



# Research on the Application of the International Phonetic Alphabet in the Training of German Art Song Singing

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**Abstract:** The International Phonetic Alphabet (IPA) plays a crucial role in the training of German art song singing. Its scientific phonetic notation system offers precise pronunciation guidance for learners. This paper will focus on the relationship between the IPA and the German phonetic system, expound their characteristics and corresponding rules, and thoroughly explore the application of the IPA in the training of German art song singing. Additionally, some targeted training methods will be proposed. By demonstrating the practical effects of the IPA in enhancing pronunciation accuracy and emotional expression, the significance of the IPA for German art song singing will be emphasized. It is also expected that the IPA can be better utilized and promoted in the future, providing a reference for further improving vocal music education.

**Keywords:** International Phonetic Alphabet; German; Art Song; Singing Training

## Introduction

German art songs, with their unique cultural connotations and high artistic expressiveness, hold an important position in vocal music education. However, in actual singing training, learners often encounter problems such as inaccurate pronunciation, stiff intonation, and insufficient integration of rhythm and lyrics, which severely affect the emotional expression and artistic effect of the songs. The German phonetic system is complex, encompassing long and short vowels, consonants, and unique syllable stress patterns, posing extremely high requirements for non-native learners. The International Phonetic Alphabet (IPA), as a scientific phonetic notation system, provides a standardized pronunciation reference for vocal music learners and can effectively solve the problem of inaccurate pronunciation. With the assistance of the IPA, vocal music performers can accurately master the German pronunciation rules, enhance their understanding and interpretation of lyric content, and lay a foundation for improving the singing quality of German art songs.

## 1. Overview of the International Phonetic Alphabet

### 1.1 Overview of the IPA System

The International Phonetic Alphabet (IPA), a scientific and systematic phonetic notation tool, has a long history dating back to the end of the 19th century. At that time, the International Phonetic Association, in response to the needs of language education and phonetic research, established this far-reaching system. Its original intention was to break the barriers in pronunciation notation among different languages and provide a unified, precise, and universal pronunciation reference standard for language learners, researchers, and educators worldwide. During its long development process, the IPA has undergone numerous revisions and improvements. The two important revisions in 1989 and 1993 are of particular significance. These revisions further optimized the representation of phoneme symbols, enabling the phonetic system to more accurately depict various phonetic details. At the same time, the marking of suprasegmental features has also been specified in more detail, thus being able to cover richer language features such as tone, intonation, vowel length, and stress. The continuous progress of these revision works ensures that the IPA system always keeps pace with the times, can incorporate newly discovered pronunciation marks, and continuously enhances its authority and practicality in the fields of phonetic research and language teaching. It can be said that the IPA plays an indispensable foundational role in modern linguistics and related fields and has made indelible contributions to human language research and communication.

### 1.2 Application of the IPA in German Learning

The IPA, also known as the "International Phonetic Alphabet," is a universal alphabet used to mark the pronunciation of foreign words with symbols. For performers, it is like using phonetic symbols to learn English. We can solve pronunciation problems through the IPA. German song singing has strict requirements for pronunciation. Its rich vowels, complex consonants, and unique umlaut rules pose challenges for singing. The IPA provides performers with a precise pronunciation key. Long and short vowels have different timbres and pronunciation durations. For example, if the long vowel [a:] is not properly handled in a song, it may lead to a dragging rhythm or misinterpretation of emotions. Short vowels need to be pronounced briefly and clearly. The subtle pronunciation differences of umlauts such as "ä"[e], "ö"[ø], and "ü"[y] are of great significance in song expression. When pronouncing "ü" in "über", the tongue touches the teeth and the lips are tightly rounded. According to the IPA norms, it can be accurately performed. For consonants such as "ch," whose pronunciation varies depending on the following vowel as [x] or [ç], and the pronunciation characteristics of "sp" and "st" at the beginning of a word, can be accurately controlled with the help of the IPA, avoiding indistinct



pronunciation and ensuring clear lyrics. For example, in the performance of the classic German song "Heidenröslein", the accurate pronunciation of consonants makes the lyrics clear and audible, like pearls dropping on a jade plate. Therefore, the IPA simplifies and clarifies a series of problems related to language and music. At the same time, for performers, it enables more effective transmission of information between composers and performers.

### 1.3 Role of the IPA in Vocal Training

Language constitutes the foundation of vocal music techniques and art. The knowledge of the IPA helps singers anchor symbols and sounds. In the process of vocal training, the IPA system provides learners with precise vocal guidance, which helps them pronounce accurately and convey emotions when singing. German art songs are like a bright pearl in the field of vocal music. They are characterized by a high degree of integration of poetry and music and impose strict standards on the pronunciation accuracy of performers. The IPA system, with its unique advantages, endows each phoneme with a unique and precise identifier, providing performers with a detailed and accurate pronunciation map. With this powerful tool, performers can overcome the obstacles formed by their native language pronunciation habits. By using the IPA, each phoneme is accurately marked, facilitating performers to gradually eliminate the constraints of song language characteristics and native language pronunciation habits. The role of the IPA in vocal training is not only a simple aid for pronunciation standardization but also a key factor in enhancing the artistic expressiveness and emotional communication ability of performers. It injects a continuous source of vitality into the inheritance and development of vocal music art and helps performers continuously climb new heights in the pursuit of artistic truth.

## 2. Linguistic Characteristics of German Art Songs

### 2.1 Overview of German Art Songs

German art songs (Lied) are important representatives of German and Austrian music culture, occupying a crucial position in vocal music art. They have distinct characteristics and profound cultural deposits. They emerged in the wave of romanticism at the end of the 18th century and the beginning of the 19th century. At that time, the social focus on individual emotions led composers to ingeniously blend poetry and music. The lyrics mostly originate from the works of famous poets such as Goethe and Heine, covering a wide range of themes including love, nature, mythology, and philosophy, endowing the songs with high literary value. Their performance form mainly combines the piano and the human voice, emphasizing the perfect integration of poetic lyrics and music to convey rich emotions and profound thoughts. In terms of style, they are distinguished from the grand narratives of opera and other vocal forms by their introverted, delicate, and deep emotional expression, focusing on the individual's inner emotional experience and spiritual world. This style is deeply influenced by German culture and romanticism. Many famous composers such as Franz Schubert, Robert Schumann, and Johannes Brahms have created a large number of classics for it. These works are of great significance in terms of musical artistry, language and literary connotations. Because the lyrics are often taken from the works of well-known poets, an excellent fusion of poetry and music is achieved, becoming precious artistic heritage.

### 2.2 Pronunciation Characteristics of the German Language

German belongs to the Germanic language family. It has rich vowels, numerous consonants, and relatively complex letter and pronunciation rules. It consists of 26 letter symbols (6 vowels, 20 consonants), 3 umlauts (ä, ö, ü), and the letter ß. Among them, the three umlauts [ä], [ö], [ü] have different pronunciations from the basic vowels [a], [o], [u]. For example, the pronunciation of [ä] is between [a] and [e]. The tip of the tongue lightly touches the lower teeth, the tongue position is slightly higher and more forward than when pronouncing [a], and the degree to which the lips are spread apart to both sides is smaller than that of [a], such as in "Mädchen" (girl). When pronouncing [ö], the lips are stretched forward and rounded, the tip of the tongue does not touch the lower teeth, and the tongue surface is raised towards the hard palate, such as [Ö] (oil). When pronouncing [ü], the lips are rounded like when pronouncing [u], but the tip of the tongue touches the lower teeth, the tongue position is more forward, and the lips are more tightly rounded when the air passes through, such as in "über" (above). [ß] is a unique letter in German, representing the sound of "ss", such as in "Straße" (street).

German vowels include long and short vowels and diphthongs. When pronouncing long vowels, the duration is long, and the mouth shape remains more stable and full. For example, "ah" in "Tag" (day) is pronounced as [a:], with the tip of the tongue not touching the lower teeth, the tongue position low and flat, and the lips naturally opened. Short vowels are pronounced briefly, such as [a] in "Mann" (man), with a mouth shape and tongue position similar to that of the long vowel [a] but a shorter pronunciation duration. The pronunciation of diphthongs is relatively special. For example, [au], [ɔy], etc. require a smooth transition from one vowel to another while maintaining coherence and fluidity.

The German consonant system is also highly characteristic. The opposition between voiceless and voiced consonants is significant, such as [p] vs. [b], [t] vs. [d], [k] vs. [g], and the pronunciation of plosives and fricatives is clear and powerful. In addition, some special consonant combinations in German, such as [ç], [ʁ], [x], pose challenges for learners and require precise control of tongue position and air flow. The pronunciation of "ch" is relatively complex and has two main pronunciations. After "a, o, u, au," it is pronounced as [x], a voiceless fricative with the pronunciation position deep in the throat, similar to the sound of "drinking" in Chinese but with stronger air flow, such as in "Buch" (book), "acht" (eight). After "i, e, ä, ö, ü," it is pronounced as [ç], with the pronunciation position forward, the tip of the tongue touching the lower teeth, and the front part of the tongue raised towards the hard palate to form a narrow slit. When the air passes through, a fricative sound is produced, such as in "ich" (I), "nicht" (No).

German words often end with consonants, have clear syllables, and the pronunciation of consonants should not be overly softened. There are also different classifications in syllable structure, including word syllables and verse syllables, stressed syllables and unstressed syllables. When reading lyrics, it is necessary to read according to verse syllables; otherwise, the integrity of the sentence will be destroyed. Stress is divided into word stress and sentence stress. For

example, in the sentence “To be, or not to be, that is the question,” different stresses will lead to different meanings. German word stress usually falls on the first syllable, such as in “Arbeit” (work), “Tante” (aunt), “Name” (name), etc., with the stress on the first syllable. However, there are also some special cases, such as loanwords. Therefore, the accurate grasp of stress has an important impact on the construction of intonation and rhythm. Especially in the performance of German art songs, word stress is manifested in multiple aspects in music: volume, weight, direction, vowel length, emotion... Therefore, blurred pronunciation will directly affect the conveyance of lyrics and the expression of emotions. Thus, accurate language pronunciation is particularly important.

### 2.3 Pronunciation Difficulties in Learning German Art Songs

In the performance of German art songs, the challenges at the language level cannot be underestimated. These difficulties are mainly reflected in three aspects: pronunciation, grammar, and meaning understanding and expression. Firstly, from the perspective of pronunciation, there are many special features. For example, the trilled “r” is a significant difficulty in learning vocal music. In words such as “dir” (you), “durch” (pass), the tongue needs to vibrate to produce the sound, and many people have difficulty mastering the correct uvular vibration technique, which is extremely difficult for many non-native German speakers. Secondly, in terms of syllable and stress rules, the syllable division of German words is different from that of some languages. For example, “verachtet” (desdain) is divided into “ver - achtet.” The position of word stress is variable. The stress of “Tisch” (table) is on the first syllable, while the stress of “verstehen” (understand) is on the second syllable. If the stress is not accurately grasped during performance, it will disrupt the rhythm and meter of the lyrics. In German grammar, the changes in gender, number, and case are extremely complex. However, in German song singing, there are no strict requirements for grammar; understanding is sufficient. But in terms of understanding the meaning and cultural connotations of lyrics, there are a large number of metaphors and symbols. In Schubert's art song “Die Forelle” (The Trout), although the song describes a trout, it actually expresses sympathy for the disadvantaged group, or it may be an aspiration for pure love, a warning for girls not to be tempted, or a criticism of the unscrupulous behaviors of some people in society and the complex and cruel social reality. In actual performance, language expression needs to be closely integrated with music. The language expression in German art songs is a sophisticated system of multiple integrations and interactions, jointly creating a heart-touching artistic realm.

## 3. Training and Cultivation of the IPA in German Art Song Singing

### 3.1 Learning and Memorizing Lyrics

Based on understanding the pronunciation characteristics and difficulties of German, special attention should be paid to distinguishing between long and short German vowels. When learning lyrics, carefully distinguish the characteristics according to the IPA annotations. Mr. Zhao Meibo said in “The Art of Singing”: “If we want to sing foreign songs perfectly, we must first pronounce foreign languages accurately.” After obtaining the lyrics of a German art song, first use the IPA to annotate each word in detail. For example, the lyrics “Der Mond scheint hell” are annotated as [de:v̥ mɔnt ʃaɪnt hɛl]. Then learn the pronunciation word by word, and repeatedly practice according to the pronunciation methods and positions indicated by the IPA, starting from the accurate pronunciation of a single syllable and gradually transitioning to the smooth pronunciation of a complete word.

Secondly, read the lyrics according to the IPA annotations. You can start with a slow reading, focusing on the accurate pronunciation of each phoneme, ensuring the purity and fullness of vowels and the clarity and speed of consonants. For example, when reading, grasp the vowel length, intensity, and consonant force according to the IPA. As proficiency increases, gradually accelerate the reading speed while maintaining the rhythm of the German language. Because the German language has a strong sense of rhythm, with clear and distinct pronunciation and prominent stress, use the IPA to accurately identify stress positions during reading. For example, in “Der Mond scheint hell,” the stress is on “Mond” and “hell.” Highlight these syllables according to the IPA stress symbols to form the correct language rhythm.

At the same time, deepen memory by combining work analysis and artistic imagination. When learning lyrics, conduct a comprehensive analysis of the song. Understand the creative background of the song. If it is a German art song from the romantic period, it may be full of emotional expression, and the meaning and emotional color of the lyrics will be related to it. Analyze the musical form structure to know the role of lyrics in different paragraphs. For example, the lyrics in the verse may be narrative, while those in the chorus are the sublimation of emotion. Study the mode, tonality, harmony color, and piano accompaniment and their influence on lyric expression. For example, in a major song, the lyrics may convey bright and positive emotions; while in a minor song, the lyrics may be more inclined towards melancholy and depth. Changes in harmony also affect the emotional atmosphere of the lyrics. Through such analysis, better understand the meaning of the lyrics and use the overall grasp of the song to assist in memorizing the lyrics.

Also, strengthen lyric learning through artistic imagination. Substitute yourself into the character in the song. For example, in a German art song depicting love, imagine yourself as the protagonist in love, follow the artistic conception of the lyrics and the flow of the melody, and feel the emotions of the protagonist in each scene. Through this “empathy” method, closely combine emotions with lyrics and strengthen the memory of lyrics while experiencing emotions. When we can truly experience the emotions expressed by the lyrics, the lyrics are no longer isolated word combinations but expressions with emotional colors and story scenes. This helps us interpret the lyrics more naturally during performance and also better remember the lyrics content.

### 3.2 Cultivation of Language Sense

In language learning, although many people have unconsciously cultivated an English language sense in years of English learning and can distinguish different English accents, for singing languages such as German, due to a lack of systematic education, the language sense is insufficiently cultivated. In the past, composers' considerations of language stress and

other factors when composing made our performances acceptable when we did not understand the 语言. However, in the context of the globalized vocal music market, Chinese singers face strong competitors whose native languages are German and other languages. The past self-deceiving vocal music standards are no longer sustainable, and we must face the gap in language ability. At the same time, currently, most people do not pay attention to language sense cultivation, and learning methods are mostly limited to imitating recordings, simple model readings, or mechanical readings, which are not conducive to the formation of a correct language sense. Cultivating language sense is more complex and time-consuming than learning foreign language pronunciation. Pronunciation is only a basic element of vocal music, like machine parts, while language sense is the key ability to construct and control the meaning and direction of language. Having a good language sense and language ability can improve aesthetic appreciation ability, enabling us to break through the primary stage of only focusing on sound appearance and understand the deep judgment basis of judges in international competitions because the aesthetic level is closely related to language sense.

For the cultivation of the language sense in German art song singing, the International Phonetic Alphabet (IPA) is an essential tool. The pronunciation rules of German are complex, and the IPA can accurately annotate the pronunciation of German words, assisting performers in precisely grasping the pronunciation characteristics of each syllable. Through learning the IPA, performers can understand the pronunciation positions, methods, vowel length, and intensity of German phonetics in more detail. For instance, German vowels are rich and diverse, with distinctions between long and short vowels, which can be clearly differentiated by the IPA. During the practice process, first, conduct a detailed pronunciation analysis of the lyrics with the help of the IPA, and then carry out reading exercises according to the rhythm and stress rules. Gradually progress from slow and accurate reading to proficient reading, and finally combine with music for performance. By continuously strengthening the language sense in practice, achieve a harmonious unity between musicality and language accuracy in singing, thereby enhancing the precision and fluency of pronunciation and laying a solid foundation for more infectious and professional performances.

### 3.3 Emotional Expression and Style Shaping

In the performance of German art songs, the International Phonetic Alphabet (IPA) is not only a guide for accurate pronunciation but also a powerful tool for emotional expression and style shaping. Firstly, vowels are the core carriers of emotion and occupy a central position in the emotional expression of German art songs. The IPA provides performers with an accurate blueprint for vowel pronunciation, enabling them to deeply explore the unique timbre characteristics and emotional associations of each vowel. For example, the [a] sound often conveys a sense of depth and solemnity. When performing songs that depict the earth, history, or profound emotions, the precisely pronounced [a] sound according to the IPA allows the audience to seemingly feel the profound connotations in the song. Elisabeth Schwarzkopf is an outstanding German soprano singer with extremely high achievements in opera and art song fields. Her interpretation of German art songs is delicate and infectious. When performing works by Richard Strauss, such as "Four Last Songs", she skillfully used the IPA to carve the pronunciation of lyrics. Taking the lyrics "Im Abendrot" as an example, for the vowel "a", according to the IPA, she could flexibly adjust its color. When depicting a peaceful and beautiful evening glow scene, she pronounced "a" more brightly and softly and extended the vowel pronunciation, making the sound as glorious and soothing as the glow. With the help of the IPA, performers can flexibly adjust vowels according to the emotional needs of the song. Eventually, they can exquisitely display the subtle changes of emotions in German art song performances and construct rich and three-dimensional emotional hierarchies.

Secondly, consonants are the rhythmic embellishments of emotion. Although vowels are the key to emotional expression, consonants cannot be ignored either. In German art songs, the pronunciation characteristics of consonants are also closely related to emotion and style. For example, in some slow lyrical songs, the pronunciation of consonants should be relatively gentle and continuous, avoiding overly abrupt plosives or frictions to prevent destroying the overall emotional atmosphere. In songs that express peaceful nights and tender love, the air flow intensity of the [s] sound can be appropriately weakened, making it more like a gentle breeze. In works that express firm and powerful emotions, the clarity and intensity of consonant pronunciation need to be enhanced. In songs that depict heroism and battle scenes, plosive consonants such as [t] and [k] should be pronounced crisply and neatly, making each note full of strength and determination, like a resounding war drum that stirs people's hearts. At the same time, the pronunciation rhythm of consonants can also enhance the song style. In some songs with a dance rhythm, the rapid alternation of consonants in coordination with the rhythm can create a lively and cheerful atmosphere. In works that represent folk festival celebrations, the ingenious use of consonants such as [p] and [b] can enhance the sense of rhythm, making the audience can't help but dance along.

During the learning process of German art song performance, learners can select fragments with rich emotional expressions for targeted practice. Firstly, deeply analyze the emotional context of the song to determine the emotional qualities that each paragraph and each line of lyrics need to convey. Then, carefully adjust the pronunciation methods of each phoneme according to the IPA. For parts with mild emotions, such as when expressing longing and attachment, appropriately extend the vowel pronunciation and make the timbre tend to be soft, while keeping the consonant pronunciation gentle. In the climax parts with strong emotions, such as when expressing anger and ecstasy, not only strengthen the tension of vowels but also increase the strength and clarity of consonants, making emotions burst out like a surging tide. Taking the first song in Strauss's Op.48 suite as an example, in the sentence "Nicht im Schläfe hab ich das geträumt", the pronunciation of "Schläfe" is [ʃla:fə], where the vowel [a:] is elongated and corresponds to the dotted note on the score. This detail implies a sense of melancholy and depth. After performers 敏锐捕捉到 this information according to the IPA, they can precisely control the vowel pronunciation during performance to delicately convey this

melancholy emotion to the audience. At the same time, if there is a need for changes in consonant pronunciation in the song, such as in subsequent cheerful paragraphs, some consonant pronunciations can be accelerated and made more elastic to match the overall emotional transformation and style shaping. To ensure the clarity and accuracy of emotional transmission, learners need to practice repeatedly and record their performances with recording equipment. By listening back to the recordings and comparing them with the IPA standards, self-evaluate whether the pronunciation is accurate, whether the emotional expression is in place, and whether the rhythm is harmonious. After discovering problems, make targeted adjustments and optimizations to continuously improve the performance. For example, if it is found that a certain vowel pronunciation is not full enough, resulting in a relatively pale emotional expression, practice the pronunciation position and oral shape of this vowel again according to the IPA until the ideal effect is achieved. The IPA plays an irreplaceable important role in the emotional expression and style shaping of German art song performance. It enables performers to deeply excavate the emotional connotations of works and accurately display emotions and styles through sound, thus bringing the audience a more infectious and artistic musical experience and promoting the art of German art song performance to a higher realm.

## Conclusion

This paper has analyzed the application effects of the International Phonetic Alphabet in the training of German art song singing, and clarified its significant roles in enhancing pronunciation accuracy, optimizing lyric processing, and strengthening emotional expression. Through precise pronunciation annotations, the IPA helps learners overcome difficulties in German pronunciation and reach a higher level in the accurate expression of phonemes and the emotional conveyance of lyrics. The application of the IPA has important guiding significance for the learning and teaching of German art songs. However, there are still deficiencies in current research. For example, the specific effects of the IPA in handling complex syllables need further verification, and the teaching promotion methods lack unified norms. Future research can focus on the universality of the IPA in multi-language singing and develop intelligent teaching tools with the help of technologies such as artificial intelligence to optimize the practical application effects of the IPA and provide more comprehensive support for vocal music education.

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