflection. These tendencies may inhibit their ability to unify vowels and create resonant tone.

**Resonating Spaces**

The following sections address the resonating spaces of the singing voice, starting with the tallest vowel, [a]. To create the [a] space, singers must open the mouth, keeping the lips slightly forward as for the [u] vowel. The jaw should be relaxed, though its position will vary slightly for other vowels. The soft palate should be lifted, and the tongue should rest behind the bottom front teeth.

**Head Voice**

Teaching head voice during the early part of the warm up sequence promotes beautiful tone. This step is often omitted from the warm up exercises in Mandarin choirs. Because these singers often bring their speaking dialect to their vocal production, they may sing very heavily, or push the voice inappropriately in the upper range. The head voice consists of singing sounds that ring above the speaking range. Once head voice is developed, singers increase their dynamic range and their flexibility in tone color. To develop the head voice, (1) use [u] and [i] as “head tone vowels,” (2) ensure that slightly

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rounded lips are used to refine these vowels, (3) vocalize beginning with a sigh in a “top-downward” fashion (see Figure 5.4); start in the upper range on [u] or [i] vowel and glide smoothly down to the middle/lower voice, (4) the sound should not have an audible “break” between the upper and lower vocal register, (5) the sound should remain unforced. After this sighing exercise, singers can sing vocalization in Figure 5.5, in which male singers employ the falsetto to develop head resonance.

![Figure 5.4 Exercise of Sigh](image)

*Figure 5.4 Exercise of Sigh*

![Figure 5.5 Exercise of Head Voice](image)

*Figure 5.5 Exercise of Head Voice*

**Resonance with Nasal Consonants**

The use of nasal consonants [m], [n], and [ŋ] in vocalization develops “ring” in the vocal tone. These three nasal consonants exist in Mandarin language, but most Mandarin conductors only employ the nasal consonant [m] in the vocal tone. On the other hand, American choral ensembles typically employ all three nasal consonants in vocal exercises. Specially, [ŋ] is frequently used in vocal exercises, incorporating words that end in [ŋ], e.g. “hung” to encourage resonant vowel production.¹⁰⁹ For example, the word “sing” is useful in vocal exercises because it ends with [ŋ], but also includes the

consonant [s] to engage the breath (Figure 5.6). Further, there are three pairs of nasal consonants and vowels that are useful for developing resonant tone: [m] and [i], [n] and [e], and [ŋ] and [a] (see Figure 5.7). The vowels [i] and [e] are produced by engaging the most forward placement for brighter vowel resonance. If conductors want to develop darker tone, the vowels [u] and [o] are useful in the vocal exercise. Just as nasal consonants followed by a forward vowel help develop a resonant tone, so too can back vowels be used with nasal consonants to keep the resonance from falling too far into the throat. An additional nasal combination of forward placement and head resonance is [bm]. This voiced consonant followed immediately by the nasal [m] can be used in exercises as well as in rehearsal of repertoire.

![Figure 5.6 Exercise for Resonance Through Nasal Consonant/Vowel Pairing](image)

![Figure 5.7 Nasal Consonants and Vowels](image)
Articulation

Learning articulation of unvoiced and voiced consonants improves Mandarin singers’ clarity of diction. In singing, consonants deserve as much attention as vowels in order to communicate a text. Consonants must be formed quickly and precisely. Mandarin is over ninety percent monosyllabic words; each includes a consonant and a vowel. In contrast, English consonants occur in the initial, middle and final positions of words. Consequently, Mandarin singers often mispronounce words or allow consonants to drop off when they sing English or Western lyrics. To help Mandarin singers develop their ability to articulate clearly, exercises that employ the unvoiced consonants [p], [t], [k], [s], [f], [tʃ], [ʃ], and [θ], and the voiced consonants [v], [d], [b], [g], and [r] should be used. By differentiating the rhythmic pattern and increasing the speed of execution, articulation skills can be developed.

To develop forward, focused diction, singers should begin by articulating only one of those sounds, repeating it three or four times slowly and evenly, with a slight inhalation between each consonant. In my observations of Mandarin singers, they move their jaw frequently and lose precision due to lack of breath support, or incorrect use of the tongue or lips. When the tempo increases, singers often lose tempo, articulation and enunciation, and the consonants become muffled. The conductor should ask singers to keep the jaw relaxed and stationary. Airflow should be continuous, with articulators employed to produce consonants precisely. Singers should be encouraged to produce a variety of rhythmic patterns. Excerpts from a choral work can be taught using this exercise, while also addressing phonation, articulation, and tone. Figure 5.8 contains examples of four appropriate exercises.

Figure 5.8 Unvoiced/Voiced Consonant Articulation Exercises

**Vowel /ɛ/ and /æ/**

The vowels [ɛ] and [æ] are quite challenging to Mandarin singers; because they do not exist in Mandarin, native speakers have difficulty distinguishing between them. When Mandarin speakers see [ɛ] or [æ], they often pronounce them as [e]. When singers pronounce [ɛ] and [æ], they spread their lips, tighten tongue muscles, and use a shallow mouth space. In particular, when forming the [æ] vowel, singers tend to use more tension in the tongue and jaw than for [ɛ]. For [ɛ], the sides of the tongue should be in light contact with the edges of the upper molars. For [æ] the tip of the tongue should be in contact with the lower front teeth, with the sides of the tongue aligned with the lower molars. To teach Mandarin singers to form these vowels correctly for singing, the conductor should have them form [a] before approaching the [æ], since the latter requires the jaw position to be slightly more closed. Singers can then close the jaw a bit more and put the sides of the tongue in contact with the upper molars to produce [ɛ].

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To sing [æ] and [ɛ], starting with [a] creates a tall singing space, with the soft palate lifted. Slightly rounded lips focus the vowel space, and the tongue is relaxed. For the exercise in Figure 5.9, singers must form the [a] vowel in tall space with forward placement. The consonant [p] is quickly articulated and followed by [æ]. The word “path” is then sung in a resonant space instead of a bright nasal sound.

A more focused [ɛ] vowel can be produced by shifting the vowel slightly toward [e] as demonstrated in Figure 5.10. They often use a very bright, “shallow” sound on the last syllable, caused by spread lips and a lowered soft palate. The [e] vowel calls for a more forward tongue position, and rounded lips, which results in a more focused vowel.

Figure 5.9 Excerpt from “Path to The Moon,” by Eric H. Thiman

Figure 5.10 Excerpt from “Sound the Trumpet,” by Henry Purcell

Vowel [i] and [ɪ]

Generally speaking, when Mandarin singers speak the words “in” and “even”, they use same vowel [i] for both words because it is found in Mandarin. To articulate both vowel [i] and [ɪ] distinctly, the conductor should teach the Mandarin vowel [i] first, then ask the singers to drop the jaw slightly, and open to the taller vowel [ɪ]. The [ɪ] vowel should have the lip shape of [u], as in the German vowel [ü], which establishes a resonant space, but is more focused than [i].
Mandarin singers require practice to sing with appropriate English text inflection. When they speak the text, the conductor should ensure that the singers are maintaining a tall vowel space with slightly rounded lips to avoid “chewing” the text. As they perform the exercise in Figure 5.11, they should lift the soft palate, sustain all vowels, and exaggerate the initial consonants. As the phrase ends, they should employ a hand motion that represents the text inflection, i.e., extend the hand forward on the stressed syllable, and relax it back on the unstressed syllable.

The word “in” appears frequently in English as shown in Figure 5.12. To avoid singing it with a shallow space, especially at a forte dynamic, Mandarin singers should create a tall [a] space by touching the tongue to the back of the lower front teeth, relaxing the jaw, and focusing the sound through rounded lips.

Vowel [u] and [ʊ]

The English vowel [ʊ] is confusing for Mandarin singers. The differences between boot [u] and book [ʊ] are very difficult to distinguish. Typically, Mandarin speakers use [u] for both words. The vowel [ʊ] uses a slightly taller resonating space, a
more open jaw, a lower tongue than [u], and the lips are slightly less rounded. The conductor should demonstrate these differences carefully.

The [u] vowel is excellent for developing a resonant tone, but Mandarin choirs often perform it in a very shallow space. In the example in Figure 5.13 the [u] may be quite spread, and they may also aspirate the [t] (allow too much breath too escape, so that it sounds like [ts]). To articulate the word to, the singers should start with [u] in the head voice, with lips rounded, and the tip of tongue down and ready to move to the next sound. The singers will need to practice articulating [t] quickly, without undue breath escaping, and then move directly to the vowel.

The word sure as in Figure 5.14 is another challenge for the Mandarin singer in Figure 5.14. They would likely sing it with the lips rounded too tightly, and the soft palate lowered. They would also be likely to curl the sides of the tongue up for the [r]. To articulate it correctly, the conductor should establish the [ʊ] vowel, incorporating the [ʊ] to create a more open resonating space. The initial consonant sound [sh] needs to be sung on a flow of breath, and the [r] should avoided, moving directly from [ʊ] to [a].

The vowels in the phrase “Sure on this shining night” include [ʊ, a, ɪ, ɑ, ɪ, ɑ], among which the [a] vowel appears three times within this phrase. The conductor needs to ask singers to maintain the [a] space in the head voice over the entire phrase, while using the tongue to articulate the diction clearly.

\[ \text{to} \quad \text{cel-e-brate, to cel-e-brate the glo-ries of this day} \]
\[ [\text{tu}] \quad \text{sel ə bret tu sel ə bret_ ŋə glə niz əv əs də} \]

Figure 5.13 Excerpt from “Sound the Trumpet,” by Eric H. Henry Purcell
Vowel [o] and [ɔ]

The closed vowel [o] is found in both English and Mandarin. This vowel is easier to pronounce, but people may pronounce it as [ou] instead of [o]. When singing [o], Mandarin speakers may produce a dark vowel, with the tongue arched very far in the back of the mouth, resulting in a more muffled sound. A pure [o] vowel should be performed with the jaw relaxed and the tongue arched only slightly back from the center. Once Mandarin singers maintain the pure [o] vowel well in Figure 5.15, conductors can coach singers to articulate the cluster consonant [gl] followed by [o]. Singing the cluster consonant [gl] slightly ahead of the beat improves diction clarity and allows more vocal freedom.

To form the open vowel [ɔ], the tongue is arched slightly further back from center than for [o], and the soft palate must be lifted. In Figure 5.16, conductors can modify [ɔ] with [a] vowel in order to sing the first two notes “For God” with a sustained tall space. In choral singing, unified vowels are crucial, as is the timing of consonants. The [f] and [g] in the first two notes must be sung before the beat, while the [rn] of *born* should sound with the initial consonants of the next word in Figure 5.17. Singing sustained vowels with carefully timed consonants is not an obvious technique for Mandarin speakers, and must be isolated in rehearsal. An effective method to achieve change is to

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Figure 5.14 Excerpt from “Sure on This Shining Night,” by Samuel Barber

[Music notation image]
speak the text in rhythm, with the conductor demonstrating the correct sustained vowel and consonant articulation for the choir to repeat.

Figure 5.15 Excerpt from “Glory to God in the Highest,” by Randall Thompson

Figure 5.16 Excerpt from “O Clap Your Hands,” by John Rutter

Figure 5.17 Excerpt from “How Great Our Joy,” by Craig Courtney

**Consonants [l] and [n]**

The English consonant [l] is one of the most challenging consonants for Mandarin singers. The [l] consonant is only found in the initial position of a syllable in Mandarin, rather than in the initial, middle, and/or final position, as it is in English. To articulate the [l] consonant, the tongue tip has to firmly touch the teeth ridge. Most Mandarin singers do not articulate [l] correctly, resulting in an indistinct, muffled sound when singing. In Figure 5.18, the “falala” lyric is used to practice the [l] sound. Mandarin singers do not articulate [la] frequently, and are likely to pronounce it as [na]. In order to articulate [la]
clearly, they must maintain the [a] space, avoid excessive jaw movement, and use only the tip of the tongue to contact the ridge of the upper teeth.

The consonants [l] and [n] must be produced distinctively. Generally, if Mandarin singers do not articulate [l] firmly, it will be heard as [n], e.g., light pronounced night. For the word long in Figure 5.19, singers should firmly touch the hard palate with the tongue before moving to the vowel. Otherwise, the word long will become nong. Some other words used to practice consonants [l] and [n] include sail, moon, on, blue, night, wind, and cool. When [l] is in the final position, most Mandarin singers would mispronounce or omit it, so that cool [kul] would become [ku], or Israel [izre]l would be Israe [izre].

See Figure 5.20.
**Consonant [r]**

Articulation of English consonant [r] is challenging to Mandarin singers. In Mandarin, each word typically consists of a consonant and a vowel. The [r] sound is only found at the beginning of syllable, followed by a vowel.

The flipped r sound is usually employed in singing. It is produced by touching the tip of the tongue against the upper gum ridge. To sing the beginning of rejoice shown in Figure 5.21, singers have to close the jaw position while keeping a lifted soft palate, then articulate [r] which is immediately followed by [ɪ]. In Figure 5.22, for must be linked to the next word unto, e.g. fo runto [fɔ rʌntu]. In the final phrase the [r] of born is pronounced as a schwa [ə] instead or [r], and is followed by the nasal consonant [n]. In Figure 5.23 the word earth typically sung with a curled r sound on the whole note. The conductor can train singers by starting with the lifted soft palate to sustain the schwa [ə], while releasing the final consonant th [θ] at the release or down beat of the next measure.

![Figure 5.21 Excerpt “Hallelujah, Amen,” from Judas Maccabaeus by G.F. Handel](image1)

![Figure 5.22 Excerpt “For Unto Us a Child Is Born,” from Messiah by G. F. Handel](image2)
Consonants [θ] and [ð]

Consonants [θ] and [ð] can be found in the initial, middle, and final position of a word in English. Mandarin speakers normally substitute the unvoiced consonant [θ] as [s] and the voiced consonant [ð] as [d]. To achieve consistent clarity, singers must learn to avoid consonant substitutions. The word *with* [wið] and *the* [ðə] are shown multiple times in Figure 5.24. If Mandarin singers sing all the words by substituting consonant [d], the whole musical phrase becomes choppy and indistinct. The word *earth* [ɜːθ] in Figure 5.25 is released on consonant [θ]. If singers release on the substituted consonant [s], we will be heard “us,” which is totally different from the original word.
**Consonants [v] and [f]**

Mandarin singers do not produce a distinct vibration for the voiced fricative [v]. The voiced consonant [v] and the unvoiced [f] are fricative sounds involving the lower lip and upper teeth. When Mandarin speakers pronounce both consonants, they need to articulate [v] and [f] distinctively. Based on my observation of choirs singing the phrase in Figure 5.26. Mandarin singers sing ve [vɛ] by lightly touching the lip, treating [v] like [f]. When the conductor asked the singers to sing the first measure with a crescendo, the singers pushed the jaw forward for the ve [vɛ] syllable. Although the fricative [v] sound could be heard better than their first try, they still had not improved the singing placement or clarity of diction. To correct this, the conductor should ask the singers to perform the melody on [v], which would build the singers’ breath management and resonance, as well as the articulation of the voiced consonant. Afterward, singers can then sing the entire phrase, establishing the [a] space before singing, placing the tongue forward, and singing [v] with the vibration slightly ahead of the beat.

![Figure 5.26 Excerpt from “Ave Verum,” W. A. Mozart](image)

**Consonant [m], [n], and [ŋ]**

In Mandarin, the syllables or words never end with consonants except [n] or [ŋ]. In English, nasal consonants [m], [n] and [ŋ] can be found in the initial, middle, and final position of a syllable. Mandarin singers find it challenging to articulate these three nasal consonants. They would not close the lips for [m], and for [n] they would touch the tip of
the tongue behind the lower front teeth rather than touching the hard palate. For [ŋ], they do not typically touch the back of the tongue to the lowered soft palate. These methods of articulation are unfamiliar.

Conductors have to teach singers the correct point of contact for each nasal consonant. Figure 5.27 shows a musical example containing all three nasal consonants. To train Mandarin singers to articulate nasal consonants precisely, singers should practice slowly speaking “sing, and, dance, and come” before they sing. Conductors must monitor singers closely as they pronounce the words since Mandarin speakers often omit the consonant in the middle or ending position. When singers practice speaking the whole phrase, they should exaggerate the articulation of each initial consonant along with the text inflection.

Singers performing the phrase in Figure 5.28 completely omit the final consonant [m] in cherubim and seraphim, as well as the [n] in join. To remedy the problem, singers can employ staccato to speak/sing the text in Figure 5.28.

![Figure 5.27 Excerpt from “Praise the Lord,” by G. F. Handel](image)

![Figure 5.28 Excerpt “Hallelujah, Amen,” from Judas Maccabaeus by G.F. Handel](image)
**Final Stopped Consonants: Voiced and Unvoiced**

In Mandarin speech patterns, final stopped consonants do not exist. When Mandarin singers sing Western repertoire requiring a final stopped consonant, their articulation lacks precision, e.g., the duration is too long, or it is completely omitted. The text may then be misunderstood, or not comprehended at all.

In Western choral music, consonants are actions made audible. Kenneth H. Phillips stated the following four basic rules of consonant articulation: (1) consonants are to be exaggerated with breath energy, not muscular tension; (2) consonants are to be executed quickly; (3) consonants that are voiced or tuned are to be sung on pitch; and (4) consonants that begin words occur slightly ahead of the beat. In Figure 5.29, the voiced consonant [d] of the word “Lord” needs to release quickly with rhythmic buoyance, and the final [d] should be heard. When singing the final syllable of *trump* in Figure 5.30, singers must sustain the [ʌ] vowel for four beats, then release final unvoiced consonants [mp] together, with a release of breath. With regard to the second measure of Figure 5.31, the unvoiced consonant [t] of *night* needs to elide with next word *of*, as [naɪ tɔf].

Regarding the final consonant of “round,” the voiced consonant [d] must be sung on pitch.

![Musical notation](image)

Figure 5.29 Excerpt from “My Soul’s Been Anchored in the Lord,” by Moses Hogan

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Consonant Clusters

English Consonant clusters are especially difficult for Mandarin singers to produce. In most consonant clusters, [p], [t], [k], [b], [d] and [g] are followed by [l] or [r].

In Figure 5.32, Figure 5.33, and Figure 5.34, the words *clap, praise, break,* and *great* begin with a consonant cluster. When Mandarin singers sing consonant clusters, they often miss the [l] or [r], so that *clap* [klæp] sounds like [kæp], or *praise* [prez] becomes *paise* [pez]. To improve the articulation of consonant clusters, singers should: (1) reduce tongue tension, (2) prepare the articulators properly for each consonant, and (3) sing the consonant clusters before the beat, so that the vowel sounds on the beat.
A distinctive difference between English and Mandarin is the richly varied stress emphasis within multi-syllable words in English. Each Mandarin syllable contains one consonant and one vowel, and each word is stressed. Further, in English the stressed can occur in any syllable. The concept of stressed and unstressed syllables is a challenging one for Mandarin singers. There is a tendency to stress every syllable in English equally, as they would do in their own language. Therefore, teaching them the concept of unstressed syllables is difficult. Understanding and performance of text inflection is significant in English, however, and it enhances communication and poetic beauty in performance.

There are some rules of syllabic stress in foreign and English languages. Most two syllables words stress the first syllable with the second syllable sounding softer, with less weight as in Figure 5.35. Multi-syllable words are frequently stressed in the middle syllable. In Figure 5.36, the word *Maria* [məˈrjaː] is stressed in the middle of the word, but *virgine* [ˈvirdʒiːnə] is stressed on the first syllable. To help Mandarin singers understand
and perform stressed and unstressed syllables, the conductor should demonstrate the correct inflection of the text, and have the choir imitate, speaking aloud. As they become more familiar with the text, a hand gesture that reinforces the weight of the appropriate syllables can be added, and continued as they begin to sing the phrase. Conductors must understand stressed syllables and unstressed syllables when teaching their choirs to sing in Western languages.

Elision

English is a legato language. In singing, all vowels are sustained to produce beautiful tone. Consonants serve to communicate expression and contribute to vowel clarity. In order to speak English clearly, Mandarin speakers pronounce each English word separately and stress each word. In choral singing, the skill of elision helps singers connect a consonant and a word beginning with a vowel, so the text is more understandable. There are four steps to practice elision with the exercise in Figure 5.35: (1) speak the text in rhythm at a slow tempo, (2) stress the first beat only, making beats
two and three unstressed, (3) connect the last consonant with the next initial vowel, (4) sustain each vowel, articulating the elided consonant quickly. The elision in Figure 5.37 therefore becomes [ʃʊ rən ðɪ fai nɪŋ nai tə vstər med fæ dʊz rəʊnd]. The elision in Figure 5.38 is sung as [ɡə dɪ sɡæn ʌp wɪ ðə mɛ ri nɔɪz].

Figure 5.37 Excerpt from “Sure on This Shining Night,” by Samuel Barber

Figure 5.38 Excerpt from “O Clap Your Hands,” by John Rutter

**Diphthongs**

The technique of singing a diphthong is typically to sustain the first vowel, and at the last moment shift to the second vowel. Based on my observation of Mandarin choirs, singers usually shift to the second vowel too quickly, sustaining the second vowel instead of the first. The choir needs to understand how to sustain the first vowel, as well as exactly when to articulate the second vowel. For example, for the word *rejoice* [rɪdʒɔɪs] in Figure 5.39, singers should start singing [dʒɔ] on beat three of the first measure, and then sing the second vowel [ɪ] at the end of beat one in the second measure; the final [s] is actually released on beat two. When the diphthong is sung on more than one note, e.g, *around* and *rebound* in Figure 5.40, the first vowels are sustained, and the second vowels
are added just before the voiced consonant [d], which should be heard and released rhythmically.

Figure 5.39 Excerpt “Hallelujah, Amen,” from Judas Maccabaeus by G.F. Handel

Figure 5.40 Excerpt from “Sound the Trumpet,” by Henry Purcell

Vowel Modification

Singing appropriate vowels in higher pitches is another challenge for Mandarin singers. In my observation, higher notes sung in Western lyrics often result in gradual thinning and elongation of the vocal folds. The voices are characterized by a lack of resonance, good intonation and beautiful tone. The vibrato is often unsteady as well. Even when told not to push in the higher register, and to use more mouth space and less jaw motion, singers have difficulty retaining those techniques. Vowel modification can help singers build better technique; it is a more effective way to help them reduce tension and sing with appropriate space.

To modify closed vowels to a more open position, (e.g. [i] to [ɪ] or [u] to [ʌ]) singers need to create a larger resonating space (lifted soft palate), with the jaw relaxed.
and the tongue pushed more forward than usual. Baritones and basses may frequently move from open vowels to closed vowels, in reverse from the sopranos, because they need to use a brighter sound as the pitch descends.

In the excerpt in Figure 5.41, the soprano tessitura is around the high G, and the vowels are [u, a, i, ɛ, i, u, u]. The conductor should have the sopranos speak all the vowels in an [a] space, making sure they keep all the vowels tall. The singers should then switch to open vowels [ʊ, a, i, e, i, ʊ, ʊ] by opening the mouth more, rounding the lips, and pushing the tongue more forward. When singers can comfortably speak all vowels in the correct shapes, they can then add consonants singing staccato at a slow tempo. This helps singers keep the vowels in a vertical space, with precise articulation of consonants. This vowel modification exercise will allow choirs to sing with more comfort, beautiful tone, and better breath support.

![Figure 5.41 Excerpt “Dies Irae,” from Requiem by W. A. Mozart](image)

**Conclusion**

This methodology is based on an understanding of the differences between English and Mandarin Chinese that cause particular difficulty for Mandarin singers. Conductors of Mandarin choirs will be able to use this methodology as a resource for training their choirs to sing Western choral repertoire with clarity of diction, unified vowels, and resonant tone. In addition, it is hoped that Western conductors who work with Asian singers will also find this methodology useful. An understanding of
challenges their singers encounter will help them address those issues more efficiently and effectively. Mandarin choirs often seek to perform music from the Western choral repertoire; with an effective methodology, these singers should be able to sing a large quantity of Western choral music with confidence and a positive level of engagement in the rehearsal process. The final product will be intelligible diction, beautiful vowels, and successful artistic performances.
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