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Between Speech & Song: Clarifying the *Sprechstimme* of Schoenberg's *Pierrot lunaire*

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BETWEEN SPEECH & SONG: CLARIFYING THE *SPRECHSTIMME* OF SCHOENBERG'S *PIERROT LUNAIRE*

by

SARA MARGARET PAAR

A dissertation submitted to the Graduate Faculty in Music in partial fulfillment of the requirements for the degree of Doctoral of Musical Arts, The City University of New York.

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This manuscript has been read and accepted for the
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requirement for the degree of Doctor of Musical Arts.

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THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

Between Speech & Song: Clarifying the *Sprechstimme* of Schoenberg's *Pierrot lunaire*

by

Sara Margaret Paar

Advisor: Joseph N. Straus

Since its creation, the technique of *Sprechstimme* has fascinated the audiences, performers, and composers of twentieth century music. What is it? How is it done? How should it be notated? At the fore of investigations into these questions has been Arnold Schoenberg's *Pierrot lunaire*, the work in which Schoenberg debuted this new technique. Much has been written in regard to Schoenberg's creation and use of *Sprechstimme*, as well as his own exploration of the speech/song continuum. Composers, conductors, and performers have all tried to make sense of the notation, instructions, and performances Schoenberg left behind. Despite this, confusion, doubt, and dissatisfaction have continued to reign.

Recent research into music and language by the cognitive science fields has begun to shed light on some of the questions plaguing *Sprechstimme*. With this research, I set forth to clarify how to perform *Sprechstimme* by showing that the best interpretation of *Pierrot lunaire* is one that is sung on pitch with a speech-like timbre. I will establish support for this in two ways. First, a demonstration of the importance of pitch within the vocal line by calling attention to salient structural features, especially inversional symmetry, through a thorough musical analysis of *Pierrot lunaire.* Second, a review of recent neurological studies that suggest a cognitive dissociation of speaking and singing most likely at the level of fine-grained pitch, revealing that no speech/song continuum exists and that *Sprechstimme* must be performed with either speaking or singing. In addition, I will provide a practical performer's guide to *Sprechstimme* that

considers this current research, the current trends in vocal pedagogy, as well as my own personal experience with preparing *Pierrot lunaire*. Abiding by the suggestions in the guide will help performers of *Pierrot lunaire* and other works establish a speech-like singing technique that will allow them to respect the instructions Schoenberg provided for *Sprechstimme*, as well as the manner in which he composed *Pierrot lunaire*. In the end, readers will have a better understanding of what the voice is physically and cognitively able to do and how to create an exciting and musical interpretation of *Pierrot lunaire*.

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And finally, to my students, for whom I learn everything, thank you. I dedicate this dissertation to all of you – past, present, and future – for you entrust your voices to me never realizing that your trust makes me whole. May we, in the words of Schoenberg, endlessly commit ourselves to searching.

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That speech can be melodic and singing can be declamatory has been of interest to the human race for at least as far back as the Greek theater, where it is assumed the chorus performed with some form of rhythmic, melodic speech. Throughout history, this concept has been continually revisited, most conspicuously at the birth of opera and again in the late nineteenth and early twentieth centuries, beginning with Richard Wagner, followed by Englebert Humperdinck, and continuing with Arnold Schoenberg. Attempts to integrate speech and song resulted in a variety of terms: *recitative, parlando, singsong, Sprechgesang, Sprechmelodie, Sprechstimme,* and so forth. Regardless of the term, speaking and singing were understood as the extremes of a vocal continuum between which a performer might roam.

While *recitative* and *parlando* came to imply a kind of vocalization that was more sung than spoken, *Sprechmelodie* or *Sprechstimme* never settled comfortably into the more spoken than sung camp. Because of this, composers, conductors, and performers constantly revisited the technique of *Sprechstimme* with the hopes of determining exactly what it is and how it is done. Central to their search has always been Schoenberg's *Pierrot lunaire*, the most prominent of all *Sprechstimme* compositions. Schoenberg's notation, instructions – both published and private – and performances of the work have all been endlessly scrutinized. Unfortunately, in the one hundred plus years since Schoenberg wrote this work, a collectively agreed upon performance practice was never established.

In recent years, modern cognitive sciences have taken up the music-language relationship with the hope of revealing neurological similarities between them. It is now possible to learn whether speaking and singing function in such a way that allows for fluidity between their

systems. It is with this knowledge, grounded in recent research in the fields of physiology and neurology, that this dissertation sets out to accomplish the following three goals: 1) to explore critically Schoenberg's intentions; 2) to clarify the neurology behind speaking and singing; and 3) to provide a practical performer's guide to *Sprechstimme*.

Sprechstimme's Origins

The genre of melodrama, in vogue in the late 1800s, paired spoken text with music. Jean-Jacques Rousseau created the genre in the mid-1700s with a setting of his *Pygmalion.*[1] The genre flourished and waned before its resurgence in the late nineteenth century. The notation was such that the text was written above the music and these two elements were executed either in alternation (the traditional manner) or simultaneously (the Late-Romantic trend) (Fig. 1.1).[2] Popular examples of melodrama can be found in opera, Beethoven's *Fidelio* and Weber's *Der Freischütz* among the most notable, works of mixed genre, such as Schumann's *Manfred* Op.115, as well as stand-alone compositions such as Schubert's *Abschied von der Erde*, *Lenore* by Lizst, *Enoch Arden* by Strauss, and *Bergliot* by Grieg.

The timing of the declamation was never an issue when the music and text alternated. However, with the experimentation of simultaneous execution, the timing of the declamation with the music was occasionally problematic, especially if the composer was working with a non-musical actor. Composers sought to remedy this issue by occasionally inserting vamps, consisting of a measure or two of music that could be repeated until the speaker and the music

[1] Edward F. Kravitt, "The Joining of Words and Music in Late Romantic Melodrama," *The Musical Quarterly* 62, no. 4 (1976): 571.
[2] Ibid., 573.

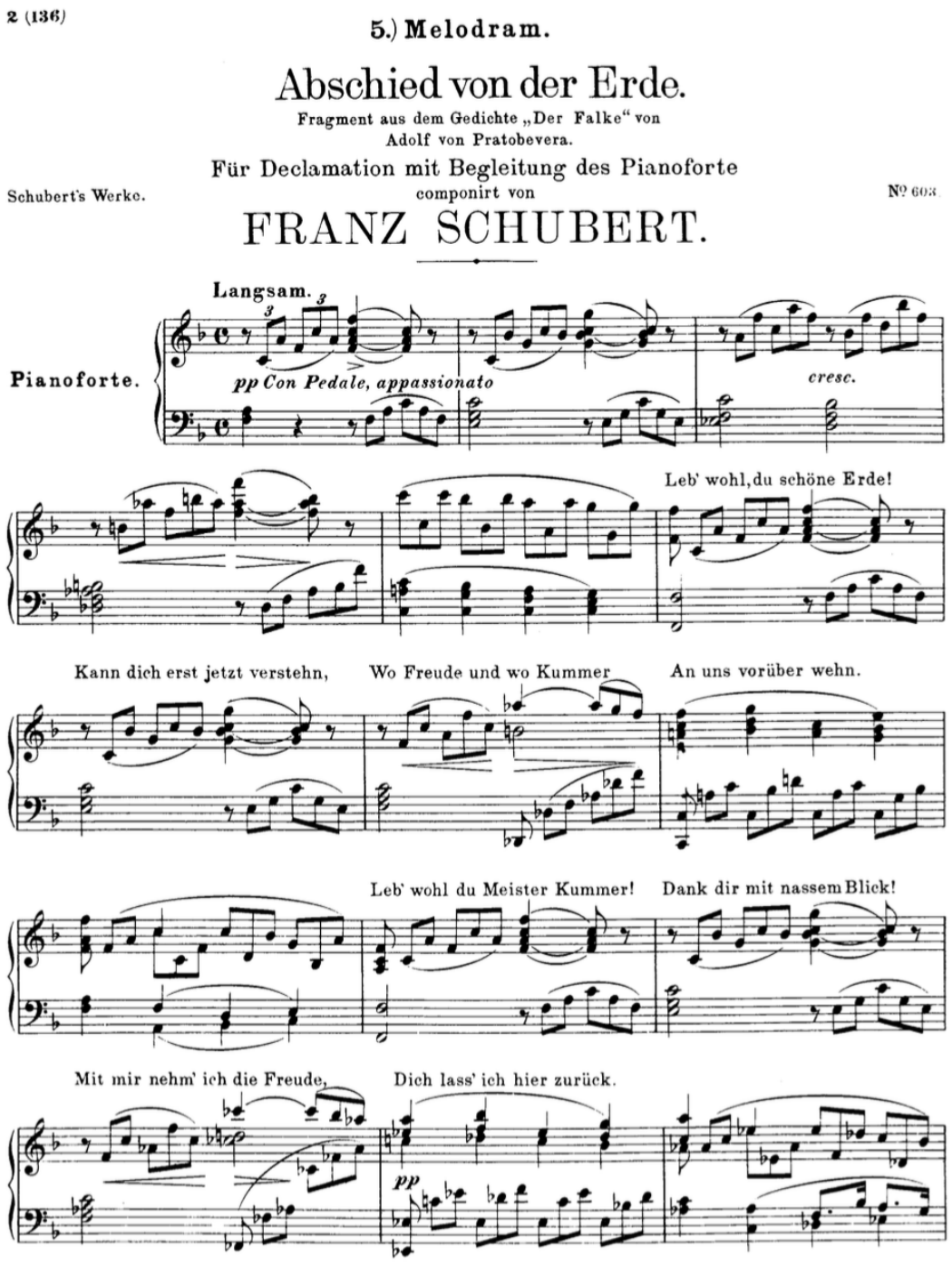

Fig. 1.1 An example of melodrama. The first page of Schubert's *Abschied von der Erde* composed in 1826. The text is spoken with dramatic intent in conjunction with the piano part. Source: Franz Schubert, "Abschied von der Erde," *Franz Schubert's Werke, Serie XX: Sämtliche Lieder und Gesänge, No. 603* (Leipzig: Breitkopf & Härtel, 1894-95).

were once more aligned, or by inserting rhythmic notation, by way of stems with flags, above the text. The melodramas that used rhythmic notation, including Englebert Humperdinck's *Königskinder* discussed below, are often referred to as *gebundenes Melodram*, or "bound melodrama," because of the precise rhythm employed.[3] One of the most famous melodramas of this kind was Max von Schillings' *Das Hexenlied* (Fig. 1.2). Strauss and Schillings, who often performed their own works, are also noted for adopting a manner of playing or conducting that was more free, with liberal use of rubato to allow the speaker to be as expressive as possible.[4]

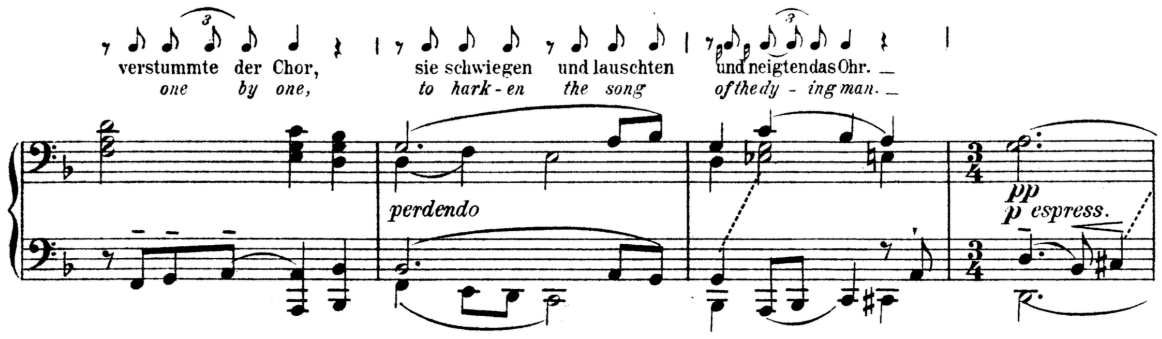

Fig. 1.2 An example of *gebundenes Melodram* from Schilling's *Das Hexenlied*, mm. 129-132. Source: Max von Schillings, *Das Hexenlied*, Op. 15 (Leipzig: Rob. Forberg, 1905), 9.

Melodrama proved to be the ideal genre for exploring the speech-song dynamic, as Englebert Humperdinck recognized early on; acknowledging that a more speech-like vocal production could aid the then current goal of realism in opera:

> Our modern opera is taking a path that *must* lead to the melodrama. With the dominant endeavors of our time, which no one can avoid, to bring reality to the stage, one must find a form that is suitable to this trend, and in my opinion the melodrama is that form.[5]

[3] Kravitt, "The Joining of Words and Music in Late Romantic Melodrama," 575.
[4] Ibid., 574, 588.
[5] Engelbert Humperdinck to a Dr. Distl, 2 November 1898, quoted in Edward F. Kravitt, *The Lied: Mirror of Late Romanticism* (New Haven: Yale University Press, 1996), 87.

Humperdinck's attempt towards the creation of a speech-song vocal technique, however, was not through opera, but through melodrama itself. *Königskinder*, an opera that premiered in 1910, was initially realized as incidental music for a play by the same name with text by Ernst Rosmer, a pseudonym for Else Bernstein-Porges, in 1897. The author would not allow the material to be expanded to an opera, at least not until 1907, so Humperdinck turned to the genre of melodrama, but with a twist. He decided to notate the pitch and rhythm of the text with x-ed noteheads on a full staff, calling it *Sprechnoten*, or speaking-notes (Fig. 1.3). He wrote, "[the *Sprechnoten*] are used for the purpose of indicating the rhythm and inflection of intensified speech (the melody of the spoken verse) and for placing these passages in agreement with the accompanying music."[6] These instructions, however, did not clearly convey Humperdinck's intentions and conflict ensued when the actors, who successfully spoke the rhythm, failed to precisely match the pitch, as he desired. In addition, the musicians complained that the inaccuracy of pitch disrupted their tuning, and the critics criticized the technique as "unaesthetic, tasteless and absurd."[7] In short, it ended up being a mess.

What served as Humperdinck's inspiration for this *Sprechnoten*, though? What made him decide that the speaking voice could speak on specified pitches within a large range? The answer to this may lie in the performances of melodrama he heard by some of the most revered speakers of his time. A recording of *Das Hexenlied* made in 1933 by composer Schillings and speaker Ludwig Wüllner (1858-1938), one of the most important actors of his time, provides

[6] Englebert Humperdinck, *Königskinder*, *Klavierauszug* (Leipzig: Max Brockhaus, [1897]), quoted in Kravitt, "The Joining of Words and Music in Late Romantic Melodrama," 577.
[7] Robert Hirschfeld, *Wiener Abendpost*, 11 May 1896, quoted and translated in Sandra McColl, *Music Criticism in Vienna, 1896-1897: Critically Moving Forms*, Oxford Monographs on Music (Oxford: Clarendon Press, 1996), 217.

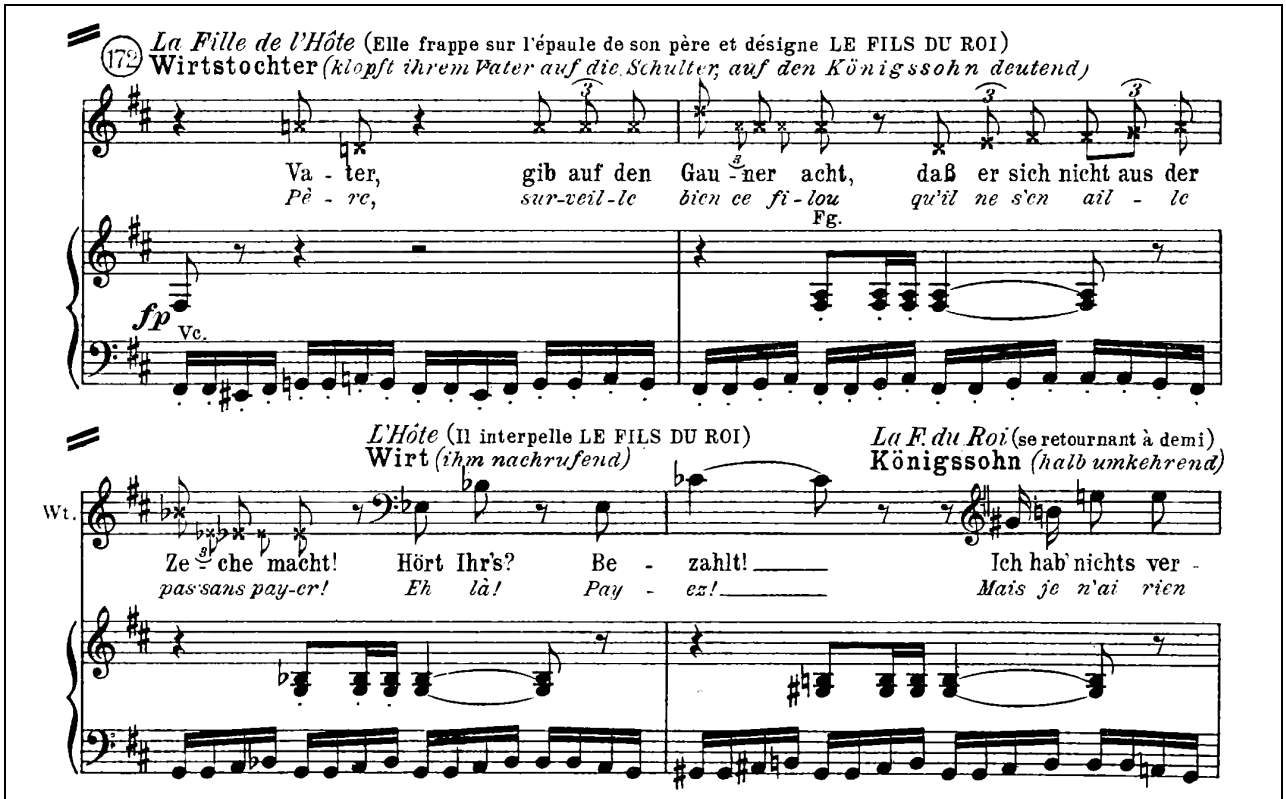

Fig. 1.3 An example of Humperdinck's *Sprechnoten* in *Königskinder*. This particular example was retained when Humperdinck revised the melodrama into an opera. Source: Englebert Humperdinck, *Königskinder* (Leipzig: Max Brockhaus, 1910), 202.

some insight into the stylistic characteristics that pervaded melodrama performances of the Late-Romantic era.[8] In this recording, the degree of vocal diversity these speakers employed in their goal of an expressive reading is evident.[9] Wüllner used everything from an almost monochromatic, or colorless, speech to highly inflected speech and even singing, none of

[8] Max von Schillings, *Das Hexenlied*, with Ludwig Wüllner (speaker) and Berlin Philharmonic, conducted by Schillings, recorded in 1933, Jube Classic, Jube-NML 1291, audio file.

[9] Kravitt, "The Joining of Words and Music in Late Romantic Melodrama," 579. Both Ludwig Wüllner and Ernst von Possart were heralded for their performances in melodrama. Possart was the speaker of choice for Strauss. They performed Strauss' *Enoch Arden* in a number of cities. One critic is recorded as saying, "The melodrama has undeniably received fresh impetus in the recent past as a result of gifted artists such as Ludwig Wüllner and Ernst von Possart." August Richard, *Max Shillings* (Munich, 1922), 23, quoted in Kravitt, "The Joining of Words and Music in Late Romantic Melodrama," 583.

which was notated in the score. In some moments, the transition from inflected speech and singing was instantaneous and momentary; just enough for the listener to grasp the frequency of a pitch before Wüllner transitioned back to speech. In more extended moments of singing, Wüllner would sing with one of the instrumental lines or create his own melodic line in harmony with the orchestration.

If the pitch use and range of inflection exhibited in Wüllner's performance was truly indicative of the performance trends of the times, it is clear why Humperdinck thought he could precisely notate the inflections and pitches he would have liked to hear in *Königskinder*. What Wüllner did vocally, however, was of his own choosing and not dictated by Schillings. Humperdinck's reversal of this proved problematic.

Schoenberg's Initial Foray into *Sprechstimme*

Despite the mess Humperdinck found himself in, other composers were not deterred from attempting to include his *Sprechnoten* notation in their own music. X-ed noteheads on full staff were used by two other composers at this time: Ludwig Thuille in *Lobetanz* and Arnold Schoenberg in *Gurre-Lieder*. While it has not been proven that Schoenberg knew *Königskinder*, there seems to be little likelihood that he could have missed the controversy over Humperdinck's *Sprechnoten*, and his use of identical notation may act as evidence.[10]

Gurre-Lieder, which can best be described as a hybrid of oratorio and cantata, was begun in 1900, worked on consistently until 1903, when Schoenberg took a break, ultimately completing the orchestration in 1911. It bears the Late-Romantic style of Schoenberg's early works even though it was not premiered until February 1913, several months after the premiere

[10] Phyllis Bryn-Julson and Paul Mathews, *Inside Pierrot lunaire: Performing the Sprechstimme in Schoenberg's Masterpiece* (Lanham, MD: The Scarecrow Press, Inc., 2009), 5.

of *Pierrot lunaire*. The vocal music that makes up the bulk of *Gurre-Lieder* is written in a traditional Lied style, though the penultimate section, "Herr Gänsefuß, Frau Gänsekraut" (Part III, No. 9), is labeled as a melodrama and uses the x-ed noteheads of Humperdinck's *Königskinder* (Fig. 1.4). Interestingly, the original score did not contain any directions as to how the *Sprechstimme* was to be performed. Perhaps Schoenberg thought the label of *Melodram* would suffice. Later, however, Berg asked for clarification as he was coaching the speaker for the premiere. This was Schoenberg's reply:

> Regarding the melodramas in the *Gurre-Lieder*: pitch is by no means to be taken as literally here as in the *Pierrot* [*lunaire*] melodramas. By no means should a similar songlike *Sprechmelodie* be created here. It is important that (depending on the accompaniment) rhythm and dynamics be maintained throughout. In a few passages where it's almost melodic, one could speak in a *somewhat* (!!) more musical manner. The pitches are to be regarded only as "registral differences"; i.e., the particular passage (!!! not the individual note) is to be spoken higher or lower as the case may be. But not intervallic proportions![11]

Schoenberg, having written this after the premiere performance of *Pierrot lunaire*, had an idea of what worked and what did not work. Whether he had these particular directions in mind when he wrote *Gurre-Lieder* is uncertain. Regardless, it appears he is asking for the *Gurre-Lieder* speaker to pay attention to the pitches indicated by the x-ed noteheads only insomuch as they indicate contour. The only moments where pitch should be taken somewhat literally is when the pitch content is more melodic. Then, Schoenberg expected more pitch variance in the speech, but not, necessarily, the exact pitches indicated in the score. What is interesting is that at times, the *Sprechnoten* used by Schoenberg corresponds harmonically with the orchestra and even, as can be seen in m. 3 of Figure 1.4, occasionally doubles an instrument in the orchestra. Perhaps

[11] Juliane Brand, Donald Harris, and Christopher Hailey, ed. and trans., *The Berg-Schoenberg Correspondence: Selected Letters* (New York: W. W. Norton, 1987), 143.

because of the letter between Schoenberg and Berg, it has become tradition, however, for speakers to rarely try to match the pitches indicated by Schoenberg in the score.

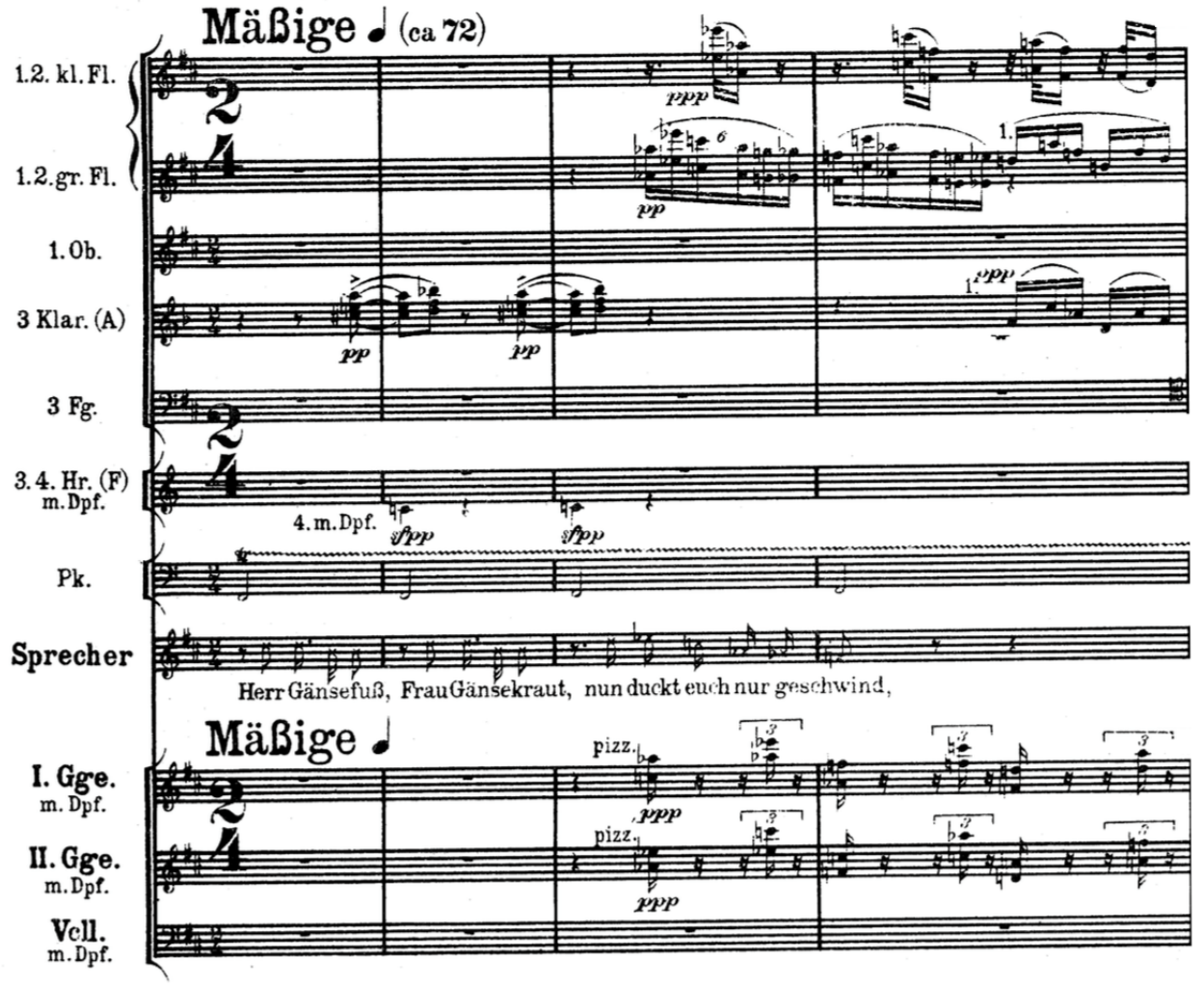

Fig. 1.4 An example from Schoenberg's *Gurre-Lieder*, mm. 1-4 of "Herr Gänsefuß, Frau Gänsekraut" (Part III, No. 9). Source: Arnold Schoenberg, *Gurre-Lieder* (Vienna: Universal Edition, 1920; reprint, Los Angeles: Belmont Music Publishers, 1948), 164.

While Humperdinck's *Königskinder* was considered a failure, *Gurre-Lieder* was met with accolades. Was this because the melodrama was embedded within a larger work, making it a more difficult entity on which to focus? Was there something about the music that made the dissonance created between the orchestra and the vocal part less noticeable? Perhaps it was the

delivery? Regardless, the success of *Gurre-Lieder* coupled with the world's budding fascination with *Pierrot lunaire*, guaranteed that Schoenberg's experimentation with *Sprechstimme* was just beginning.

The *Sprechstimme* of *Pierrot lunaire*

Albertine Zehme, an actress-turned socialite-turned classical singer, commissioned *Pierrot lunaire* from Schoenberg in the early spring of 1912, after the orchestration for *Gurre-Lieder* had been completed, but before Schoenberg had a chance to premiere it. *Pierrot lunaire* was to be a song cycle that took advantage of Zehme's unique style of recitation. In a short text titled "Why I Must Speak These Songs," Zehme speaks out against the trend of only creating beautiful sounds.[12] Instead, she says, "we must have unrestricted freedom of tone. Emotional expression should not be denied any of the thousands of oscillations…To communicate, our poets and our composers need both singing as well as the spoken tone." Having heard the works of Schoenberg and discussed with him her philosophy, she was sure she had found a kindred collaborator. And, indeed, she had, for the *Sprechstimme* of *Pierrot lunaire* was much more elaborate than the melodramas that had been written previously, most likely because Zehme continued to push Schoenberg to take full advantage of her musical and theatrical abilities.

Whereas *Königskinder* and *Gurre-Lieder* were fundamentally tonal, *Pierrot lunaire* was written in Schoenberg's newly developed atonal language. This new language is evident in the *Sprechstimme* of *Pierrot lunaire* in Schoenberg's use of an abnormally large range, asking the reciter to speak (and occasionally sing) within a range of two and a half octaves; in his use of highly chromatic melodies in which he frequently asks the reciter to be able to discriminate

[12] Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 34-35.

spoken pitches to the half step; and in his frequent use of large leaps, demanding the reciter to occasionally execute leaps of over an octave in the space of a single, quick moving sixteenth note. It cannot be denied that what Schoenberg envisioned had never been asked of a speaker or singer previously. It demanded, as Zehme had hoped, an unrestricted freedom of tone, fully committed to the story and the emotional life of the characters.

Schoenberg's initial manuscripts for *Pierrot lunaire* used the x-ed noteheads of *Gurre-Lieder*.[13] Additionally, the reciter's part in these early manuscripts is found above the instrumental parts, similar to how the melodramas of the past had been notated. Why the notation and positioning changed for the final printed version is unknown. It is speculated that the notation change from x-ed noteheads to x-ed stems may have been for greater ease in deciphering rhythm and pitch.[14] In the original manuscripts, Schoenberg would notate longer note values with two x's or a diamond shape or even with a regular notehead with an x through the head. None of these options was particularly legible and so a search for a less effortful notation certainly makes sense. The clearer indication of pitch may have just been a byproduct of this new notation, or it may have been an indication of the more prominent position pitch was to play in this new style of *Sprechstimme*.

In the final printed score, the placement of the reciter's line moved from above the instrumental parts to below the strings and woodwinds, but above the piano. This new placement allowed for the better integration of the *Sprechstimme* into the ensemble, something Rudolf

---

[13] The first complete autograph score is held at the Library of Congress and the fair copy, or printer's copy, is kept at the Morgan Library. In one early sketch of melodrama No. 8, "Nacht," viewable at the Arnold Schönberg Center's online archives, Schoenberg used traditional notation for the *Sprechstimme* line.

[14] Aidan Soder, *Sprechstimme in Arnold Schoenberg's Pierrot Lunaire: A Study of Vocal Performance Practice*, preface by Walter B. Bailey (Lewiston, NY: The Edwin Mellen Press, 2008), 8.

Kolisch, Schoenberg's brother-in-law, mentioned was important to Schoenberg in an interview with Joan Allen Smith: "…the speaking voice was equivalent to any other instrument…[it] ought to be one of the voices and not a solo with accompaniment."[15] Events within the score suggested this new equivalence, as well: the placement of the *Hauptstimme* and *Nebenstimme* within the instrumental parts and the direction in melodrama No. 4, "Eine blasse Wäscherin," asking the *Sprechstimme* to accompany the instruments.

These adjustments to the notation of *Sprechstimme* create a contradiction in terms of the role of the reciter within the work of *Pierrot lunaire*. The modification of the pitch and rhythm notation suggests that the reciter is taking on a more active role musically: not only does she have the greatest responsibility over the storytelling element of the melodrama, but now she contributes to the non-verbal element of that storytelling. The shift in the *Sprechstimme's* placement, however, suggests that the reciter's part is not to take priority over the contributions of the other ensemble members; they are to be equals. This is the first balancing act the reciter must manage while executing *Pierrot lunaire*, the second, of course, being Schoenberg's request for a balance of speech and song.

Unlike *Gurre-Lieder*, Schoenberg did attempt to create instructions that more clearly elucidated what he had in mind for the execution of his *Sprechmelodie*, as he called it, or *Sprechstimme*. Perhaps assuming that he and Zehme were on the same page, Schoenberg's initial instruction amounted to little more than a footnote to the first melodrama he composed, melodrama No. 9, "Gebet an Pierrot:" "The reciting voice must project the pitch in an indirect

[15] Joan Allen Smith, "Schoenberg's Way," *Perspectives of New Music* 18, no. 1/2 (1979): 277-278.

way."[16] Something within the rehearsal process, however, proved to Schoenberg that these instructions were not enough, and so he sought a better way to explain what it was he was hoping to hear from his reciters. What Schoenberg created became the famous preface:

> The melody given in the *Sprechstimme* by means of notes is not intended for singing (except for specially marked isolated exceptions). The task of the performer is to transform it into a *Sprechmelodie*, taking into account the given pitch. This is achieved by:
>
> > I. Maintaining the rhythm as accurately as if one were singing,
> > i.e. with no more freedom than would be allowed with a singing melody;
> >
> > II. Becoming acutely aware of the difference between singing tone and speaking tone: singing tone unalterably stays on pitch, whereas speaking tone gives the pitch but immediately leaves it again by falling and rising. However, the performer must be very careful not to adopt a singsong speech pattern. That is not intended at all. Nor should one strive for realistic, natural speech. On the contrary, the difference between ordinary speaking and speaking that contributes to a musical form should become quite obvious. But it must never be reminiscent of singing.
>
> Moreover, I stress the following concerning performances:
>
> > It is never the task of performers to recreate the mood and character of the individual pieces on the basis of the meaning of the words, but rather solely on the basis of the music. The extent to which the tone-painting-like rendering of the events and emotions of the text was important to the author is already found in the music. Where the performer finds it lacking,

[16] Arnold Schoenberg, *Verklärte Nacht and Pierrot Lunaire* (New York: Dover, 1994): 87. "Die *Rezitation hat die Tonhöhe andeufungsweise zu bringen*." This sentence bears some resemblance to another sentence Schoenberg used as header for "Die Beiden," a song he wrote in 1899: *weniger gesungen, als deklamierend, beschreibend vorzutragen; wie von einem alten Bilde herablesend*. ("less sung than declaimed, descriptive narration, like a lecture about an old painting." Bryn-Julson and Mathews, *Inside Pierrot lunaire,* 6.) While "Die Beiden" uses traditional notation rather than x-ed noteheads, it does confirm that Schoenberg had been considering this speech-song technique for a while. In addition, the lecture comment recalls a story that says Schoenberg told Zehme to recite "Die Kreuze" as if she were a life insurance salesman. Apparently, there was something in a monotone delivery that Schoenberg hoped his speakers would pick up on, however one would think that a monotone delivery was the exact opposite of what Schoenberg was looking for from his performers.

> he should abstain from presenting something that was not intended by the author. He would not be adding, but rather detracting.[17]

It is in these instructions that Schoenberg sets up the questions that were to plague performers of *Pierrot lunaire* until this present day. *Sprechstimme* is not to be singing, but melodic speech. It must be rhythmic like singing, however, and should take into account the given pitches. It is to be, as many have defined it, halfway between speaking and singing, but is that even possible? Later, as his students tried to clarify Schoenberg's desires for the *Sprechstimme* technique, Schoenberg's responses only made the concept even more enigmatic, as he seemingly continued to vascillate between wanting and not wanting the exact pitches, even adding, by the end of his life, statements that imply pitch did not matter at all.[18] This has left many with the question: what did Schoenberg want? And, ultimately, can what Schoenberg wanted be achieved?

What Schoenberg Wanted as Determined by Others

[17] Arnold Schoenberg, *Pierrot lunaire*, op. 21 (Los Angeles: Belmont Music Publishers, 1990), Preface.

[18] Peter Stadlen quotes a letter between Schoenberg and Hans Rosbaud from 15 February 1949 in which Schoenberg writes that the reciter in *Pierrot lunaire* "never sings the theme, but, at most, speaks against it, while the themes (and everything else of musical importance) happen in the instruments" ("Schoenberg's Speech-Song," *Music and Letters* 62, no. 1 (1981): 7). In an unpublished letter between Schoenberg and Edwin Stein dated 25 December 1941, Schoenberg says this in regard to a recording made in September 1940: "They are to a great part quite good, though Mrs. Stiedry is never in pitch and several pieces are not very well recorded." (Avior Byron and Matthias Pasdzierny, "Sprechstimme Reconsidered Once Again: '. . . though Mrs. Stiedry is never in pitch'," *Music Theory Online* 13, no. 2 (2007), http://mto.societymusictheory.org/issues/mto.07.13.2/mto.07.13.2.byron_pasdzierny.html.) Additionally, Avior Byron quotes a letter between Schoenberg and Daniel Ruyneman from 29 July 1949 in which Schoenberg wrote, "none of these poems is determined to be sung, but rather they must be spoken without fixed pitch." (Avior Byron, "The Test Pressings of Schoenberg Conducting *Pierrot lunaire*: Sprechstimme Reconsidered," *Music Theory Online* 12, no. 1 (2006), http://mto.societymusictheory.org/issues/mto.06.12.1/mto.06.12.1.byron.html.)

Many have tried to determine what Schoenberg wanted by sifting through letters and documents by Schoenberg, renowned performers of the technique, and others involved in some way with the early interpretations of *Pierrot lunaire*. The contradictory remarks made by Schoenberg throughout his life, as well as the inconsistent interpretations created of the work, however, allow researchers to selectively choose quotes and renditions that corroborate their own bias. Because of this, it is easy to see why any attempt to clarify the technique has run up against opposition.

Peter Stadlen's article "Schoenberg's Speech-Song," highlights the contradictions evident in the instructions Schoenberg provided both in the preface and within the score itself, in addition to the comments he made to students who were assisting with coaching, performers, and so forth. Backed by evidence from researchers in phonetics and linguistics, Stadlen argues that attempts to speak the *Sprechstimme* were never successful because listeners hear an "average pitch" of all the pitches heard within one spoken tone.[19] Stadlen's comments regarding speaking and singing get to the heart of these contradictions and he is the only writer to offer a solution to these contradictions, but his solution is incomplete. Stadlen believes that the only way *Sprechstimme* could be executed is by singing sans vibrato and that, by eliminating vibrato, listeners would be able to hear the pitch as if spoken by the performer. He also says that sung interpretations are more authentic and more musical. An issue arises, however, when one considers that there are other styles of singing that advocate for no vibrato. Do those other styles

[19] Peter Stadlen, "Schoenberg's Speech-Song," 1. Aniruddh Patel suggests that a listener perceives all the pitches produced by a speaker, but that the ear tends to zero in on the pitch produced on the vowel. Moreover, it appears to be the final pitch of the continuous pitch movement that the ear tends to hear the strongest. Aniruddh D. Patel, *Music, Language, and the Brain* (New York: Oxford University Press, 2008), 185-190.

appear speech-like to the listener? While I believe vibrato-less singing is an important aspect of creating a speech-like singing technique, I do not believe it is the only facet that must change.

Lorraine Gorrell's article "Performing the Sprechstimme in Arnold Schoenberg's *Pierrot lunaire*, op. 21," is a concise assemblage of various accounts of *Sprechstimme* from diverse performers, artists, and composers, particularly those involved in the early years of *Pierrot lunaire*.[20] Without choosing one camp or the other, Gorrell argues that performers of the work needed to be thoroughly knowledgeable of the text and music, but should, in the end, consider creating an interpretation without regard for Schoenberg's desires, since that allows for additional insights into the work. As an example, she remarks how the interpretation of Yvonne Minton, who essentially sang the pitches of *Pierrot lunaire*, makes evident the canons written between the voice and viola and the voice and piccolo in melodrama No. 17, "Parodie," something that may not have been heard otherwise. Her perspective here, however, has me wondering whether such disregard of instruction and performance practice would be similarly praised if discussing interpretations of Bach, Mozart, or Strauss? While a certain amount of flexibility is always allowable, is it not the role of the performer to create an interpretation respectful of the composer's desires?

Avior Byron has written two articles that focus on the interpretation developed by Arnold Schoenberg and Erika Stiedry-Wagner, in which he speculates on why Schoenberg's thoughts on *Sprechstimme* seemed to change so frequently.[21] Using Schoenberg's letters, details from a 1940

[20] Lorraine Gorrell, "Performing the Sprechstimme in Arnold Schoenberg's *Pierrot lunaire*, op. 21," *The Journal of Singing* 55/2 (1998): 5-15.
[21] Avior Byron, "The Test Pressings of Schoenberg Conducting *Pierrot lunaire*: Sprechstimme Reconsidered," *Music Theory Online* 12, no. 1 (2006), http://mto.societymusictheory.org/issues/mto.06.12.1/mto.06.12.1.byron.html.

recording session of *Pierrot lunaire* with Schoenberg conducting and Stiedry-Wagner reciting, and recent performance studies theory, Byron attempts to clarify the "*Sprechstimme* enigma" by arguing that Schoenberg intended for there to be two different types of notation in *Pierrot lunaire*: the instrumental notation that was to be taken literally and the *Sprechstimme* notation that "[involved] a process of greater real-time interaction between performer and score."[22] Byron concludes that Schoenberg was ultimately less interested in the pitch indicated by the notation than he was in the performer's ability to express the music in the moment. This, like the Gorrell article, supposes that Schoenberg was open to more flexible interpretations of his works, at least in regard to the *Sprechstimme*. However, in a letter to singer Marya Freund on 16 August 1922, Schoenberg wrote,

> I am anxious to explain to you why I cannot allow any will but mine to prevail in realizing the musical thoughts that I have recorded on paper, and why realizing them must be done with deadly earnest, with such inexorable severity, because the composing was done just that way.[23]

This letter would seem to indicate that Schoenberg was not interested in a freer interpretation of the *Sprechstimme*. Byron's explanation for this letter is that Schoenberg was influenced by an anti-interpretation movement of the 1920s, a reaction against performers who had begun to interpret scores with great freedom. I would argue that Schoenberg had always been interested in having his scores performed accurately; this was not a momentary whim.

Aidan Soder's book, *Sprechstimme in Arnold Schoenberg's Pierrot Lunaire: A Study of Vocal Performance Practice*, is a comparative study of four of the *Pierrot lunaire* melodramas as

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Avior Byron and Matthias Pasdzierny, "Sprechstimme Reconsidered Once Again: '. . . though Mrs. Stiedry is never in pitch'," *Music Theory Online* 13, no. 2 (2007), http://mto.societymusictheory.org/issues/mto.07.13.2/mto.07.13.2.byron_pasdzierny.html.

[22] Byron, "The Test Pressings of Schoenberg Conducting *Pierrot lunaire*: Sprechstimme Reconsidered," n.p.

[23] Arnold Schoenberg, *Letters*, ed. Erwin Stein, trans. Eithne Wilkins and Ernst Kaiser (London: Faber and Faber, 1964), 74.

performed by five different celebrated performers of *Pierrot lunaire*.[24] It looks at stylistic differences, weighing the effectiveness of each interpretation and the degree to which they met, in her eyes, what Schoenberg intended. Soder also consolidated information regarding the performances by early interpreters, such as Albertine Zehme, Erika Stiedry-Wagner, Marie Gutheil-Schoder, and Marya Freund, created a style breakdown of various performers of the work, and compiled a complete discography. While Soder, a performer of *Pierrot lunaire*, mentions the contradictions evident in Schoenberg's instructions, she offers few critical solutions to the issues raised. She suggests, instead, that a performer must heed the instructions of the preface, study the score, use the sound recordings available, and work with another performer who has performed *Sprechstimme*, for "[it] is better taught and explained via oral tradition than by anything else."[25] While the study of any art form is best learned with the help of a teacher, one should be able to explain what makes up good singing or good acting or good art or good *Sprechstimme*. While Soder does a commendable job of highlighting the best interpretations of *Pierrot lunaire* available on recording, the shrouding of the technique in mystery does little to help a young performer find her way to an equally good interpretation.

The book by Phyllis Bryn-Julson and Paul Mathews titled *Inside Pierrot lunaire: Performing the Sprechstimme in Schoenberg's Masterpiece*, argues that pitch deserves more attention by those performing *Sprechstimme*.[26] This book includes an in-depth survey of the history of the technique, including the usage by Englebert Humperdinck, the background and contributions of Albertine Zehme, as well as a thorough look at Schoenberg's interest in the

[24] Aidan Soder, *Sprechstimme in Arnold Schoenberg's Pierrot Lunaire: A Study of Vocal Performance Practice*, preface by Walter B. Bailey (Lewiston, NY: The Edwin Mellen Press, 2008).
[25] Ibid., 30.
[26] Phyllis Bryn-Julson and Paul Mathews, *Inside Pierrot lunaire: Performing the Sprechstimme in Schoenberg's Masterpiece* (Lanham, MD: The Scarecrow Press, Inc., 2009).

sound of words within a poem and their effect on one's poetic interpretation. The book also thoroughly examines the poetry, both the original by Giraud and translation by Hartleben, before moving on to an examination and analysis of each melodrama. It is upon Mathews' musical analysis that they based their argument for a more pitch-accurate interpretation, demonstrating how musical motifs from the instrumental ensemble frequently appear in the *Sprechstimme*. As well-researched and thorough as this book is, Bryn-Julson does little to explain how to create a pitch-accurate performance. Like Soder, her suggestions are few and contradictory. She says, "the *Sprechstimme* can be transformed into pitched speaking," but then goes on to say that the sound produced "will give the impression of speech." How one speaks on pitch is never addressed.

Most recently, Joseph Smith looks at *Sprechstimme* by Schoenberg and Berg in all of its guises.[27] Reviewing letters and performance instructions by Schoenberg, Berg, and others, Smith creates a chart that summarizes what the composers wanted for each of their *Sprechstimme* works. Smith, a pianist, does not attempt to resolve the contradictions within the performance instructions, though he does recognize that some instructions were impossible to realize.

Sprechstimme Clarified

The time has come for all these questions and contradictions to be laid to rest. Stadlen's research into the linguistics and phonetics of speech was the first step towards understanding the differences between speaking and singing and why *Sprechstimme* is such a difficult technique to master. The next step is to determine the cognitive differences between speaking and singing. Pierre Boulez asked "whether it is actually possible to speak according to a notation devised for

[27] Joseph Smith, "Sprechstimme," *Journal of Singing-The Official Journal of the National Association of Teachers of Singing* 72, no. 5 (2016): 547-562.

singing," and, indeed, the cognitive research available today suggests that it is not possible.[28] The voice cannot give the pitch and then immediately fall away. While the ear of the listener may perceive the specific pitches spoken by a reciter, a reciter cannot consciously choose to speak on specific pitches. This, as will be seen, has nothing to do with the vocal apparatus producing the sound, but, rather, circuitry within the brain that determines whether the pitch production is to be coarse-grained (speech) or fine-grained (song).

If the voice cannot speak on specified pitches, then it would seem obvious that performers should abandon the attempt to match pitch altogether. In fact, in the past, music theorists have argued that the imprecise execution of these pitches warranted their disregard, despite the possibility that Schoenberg may have written those notes with the full expectation of hearing the pitch, albeit briefly or indirectly. However, recent analytical studies of Pierrot, and my own analysis, suggest that the pitch content of the *Sprechstimme* line often contributes to structures and motives within the instrumental lines. The discovery that Schoenberg may have intended for the voice of the reciter to contribute to the overall structure of *Pierrot lunaire* lends credence to the possibility that Schoenberg wanted the notated pitches to be heard.

In Chapter Two, I add to the body of analysis that exists for *Pierrot lunaire* by examining his use of inversional symmetry in the *Sprechstimme* and elsewhere within the melodramas, thus demonstrating, as others have with their own work, how *Pierrot lunaire* benefits from more accurate pitch. Like the use of recurring pitch class sets that create motives and harmonic colors that an audience member can hear and engage with, the use of inversional symmetry also creates an aural landscape that a listener may easily hear and grasp, increasing their ability to "navigate" within the work, while, simultaneously increasing their understanding (and, likely, their

[28] Pierre Boulez, "Speaking, Playing, Singing," *Orientations* (London: Faber and Faber, 1986), 332.

enjoyment) of the work. Whether the symmetry is heard as a wedge-like movement outwards from a central tone or the inverting of a particular contour around an axis point, the listener recognizes the symmetrical inversion much as one might recognize a sequence. If, however, the *Sprechstimme* is not executed precisely enough, these moments are lost and the listener assumes that the performed notes are random and of little importance, which could hardly be further from the truth.

In Chapter Three, I share the cognitive research that examines issues of speaking and singing in search of the neurological overlap and dissociation between these two tasks. Research in the fields of aphasia, dysphonia, amusia, absolute pitch, and tonal languages has significantly contributed to a growing understanding of the functioning of the brain. A look at this research suggests that the fine-grained pitch changes of music may be the dimension that separates speaking from singing. In general, this research provides a chance to clarify the relationship between speaking and singing for singers/performers, as well as for composers, giving insight into why *Sprechstimme* has been so difficult to understand and perform. Additionally, this clarification of the cognitive capabilities of speech and song will also prove helpful to voice teachers who specialize in other singing styles, namely musical theater and cabaret, where singers need to achieve a casual, speech-like singing production.

If the human voice cannot speak specific pitches as indicated by Schoenberg, but the pitches are relevant to the structure of *Pierrot lunaire*, then what is the solution? In Chapter Four, I provide a much-needed resource for the performer who is approaching *Pierrot lunaire* for the first time. While there are very good articles, books, and dissertations that address the concept of *Sprechstimme*, none go so far as to truly give the performer the tools to be successful at this technique, especially if one cares to respect the pitches Schoenberg wrote in the vocal line.

Central to the chapter are exercises that help the performer create a speech-like singing technique. This technique is characterized by a strong, flexible chest register, clear and efficient articulation throughout the singing range, as well as the ability to sing comfortably without vibrato. While successful performers of *Pierrot lunaire* have each found their own method for learning and performing the work, the exercises, discussions, and sound examples that make up the final chapter will serve as a starting point for developing a strong technique upon which a young performer may build a unique interpretation, not only of *Pierrot lunaire*, but of any work that utilizes the technique of *Sprechstimme*.

CHAPTER TWO
Symmetrical Inversion in the Sprechstimme of Pierrot lunaire

Analysis of Schoenberg's *Pierrot lunaire* is rewarding on a number of levels. The use of contrapuntal techniques such as canon, fugue, and passacaglia, as well as of traditional forms such as the trio sonata, waltz, and barcarolle, has been much discussed.[1] In addition, theorists have begun to analyze the work from a post-tonal perspective, creating and using analytical techniques with which to discuss Schoenberg's organization of pitch in this and other works from the free atonal period.[2] There are very few analyses, however, that extend their examination to include the *Sprechstimme*. Most argue that this is due to its usually imprecise execution. While valid, I believe this is a shallow argument. The fact that Schoenberg carefully set each syllable of the *Sprechstimme*, rather than simply write the text above the ensemble part or rhythmically notate the text with no indication of pitch, as was the trend with melodrama at the time,[3] should be reason alone to look closely at what Schoenberg put to paper. In addition, there are instances where the *Sprechstimme* is inextricably linked with the contrapuntal lines of the ensemble, whether it be as an active part of the canon in melodrama No. 17, "Parodie," or as a melodic line to be imitated later by the ensemble as in melodrama No.7, "Der kranke Mond." To analyze these moments without including the *Sprechstimme* because it may or may not be executed

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[1] Kathryn Bailey, "Formal Organization and Structural Imagery in Schoenberg's Pierrot Lunaire," *Studies in Music (University of Western Ontario)* 2 (1977): 93-107.
[2] David H. Smyth, "The Music of Pierrot Lunaire: An Analytic Approach," *Theory and Practice* (1980): 5-24. David Lewin, *Generalized musical intervals and transformations*, Oxford University Press, 2007. David Lewin, "Inversional Balance as an Organizing Force in Schoenberg's Music and Thought" *Perspectives of New Music* (1968): 1-21. Jeffrey L. Gillespie, "Motivic Transformations and Networks in Schoenberg's "Nacht" from "Pierrot Lunaire"," *Intégral* (1992): 34-65. Philip Lambert, "On contextual transformations," *Perspectives of New Music* (2000): 45-76.
[3] See Chapter One.

precisely does a disservice to the vision Schoenberg had for these pieces during the act of composing. He could not have known then that the reciters he encountered would have difficulty with what he wrote or that what he wrote would never be executed in a way that matched what he imagined in his head. It is my belief that a more comprehensive analysis of the music, one that includes the *Sprechstimme* will aid performers in creating more informed and evocative interpretations.

Included among the researchers who examine Schoenberg's free atonal works from a post-tonal perspective are theorists who have shown the importance of inversional symmetry in Schoenberg's music, including within the instrumental ensemble of *Pierrot lunaire*.[4] In this chapter, I will show, using the melodramas in Part One of *Pierrot lunaire*, that the *Sprechstimme* is also shaped by inversional symmetry, both on its own, and in concert with the ensemble. Moreover, I will demonstrate how Schoenberg's use of inversional symmetry serves as an emblem for the relationship and the connection that exists between muse and artist – Pierrot and the moon – and how this relationship may be symbolic of a more universal bond as that between tradition and innovation. In the end, this relationship will prove important as the reciter works to attain balance between speaking and singing.

[4] In "Inversional Balance and the 'Normal' Body in the Music of Arnold Schoenberg and Anton Webern," Joseph Straus points out that the opening instrumental phrase of "Valse de Chopin" strongly suggests pitch symmetry around A_3. (Joseph Straus, "Inversional Balance and the 'Normal' Body in the Music of Arnold Schoenberg and Anton Webern," in *Sounding Off: Theorizing Disability in Music*, ed. Lerner and Straus (London: Routledge, 2006): 258-259.) In *Inside Pierrot lunaire*, Paul Mathews explores how the canon-by-inversion in "Parodie," played by the viola and clarinet, balances around $C^{\#}_5$. (Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 189.) David Lewin, in examining the instrumental parts in "Die Kreuze" in "Inversional Balance as an Organizing Force in Schoenberg's Music and Thought," observed that Schoenberg utilized several simultaneous axes of symmetry in pitch-class space. (Lewin, "Inversional Balance as an Organizing Force," 4-8.)

Pierrot and the Moon

The character of Pierrot is a descendant of the original *Commedia dell'arte* character, Pagliaccio, who later became Pedrolino. When the Italian troupe established a residency in France, Pedrolino was modified to Pierrotto before finally settling to Pierrot. While the Italian version of Pierrot was often the butt of jokes, naïve, self-effacing, and slightly effeminate, he was considered a comedic character (a *zanni*) and one not likely to have developed an affinity towards the sensitive and romantic moon. In the hands of the French, however, Pierrot, became delicate, isolated, and out of touch, a character for whom a strong predilection for the moon seemed natural, as the two had so much in common. Why such a connection was made is unknown, but by the eighteenth century, the famous folk tune "Au clair de la lune," with its first line of "By the light of the moon/My friend Pierrot," suggests that an association between Pierrot and the moon had developed and that association quickly became an everlasting one, despite Verlaine's 1868 poem, "Pierrot," which begins, "You are no longer the lunar dreamer of the past."[5]

Albert Giraud's *Pierrot lunaire*, or *Moonstruck Pierrot*, written in 1884, clearly draws on this lunar association. The association was, in turn, strengthened by Schoenberg, not only by his choice of poems – he eliminated all of Giraud's poems that were not about Pierrot, the moon, the night, and/or poetry[6] – but also in his use of text painting throughout the work. Richard Kurth, who has identified some of the historical allusions apparent in *Pierrot lunaire*, notes that the seven-note piano motive at the beginning of melodrama No. 1, "Mondestrunken," harkens back

[5] Reinhold Brinkmann, "The Fool as Paradigm: Schönberg's *Pierrot lunaire* and the Modern Artist," in *Schönberg & Kandinsky: An historic encounter,* ed. by Konrad Boehmer (Harwood Academic Publishers, 1997): 139-163.
[6] Susan Youens, "Excavating an Allegory: The Texts of *Pierrot Lunaire*," *Journal of the Arnold Schoenberg Institute* 8, no. 2 (1984): 96.

to the graceful descending figure that opens Schumann's "Mondnacht," both motives capturing the gentle rays of moonlight as they descend to earth.[7] Alan Lessem traces this same motive, which he calls the "Pierrot" motive, as it appears throughout the work; the motive thus creating a thread that helps to unite the sometimes disparate melodramas.[8]

The notion that *Pierrot lunaire* may be Schoenberg's tribute to the poet-artist was first set forth by Susan Youens, who suggested the following framework for the three parts of *Pierrot lunaire*:

> In the first group of seven poems, Schoenberg first presents the poet revelling in the source of poetry, or moonlight, rejecting the past – symbolized by crystal –, then growing swiftly more disturbed, his mind more and more diseased and disordered. In the second and central cycle, night descends, and terror, death, poetic martyrdom and sterility close in, and in the final cycle, he becomes reconciled with his past, with poetic tradition, and returns home.[9]

Schoenberg himself seems to suggest this notion as well in a dedication he wrote in a score sent to Zemlinsky in December of 1916:

> Dearest friend, my warmest wishes for Christmas 1916. It is trite to say that we are all such moonstruck muddle; but that is what the poet means in saying that we try to wash away the imaginary moonbeams while still worshiping the cross. Let us rejoice that we have wounds: we have, thus, something that helps us to value material existence less. From the contempt for our wounds comes the contempt for our enemies, but also the ability to sacrifice our lives for a moonbeam. One is readily filled with pathos when one thinks of the Pierrot poems. But luckily, there are higher grain prices? Many greetings. Your Arnold Schoenberg.[10]

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[7] Richard Kurth, "*Pierrot lunaire*: persona, voice, and the fabric of allusion," in *The Cambridge Companion to Schoenberg*, ed. Jennifer Shaw and Joseph Auner (Cambridge University Press, 2010): 120-34.

[8] Alan Lessem, "Text and Music in Schoenberg's 'Pierrot Lunaire'," *Current Musicology* 19 (1975): 103-112. To be clear, Lessem does not connect this motive with moonlight, but rather interprets it as a gesture that serves to convey either Pierrot's state of mind or another aspect of the poetry within the melodrama it can be found.

[9] Youens, "Excavating an Allegory," 107.

[10] Brinkmann, "The Fool as Paradigm," 146. Translation by Nils Neubert.

And while Schoenberg may not view himself as moonstruck, there is no doubt that in his eyes Pierrot was exactly that type of artist.

If Pierrot is our poet-artist, then what was the moon to Pierrot? Was it nothing more than a symbol of his romantic nature? Was it the source of poetry, as Youens suggests above? For me, Giraud's text suggests that the moon is more than a symbol, that Pierrot and the moon have a relationship that mutually serves each of them. For Pierrot, the moon acts as his muse, filling him with inspiration, evident in the way he slurps and sucks up the moon's rays in "Mondestrunken." For the moon, Pierrot is the conduit who brings voice to all that it is – the other, the ever-changing, the weakling, the enigmatic, the deviant. As Schoenberg's *Pierrot lunaire* progresses, the audience is treated to the transformation that takes place, both in Pierrot's art, but also in the relationship that exists between Pierrot and his moon-muse. This transformation is evident not only in the text, but also musically, particularly in the use of inversional symmetry that pervades *Pierrot lunaire.*

The Analysis

Before the analysis proper, let me take a moment to explain my method for diagramming the inversional symmetry found in *Pierrot lunaire*. As is often the case with Schoenberg, inversional symmetry does not abide by hard-and-fast rules, nor does he lay out the symmetry in ways that we have come to expect from composers such as Bartók or Webern. Because of this, I felt that none of the existing models for diagramming inversional symmetry were compatible with Schoenberg's unique use of it.

What I created was a method that allowed the reader to easily see important aspects of the symmetry (Fig. 2.1). Inversional symmetry in Schoenberg is often presented as a literal wedge in pitch space, with a distinct upper and lower strand. Even when the symmetry involves octave displacements (i.e. when it is a symmetry of pitch class, not pitch), this sense of an upper and lower strand remains. To facility the identification of these strands, different shaped noteheads are used to indicate the upper and lower strands of the symmetry: a filled head for the upper voice, an open head for the lower voice. Beaming indicates the inversional partners around a specific axis. The axis of symmetry is designated by whole notes and parentheses, while an asterisk marks nonconforming notes. In addition, slurs were used to indicate notes that were stated previously, but that lack a repeated inversional partner. There are rare instances when two notes appear to be symmetrical around an alternative axis. These notes are indicated by dotted stems. Despite a superficial resemblance, there is no correlation between Schenkerian analysis and my method for diagramming Schoenberg's use of inversional symmetry in *Pierrot lunaire*.

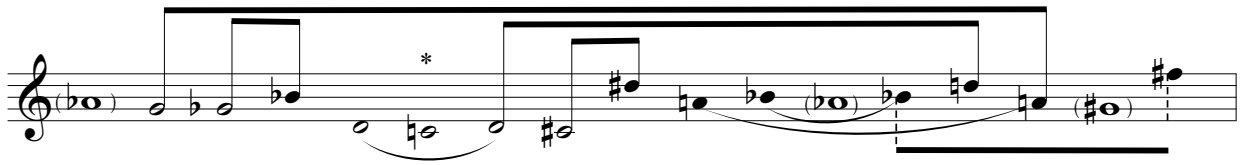

Fig. 2.1 Example of inversional symmetry diagram.

The Melodramas of Part One

If we abide by the framework as laid out by Youens, we greet Pierrot in the early melodramas when he is still naïve and optimistic – certain that he can change the world with his

artistic advancements. He dines on the moonlight, becoming drunk on the creativity with which it imbues him ("Mondestrunken"). He races forward to create with the help of continued sustenance from the moon ("Colombine"), and abandons all connections with tradition ("Der Dandy") as he enters this new, mystical world inspired by the moonlight ("Eine blasse Wäscherin"). Soon, however, doubt settles in as Pierrot realizes the art he is creating seems destined for annihilation, and, yet, he cannot stop ("Valse de Chopin"). He discovers that the audiences are scornful and abandon him (Madonna), and eventually, his love for his muse, the moon, disintegrates as he becomes bitter and disenchanted ("Der kranke Mond").

Within the early melodramas, short, but fairly clear, examples of symmetry frequently appear. In melodrama No. 1, "Mondestrunken," those short examples correspond to key moments within the poetry, introducing the listener to the relationship between Pierrot and the moon, but also the vast distance that separates them, as the upper voice of the balancing pairs – indicated by filled noteheads – is often presented prior to the partners in the lower voice – indicated by open noteheads. Now, it could be argued that Schoenberg could have achieved the same effect by using word painting, but I would like to suggest that this use of inversional symmetry establishes a relationship between Pierrot and the heavens, specifically the moon, that simple word painting could never do. Because any note used must be matched to its inversional partner, symmetrical inversion in this instance functions as an analogy for the vast distance that separates the moon and Pierrot, while also suggesting an unbreakable bond between these two entities. It is not merely that the sky (or moon) is high and man is low, but rather, that they are somehow bound together despite the distance that separates them. This analogy is echoed in the imagery Albert Giraud and Otto Erich Hartleben use throughout Part One: the way Pierrot imbibes the moonlight, how he searches for the "blooms" of moonlight to help alleviate his

artistic anxiety, and then paints his face with the moonlight captured in his crystal vials, finally acknowledging that the moonlight has become a melody that haunts him constantly. In these actions, we see a desire in Pierrot to unite and mingle with the moon, which, in turn, engages and interacts with Pierrot, seeming almost anthropomorphic in its need to connect.

"Mondestrunken"

The opening of No. 1, "Mondestrunken" arranges its notes around a central $A^{\#}_4$ – the axis indicated by the whole note – in an expanding and contracting wedge motion, where the pairs A_4-B_4 and $G^{\#}_4$-C_5 balance around this axis (Fig. 2.2). This wedge action immediately draws our attention to relationship between the moon and Pierrot and the distance between them. Words indicating each, *Den Wein* for the moon and *den man* for Pierrot, are even placed on notes in the appropriate voice.

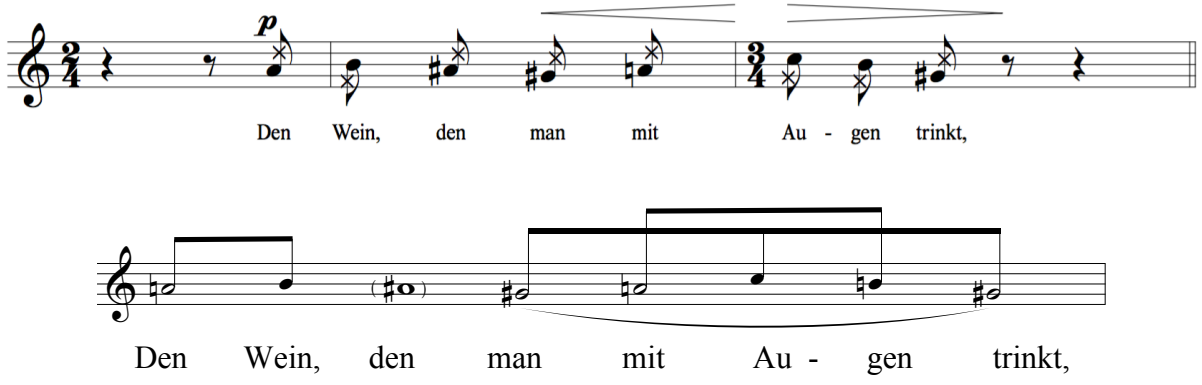

Fig. 2.2 Opening phrase of "Mondestrunken" with $A^{\#}_4$ axis. Placement of the words *Wein* and *man* correspond with the appropriate upper and lower voices. Source of examples from *Pierrot lunaire*: Arnold Schoenberg, *Verklärte Nacht and Pierrot Lunaire* (New York: Dover, 1994).

The distance between our poet and his muse is made even more readily apparent with the phrase *und eine Springflut überschwemmt den stillen Horizont* (Fig. 2.3). Here, an unheard $F_4/F^{\#}_4$

axis is strongly suggested as four pairs of notes are nested within each other. Pairs C_5-B_3, D_5-A_3, and $E^{\flat}{}_5$-$A^{\flat}{}_3$ bookend the sung inversional pair E_4 and G4 in a nearly ordered manner. The upper voice is set to the words *überschwemmt den*, again indicating the moon and the inundation of its copious, intoxicating rays, while the lower voice is set to *Horizont*, referencing the land to which Pierrot is bound.

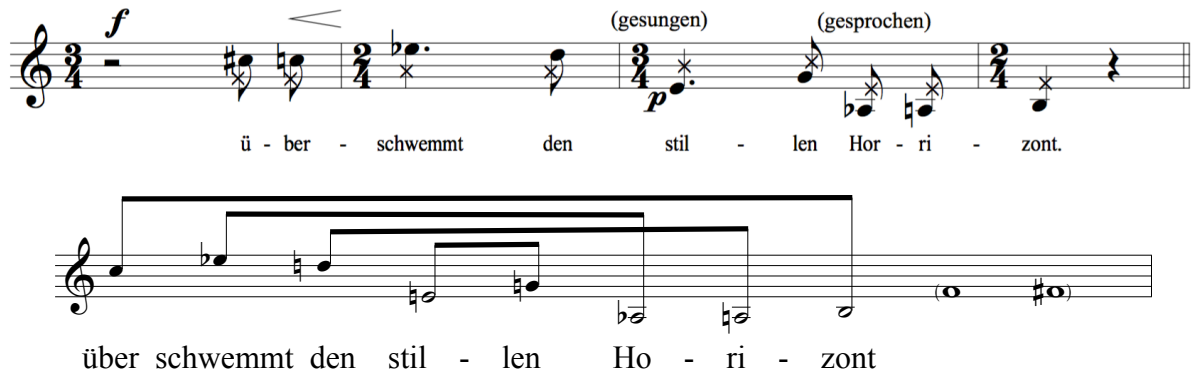

Fig. 2.3 Pitch symmetry around an unheard F_4-$F^{\#}{}_4$ axis in mm. 8-11 of "Mondestrunken." The narrowing distance between the upper voice and lower voice reflect the strengthening bond between Pierrot and the moon.

One final example of symmetrical inversion in "Mondestrunken" is within the phrase *gen Himmel wendet er verzückt das Haupt*, which organizes itself in a descending line, for the most part, around the pair $A_4/G^{\#}{}_4$, where $F^{\#}{}_4$ balances B_4, E_5 balances $C^{\#}{}_4$, and $D^{\#}{}_5$ balances D_4. The axis pitches occur on the word *wendet*, meaning "turns," with the word *verzückt*, meaning "rupturously," appropriately breaking the symmetry momentarily, as if Pierrot, in his drunken excitement, overshoots what should have been an E_5 (Fig. 2.4). As I said earlier, this may qualify as simple word painting, especially given the descending motion Schoenberg uses with *Himmel* ("heaven") at the top and *er* ("he," meaning Pierrot) at the bottom, *wendet* serving as the turning point; however, I believe the use of the symmetry here creates a much stronger bond than mere

word painting could ever do. In addition, the descending line reflects the ray of moonlight making its way earthward.

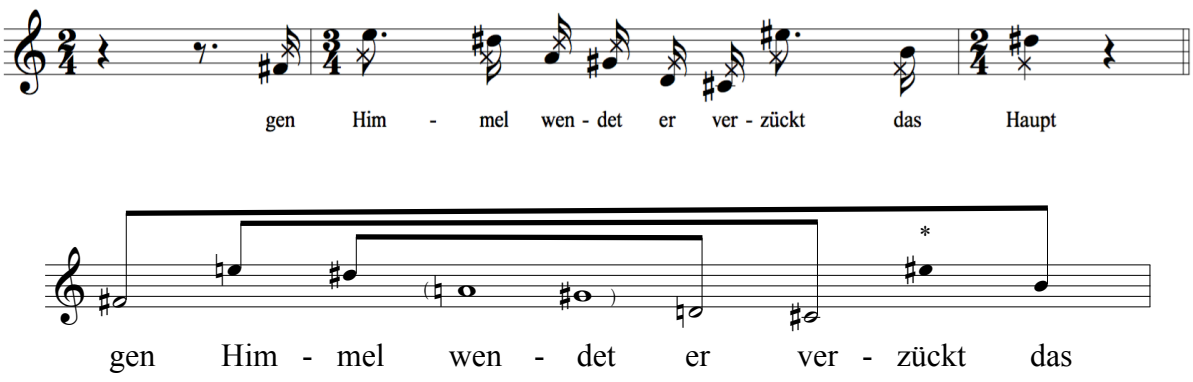

Fig. 2.4 Pitch symmetry around an $A_4/G^{\#}_4$ axis in mm. 32-34 of "Mondestrunken." The nonconforming $E^{\#}_5$, marked with an asterisk, helps to paint the excessive enthusiasm of *verzückt*.

"Colombine"

Examples of pitch symmetry within melodrama no. 2, "Colombine," continue along the path of highlighting the narrowing distance between Pierrot and the moon, as well as the deepening of their relationship. Early examples in the melodrama nearly replicate the patterns found in "Mondestrunken." For example, the opening of "Colombine" opens with an expanding wedge similar to what is seen in Figure 2.2 (Fig. 2.5). Here, pairs $C^{\#}_5$-B_4 and D_5-$B^{\flat}_4$ balance around an axial C_5.

Much like the example found in Figure 2.3, the word *Wunderrosen*, found in mm. 4-6, is set to nested pitch symmetrical pairs, but also lacks an axis, in this case B_4/C_5 (Fig. 2.6). Here, again, the inner pairs are nested in a nearly ordered structure: $G^{\#}_5$-$D^{\#}_4$, $F^{\#}_5$-$E^{\#}_4$, and D_5-A_4.

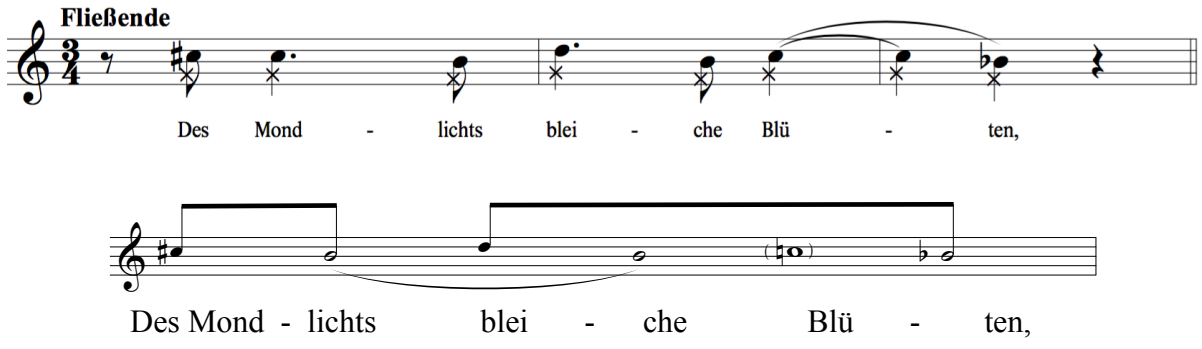

Fig. 2.5 Opening phrase of "Colombine" symmetrical around a C_5 axis.

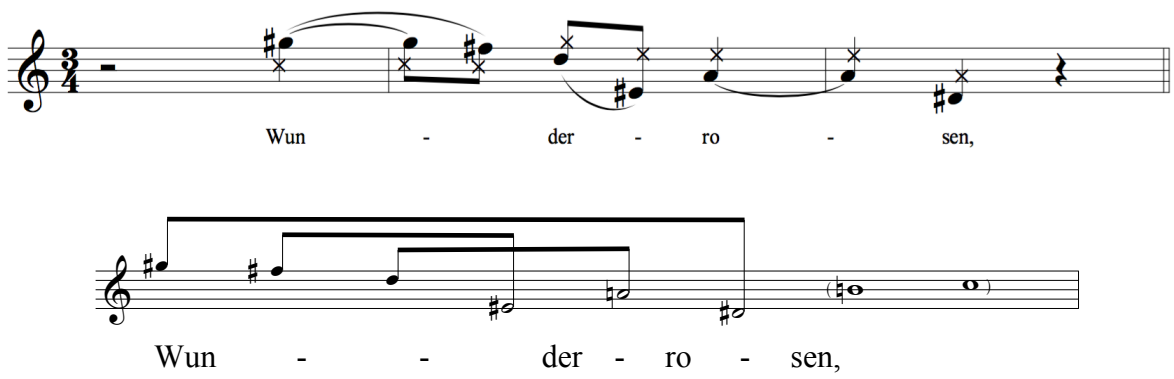

Fig. 2.6 The word *Wunderrosen* in mm.4-6 of "Colombine" symmetrically arranged around an unheard B_4-C_5 axis.

In these two early examples of "Colombine," little mention of Pierrot is made and the text instead focuses on how the moonlight creates blossoms of *Wunderrosen* on the earth for Pierrot to find. As the poem continues, the text suggests that Pierrot is struggling to find these blossoms, which he is sure might soothe him, as the waves of moonlight did in "Mondestrunken." As if to mirror Pierrot's struggle, the examples of inversional symmetry become more challenging to find, almost as if the moon is purposely playing with Pierrot.

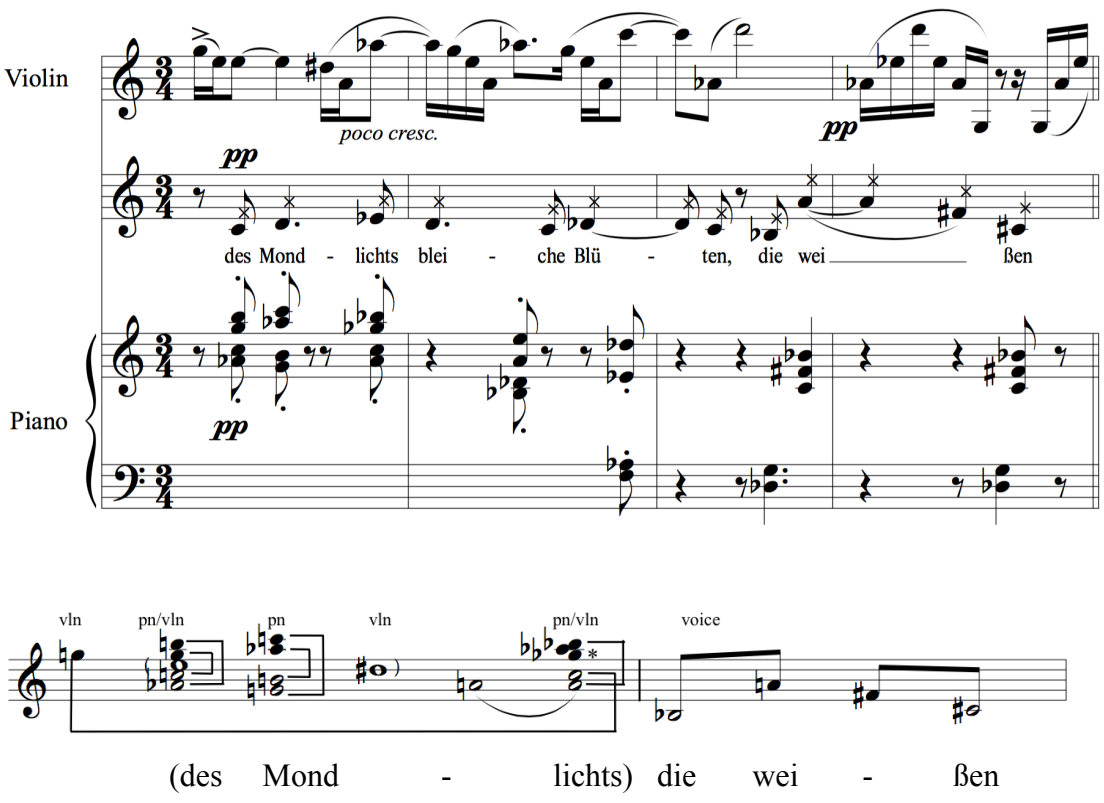

Fig. 2.7 Pitch symmetry found in the accompanying violin and piano parts of m. 21 of "Colombine." It is concluded in the voice part of mm. 23-24.

The third example within "Colombine" exemplifies this struggle, for it begins initially in the accompanying violin and piano part of m. 21 before it is concluded in the voice line in mm. 23-24 (Fig. 2.7). In m. 21, pairs of notes balance around E_5 and $D^{\#}_5$ found in the violin part. The G_5 of the violin and the voice balances the C_5's found in the piano chords, while the remaining notes in the first two piano chords create an expanding wedge: $A^{\flat}_4$-B_5, G_4-C_6, B_4-$A^{\flat}_5$. The A_4 anticipated by the violin is matched by the final piano chord of m. 21, which also contains its symmetrical partner $B^{\flat}_5$. This final chord of the piano also introduces a $G^{\flat}_5$, which is the only note that lacks a partner in m. 21. Much as Pierrot is in search of his *Wunderrosen,* so $G^{\flat}_5$ is in

search of its $D^{\flat}_5$ match. That specific pitch makes an appearance at the end of m. 22 and, in fact, $D^{\flat}$ shows up in multiple octaves, but it is its appearance in the vocal part in m. 24 that brings the symmetry of m. 21 to closure. Set to the phrase *die weisen*, the pitches $B^{\flat}_3$ and A_4, $F^{\#}_4$ and $C^{\#}_4$ balance around the $D^{\#}$/E of m. 21, but displaced by an octave. These pairs close the expanding wedge of m. 21, while also assuredly concluding $G^{\flat}$'s search for $D^{\flat}$.

The final example of inversional symmetry to be found in "Colombine" is hidden within the phrase *Gestillt wär all mein Sehnen, dürft ich so märchenheimlich* in mm. 28-31 (Fig. 2.8). Pierrot imagines how fulfilled he would feel if only he could find and pluck one of the *Wunderrosen* and then share some of the magical muse's power with his loved one, Colombine. If the inversional symmetry is an analogy for those moments when the moon is actively engaged with Pierrot, whether he recognizes it or not, then this example is a perfect illustration of that.

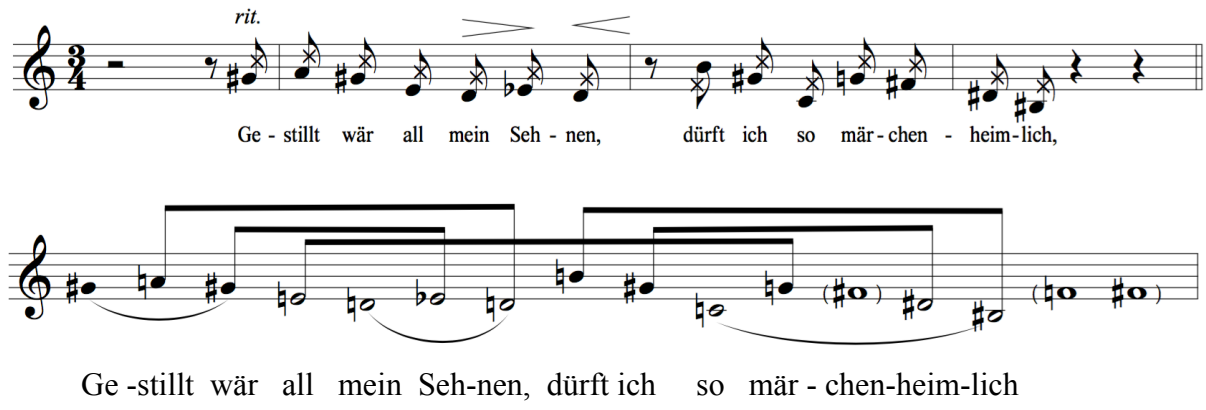

Fig. 2.8 Pitch symmetry tucked within the phrase at mm. 28-31 of "Colombine." Symmetrical around $F_4/F^{\#}_4$, this phrase begins to demonstrate the closer bond being created between the moon and Pierrot.

In this example, all the notes are inversionally symmetrical around $F_4/F^{\#}_4$, unheard except for the $F^{\#}_4$ of *märchenheimlich*. Certain pairs are nested within each other, while others extend

between the two parts of the phrase. For example, the initial $G^{\#}_4$, repeated with the word *wär*, finds its symmetrical mate in $E^{\flat}_4$, while the A_4 of *Gestillt* pairs with the D_4 of *Sehnen* (anticipated on *mein*), the pair nestling around the $G^{\#}_4$-$E^{\flat}_4$ pairing. The E_4, however, does not find its inversional partner in the first part of the musical phrase and must wait for the G_4 of *märchenheimlich*, the fourth note of its respective part of the phrase, for its inversional match. The second phrase is built much like the first, with the initial B_4 finding its match in the final $B^{\#}_3$ (anticipated with the C_4 on *so*), and the $G^{\#}_4$ balancing the $D^{\#}_4$ of *märchenheimlich*.

"Eine blasse Wäscherin"

In "Eine blasse Wäscherin," melodrama No. 4, we are granted insight into how the moon, Pierrot's muse, inspires him. The poetry compares the moon to a washerwoman, cleaning and bleaching the earth with her moonshine, almost as if she is stripping the world of all it has been made up of until this point and inspiring a kind of art that is perhaps sterile and monochromatic, mystical and haunted. Her influence, as before, is seen in phrases throughout the melodrama, but most frequently in the music set to the rondel's first line *Eine blasse Wäscherin*.

The opening phrase of the melodrama balances the first pair, $C^{\#}_4$-$E^{\flat}_4$, around the axis note D_4 (Fig. 2.9). The D_4 is repeated again, followed by a group of nested pairings: F_4-$C^{\flat}_4$, E_4-C_4, $E^{\flat}_4$-$D^{\flat}_4$. The phrase then ends with another iteration of the axis note before ending on nonconforming $B^{\flat}_3$. An $F^{\#}_5$ is heard in the clarinet on beat two of m. 7, in essence completing the symmetry in pitch class space, though it also feels as if this might be a case of mutiny on the part of tradition, which the moon is attempting to erase.

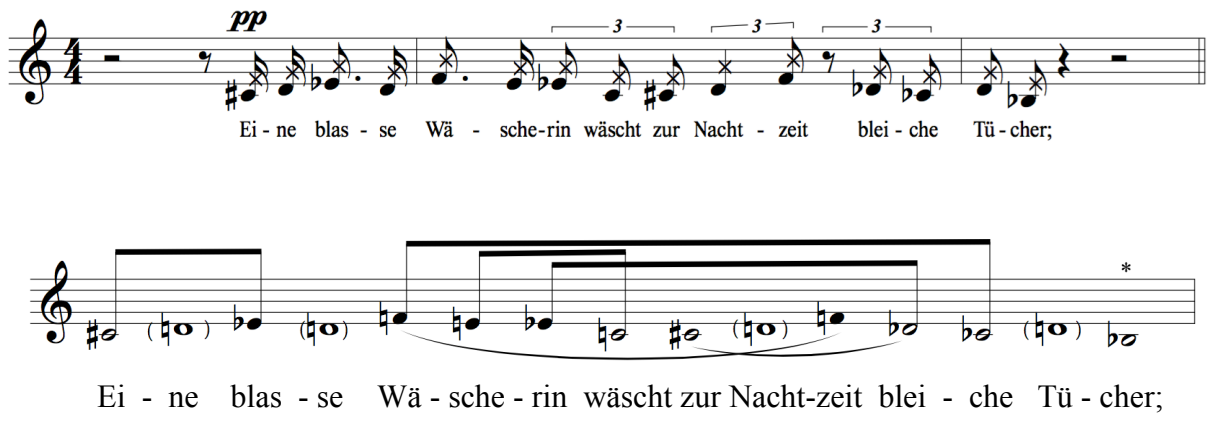

Fig. 2.9 Pitch symmetry in the opening phrase of "Eine blasse Wäscherin" around axis D_4. The nonconforming $B\flat_3$ perhaps demonstrates some mutiny, on the part of tradition, on too rigid a system.

The use of inversional symmetry continues into the following phrase *nackte, silverweiße Arme streckt sie nieder in die Flut*, however the axis of symmetry has now shifted to F_4 (Fig. 2.10). The $A\flat_4$ that opens the phrase is balanced by the D_4 at the end of the first part of this phrase, a D_4 that is introduced in the word *silberweiße*. The G_4 is balanced by the $E\flat_4$ of *Arme*, and the $C\sharp_4$ of *silberweiße* finds its inversional partner at the end of the very phrase with the A_4 of *nieder.* The C_4 of *streckt* is balanced by the $B\flat_4$ of *nieder*, but between them lays an E_4 whose match, yet another $F\sharp_4$, fails to appear in the *Sprechstimme*. Again, the $F\sharp_4$ appears in ensemble part, this time in the flute. Regardless, the symmetry of the line breaks down with *die Flut*, and the notes needed, a C_5 and B_4 respectively, are nowhere to be seen.

The moon tries again with the phrase *Durch die Lichtung schleichen Winde, leis bewegen sie den Strom*, creating a phrase that is symmetrical around the axis of $A_4/G\sharp_4$ (Fig. 2.11). In a

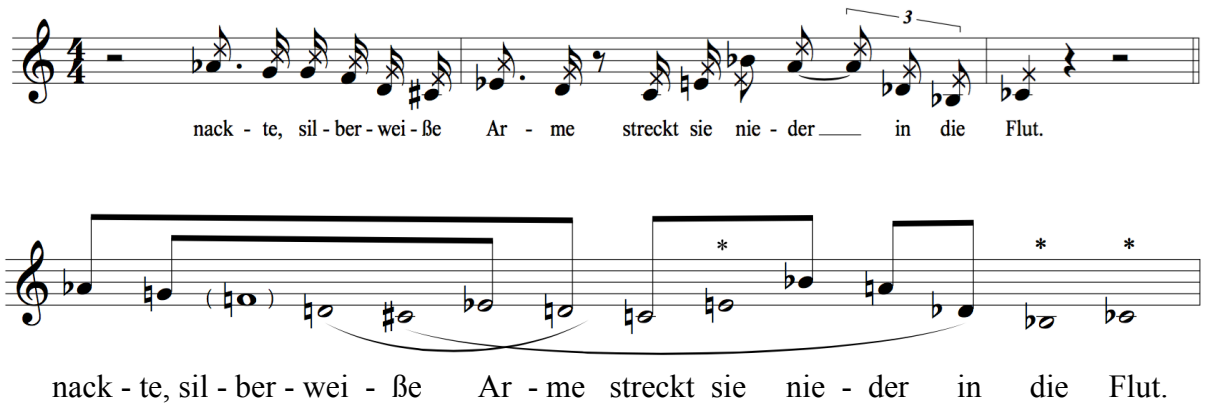

Fig. 2.10 Pitch symmetry in mm. 7-9 of "Eine blasse Wäscherin" around F_4. The partner to the nonconforming E_4, an $F^{\#}_4$, appears in the flute part. The final two notes of the phrase, $B^{\flat}_3$ and $C^{\flat}_4$, are left without inversional partners, much like the first phrase.

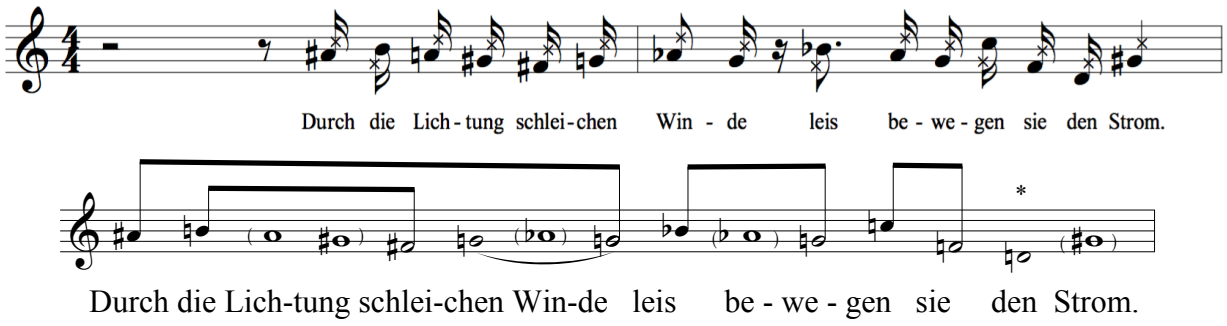

Fig. 2.11 Symmetrical inversion around a $G^{\#}_4/A_4$ axis in mm. 9-10 of "Eine blasse Wäscherin." The nonconforming D_4 finds its match of $D^{\#}_5$ in the violin part.

structure very similar to the preceding phrase, the first part of the phrase again features nested pairs $A^{\#}_4$-G_4 and B_4-$F^{\#}_4$, with the axis notes occurring amid them. The second part of the phrase features pairs of notes balanced in succession. First, $B^{\flat}_4$ is balanced by G_4 with one of the axis notes, $A^{\flat}_4$, appearing briefly between them. Then, C_5 is balanced by F_4. As before, the symmetry

breaks down as D_4 fails to find its partner $D^{\#}_5$, but the mutiny attempted by tradition is again quelled when the missing $D^{\#}_5$ appears in the violin part just as the *Sprechstimme* finishes the phrase.

Additionally, a $D^{\#}$ appears again at the beginning of the following phrase, reiterating the authority of the moon. As the instruments paint the ruffling of the water with their trills, so too do the concepts of up and down, pitch and pitch class get ruffled as the symmetry continues into the first repetition of the rondel's first line *Eine blasse Wäscherin wäscht zur Nachtzeit bleiche Tücher* (Fig. 2.12). Unlike the phrases that have come before, this phrase is suddenly inversionally symmetrical in pitch-class space, rather than pitch space, as if we are seeing the moon's reflection in the stream and we, too, are confused by what is up and what is down.

The entire *Sprechstimme* phrase is inversionally symmetrical around $C^{\#}$/D-G/$G^{\#}$. In addition, the instrumental ensemble is also symmetrical around this axis in m. 11. If we look first at the instrumental part, we can see the axial pair $C^{\#}_4$ and D_4 present in alternation in the clarinet part. The trilling $F^{\#}_4$ of the flute part is balanced by the A_3 that arrives near the end of the clarinet's sextuplet figure. Also in that sextuplet figure are a C_4 and an $E^{\flat}_4$ that balance around the axis established earlier by the clarinet. Both the E_5 of the violin line and the F_3 of the clarinet part, however, are left unbalanced until the *Sprechstimme* line picks up an E_4 and F_3 in mm. 12-13.

The *Sprechstimme* begins m. 11 with two pairs: $D^{\#}_4$-C_4, which balance around the oscillating $C^{\#}_4$ and D_4 of the clarinet part, and A_3-$F^{\#}_3$, which balance around the alternate axis of G_3-$G^{\#}_3$. Nearly the entire remaining phrase consists of pairs that nest within each other. The G_4 of *Wäscherin* is balanced by the $G^{\#}_4$ of *Nachtzeit*. Then, the following pairs all balance around $C^{\#}_4$-D_4, of which only the D_4 makes an appearance: $F^{\#}_4$-A_3, $D^{\#}_4$-C_4, and E_4-B_3. The phrase

concludes with a $B^{\flat}_3$ and an F_3, balancing each other around G_3-$G^{\#}_3$ and bringing to conclusion the F_3 of the clarinet part that was left unbalanced in m. 11.

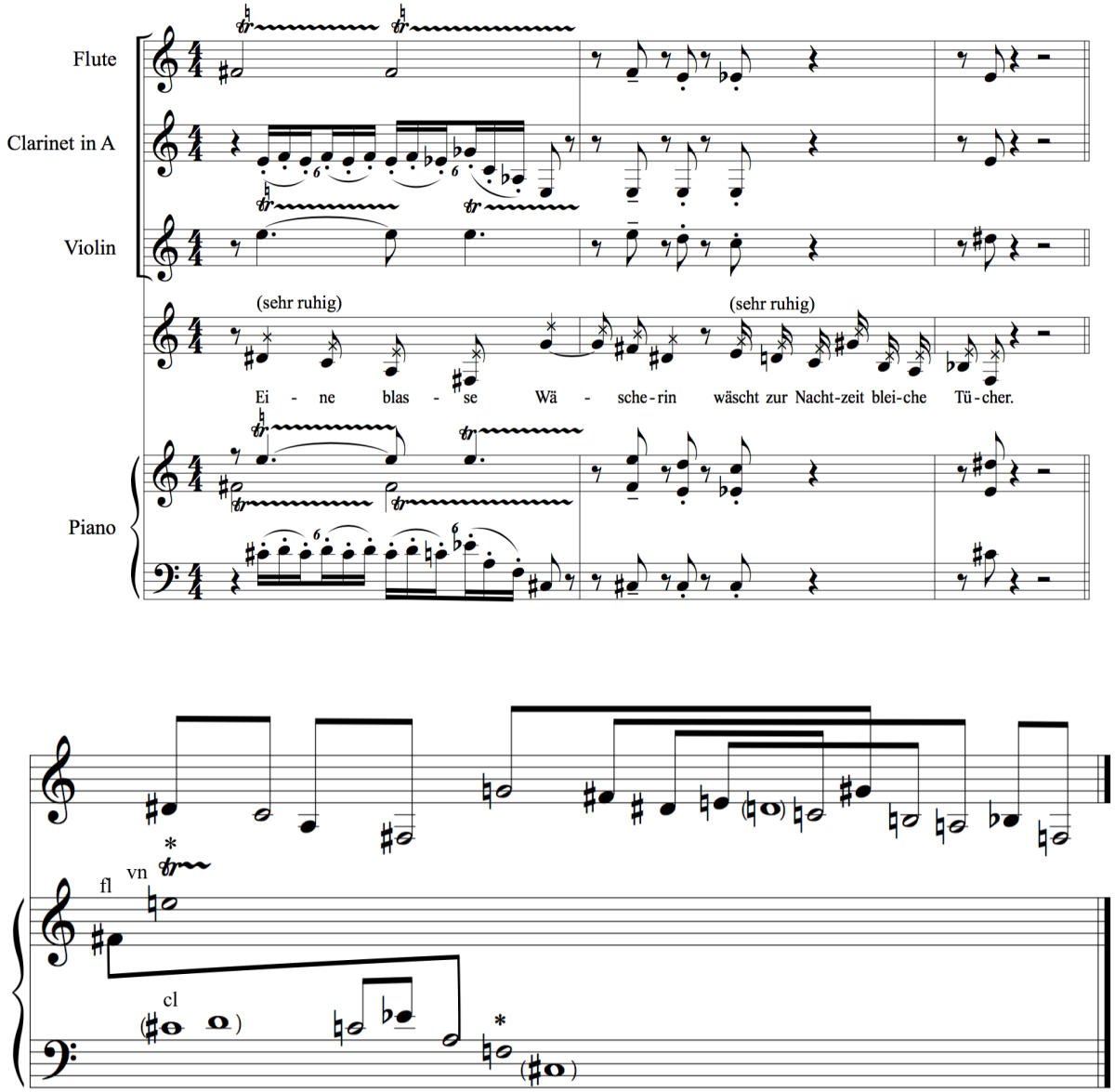

Fig. 2.12 Pitch-class symmetry about $C^{\#}$/D-G/$G^{\#}$ in mm. 11-13 of "Eine blasse Wäscherin."

As the melodrama continues, the use of symmetrical inversion is halted until the final setting of *Eine blasse Wäscherin* occurs in m. 17 (Fig. 2.13). As before, the instrumental part participates in the symmetry, this time creating the upper voice while the *Sprechstimme* balances those notes with the lower voice. The entire measure is balanced about an unheard $F_4/F^{\#}_4$ axis. The anacrusis to m. 17, heard in the flute part, begins the upper voice of the symmetry. The $B^{\flat}_4$,

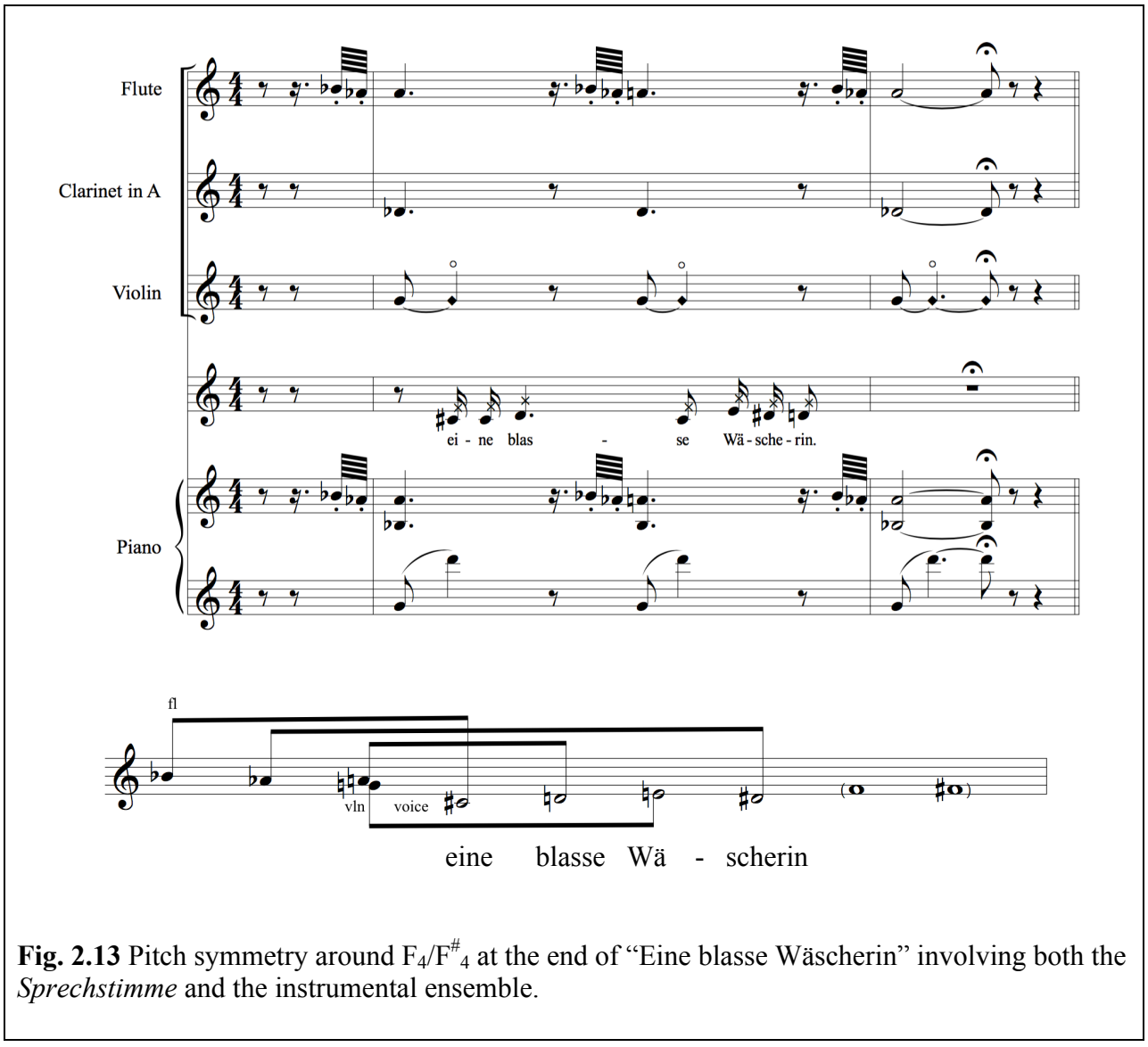

Fig. 2.13 Pitch symmetry around $F_4/F^{\#}_4$ at the end of "Eine blasse Wäscherin" involving both the *Sprechstimme* and the instrumental ensemble.

$A^{\flat}_4$, and A_4 are all balanced by the $C^{\#}_4$, $D^{\#}_4$, and D_4, respectively, of the *Sprechstimme.* In addition, the G_4 of the violin is balanced by the E_4 of the *Sprechstimme.* The remaining notes, the $B^{\flat}_3$ of the clarinet and the D_6 of the violin, belong to pitch classes already balanced either in the instrumental or *Sprechstimme* parts.

"Valse de Chopin"

"Valse de Chopin," *Pierrot lunaire's* fifth melodrama, continues the trends established in "Eine blasse Wäscherin" of using symmetry in both the instrumental ensemble and the *Sprechstimme*, however melodrama No. 5 finds the ensemble working independently from the *Sprechstimme*. In this, there seems to be a suggestion of the instrumental music functioning as the art Pierrot has successfully created with the help of his muse while the *Sprechstimme* continues to act as an emblem of the relationship between muse and artist. Throughout the poetic text, Pierrot references how he is being haunted by a particular piece of music. He also references, for the first time in the entire work, how he is certain that this music desires annihilation, foreshadowing the rejection he will face in later melodramas, as well as the hallucinations of his death by the moon and by audiences. Despite what seems like possibly dire consequences, Pierrot cannot get this music out of his head.

In "Inversional Balance and the 'Normal' Body in the Music of Arnold Schoenberg and Anton Webern," Joseph Straus points out that the opening instrumental phrase of "Valse de Chopin" strongly suggests pitch symmetry around A_3 (Fig. 2.14).[11] Within the first nine notes of the piano and clarinet parts, the C_2 of the piano balances with the $F^{\#}_5$ of the clarinet, $B^{\flat}_2$ with $G^{\#}_4$, B_4 with G_2, and D_4 with E_3. Additionally, the flute plays a little figure at the end of the

[11] Straus, "Inversional Balance and the 'Normal' Body in the Music of Arnold Schoenberg and Anton Webern," 258-259.

second measure that is also symmetrical around pitch class A, this time A_4, where the $G^{\#}_4$ balances with the $B^{\flat}_4$, and the G_4 balances the B_4. The only nonconforming note within these two bars is the top note of the piano, $D^{\#}_5$. Its inversional partner, $D^{\#}_2$, fails to appear, as Straus notes, until mm. 34-36 when the bass clarinet plays it on three successive downbeats. Could this radical delay in resolution – this suggestion of constantly being on the cusp of unraveling – be the wish for annihilation to which the poetic text refers?

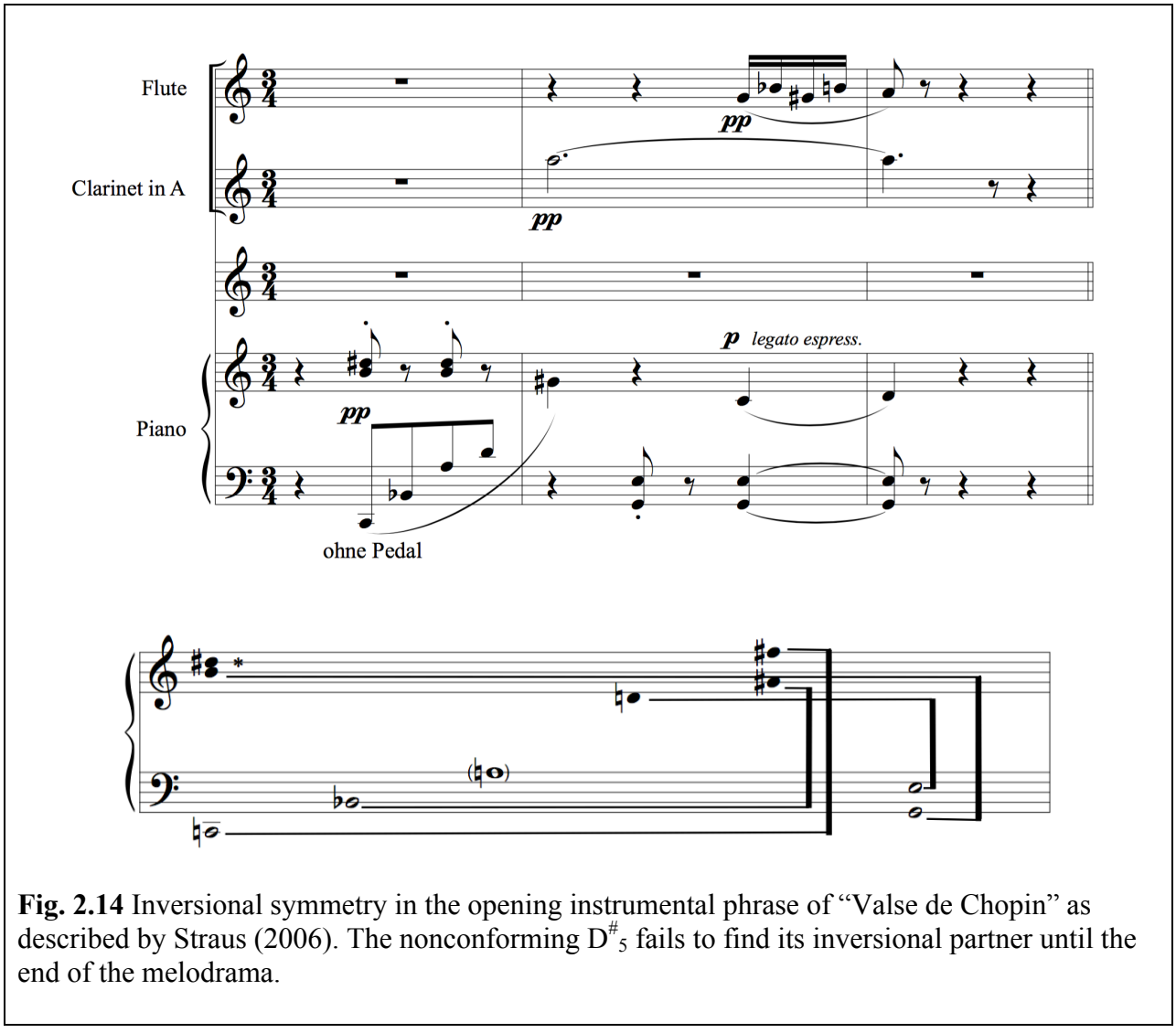

Fig. 2.14 Inversional symmetry in the opening instrumental phrase of "Valse de Chopin" as described by Straus (2006). The nonconforming $D^{\#}_5$ fails to find its inversional partner until the end of the melodrama.

When the *Sprechstimme* enters in m. 5, it too seems that it will suggest symmetry around this axis (Fig. 2.15A), however, the pitch symmetry breaks down quickly and a closer look reveals that in fact the axis has slipped to $G^{\#}_4$-A_4, marking a break in the unity between the instruments and the *Sprechstimme* that was a component of the symmetry seen in "Eine blasse Wäscherin" (Fig. 2.15B). The phrase uses three pairs of inversional partners presented in nearly an open wedge motion: $A^{\#}_4$-G_4, B_4-$F^{\#}_4$, and $E^{\flat}_5$-D_4. The final F_4 of the phrase lacks an inversional match within the *Sprechstimme*. Simultaneously, however, the clarinet is sounding the inversional match C_5, helping the voice complete the phrase.

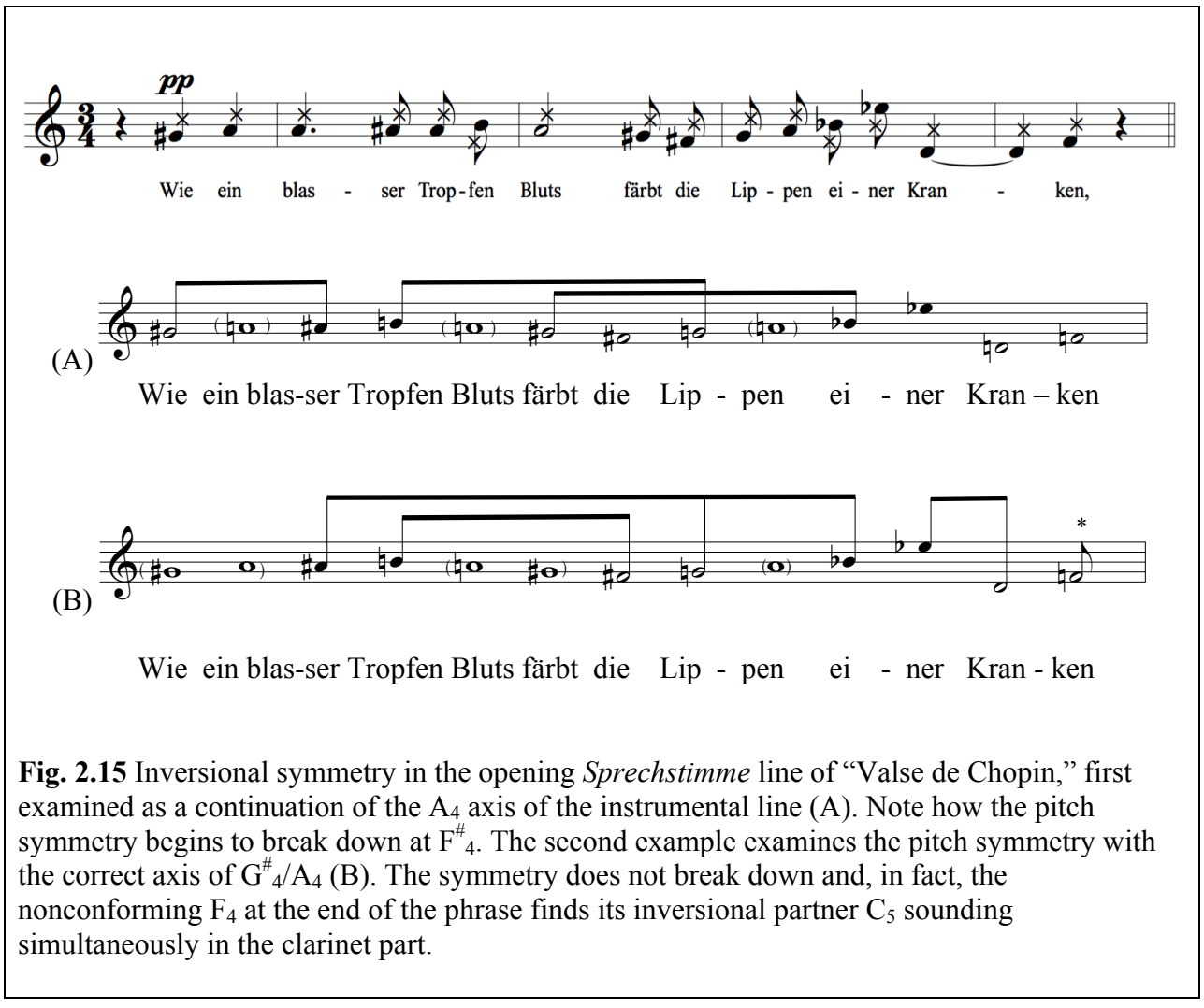

Fig. 2.15 Inversional symmetry in the opening *Sprechstimme* line of "Valse de Chopin," first examined as a continuation of the A_4 axis of the instrumental line (A). Note how the pitch symmetry begins to break down at $F^{\#}_4$. The second example examines the pitch symmetry with the correct axis of $G^{\#}_4/A_4$ (B). The symmetry does not break down and, in fact, the nonconforming F_4 at the end of the phrase finds its inversional partner C_5 sounding simultaneously in the clarinet part.

The strength of the $G^{\#}_4/A_4$ axis is reiterated when the first line of the rondel returns in mm. 20-22 (Fig. 2.16). The phrase begins again with the axial pair $G^{\#}_4/A_4$, presenting a four-note motif in sequence, before returning to the pair followed by inversional partners G_4-$B^{\flat}_4$ and D_4-$E^{\flat}_5$ in an opening wedge. As before, though, the pitch symmetry breaks down at the end of the phrase. It is interesting to note that the word on which it breaks down is *Kranken* meaning "sick person." Is this another allusion to the mental state of Pierrot and the art that he is creating?

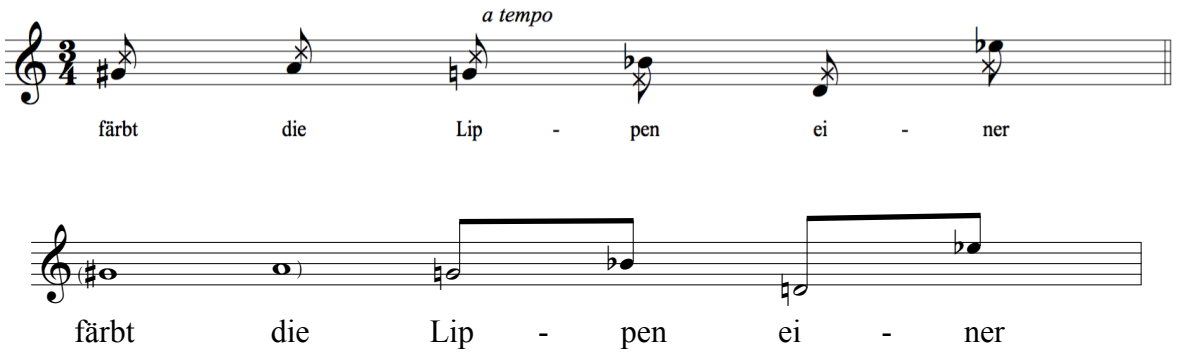

Fig. 2.16 Symmetrical inversion in m. 22 of "Valse de Chopin" that reiterates the symmetry of the opening *Sprechstimme* phrase.

As the first line of the rondel returns again at the end of the melodrama, piano chords moving in contrary motion demand a closer look. This moment corresponds to the long-awaited appearance of the inversional partner to the opening's $D^{\#}_5$ – that $E^{\flat}_2$ in the bass clarinet. The piano chords, repeated three times within the space of mm. 34-36, seem to lend themselves to pitch-class symmetry around a $G^{\#}$/A-D/$D^{\#}$ axis, the same axis the *Sprechstimme* used in the first two occurrences of the line *Wie ein blasser Tropfen Bluts* (Fig. 2.17). The outer voices of the first chord, D_4-$D^{\#}_6$ and $A^{\flat}_4$-A_5, are symmetrical around a $D_5/D^{\#}_5$ axis, while the remaining notes of that chord create an instance of nonconformity. In the second chord, the A_4-$A^{\flat}_5$ pairing

creates a contracting wedge with the first chord, while the remaining notes are symmetrical around two separate axes: $E^{\flat}_5$-D_6 around $A^{\flat}_5/A_5$ and E_4-$C^{\#}_5$ around $A^{\flat}_4/A_4$. The nonconforming notes of the first chord are C_5 and E_5. The E_5 is resolved with the appearance of the $C^{\#}_5$ in the second chord, which is simultaneously balancing the E_4 below it. The C_5 appears to be missing its inversional partner, which should be F_5 or some other pitch class F. If we expand this example to include the other members of the ensemble, some other instances of pitch class symmetry become apparent, and a match for the C_5 appears. For example, the by now well-known $E^{\flat}_2$ finds its inversional partner in the D_4 the bass clarinet plays later, the two balancing around axis $D_3/D^{\#}_3$. The $F^{\#}_6$ of the flute balances with the B_3 of the bass clarinet around the $D_5/D^{\#}_5$ axis of the piano's first chord. The F_6 of the flute becomes the inversional partner of the piano's C_5, balancing about the $A^{\flat}_5/A_5$ of the piano's second chord. As the measure continues, the $C^{\#}_4$ of the bass clarinet and the E_5 of the flute, as well as the E_4 of the piano and the $C^{\#}_5$ of the flute both balance around an $A^{\flat}_4/A_4$ axis, while the $B^{\flat}_3$ of the piano and the G_4 of the flute balance about a $D_4/D^{\#}_4$ axis. What remains are four notes for whom inversional partners do not exist within the measure: A_4, $D^{\#}_5$, F_3, and B_4. These four nonconforming notes continue the shaky ground on which this melodrama rests and the apprehension Pierrot is beginning to feel about this new music that has seemingly rejected tradition outright.

As was stated earlier, the mm. 34-36 are near replicas of each other in regard to the instrumental ensemble. Measure 36 is a variant on the previous two, and with it comes resolution to the four nonconforming notes of mm. 34 and 35. The first sign of resolution appears in the bass clarinet line, whose altered rhythm permits the addition of one additional note, an $F^{\#}_4$ to balance the B_4 of the original flute gesture in mm. 34 and 35 that is missing from m. 36. The timing of that $F^{\#}_4$, as well as the use of that particular octave, adds some validity to my claim

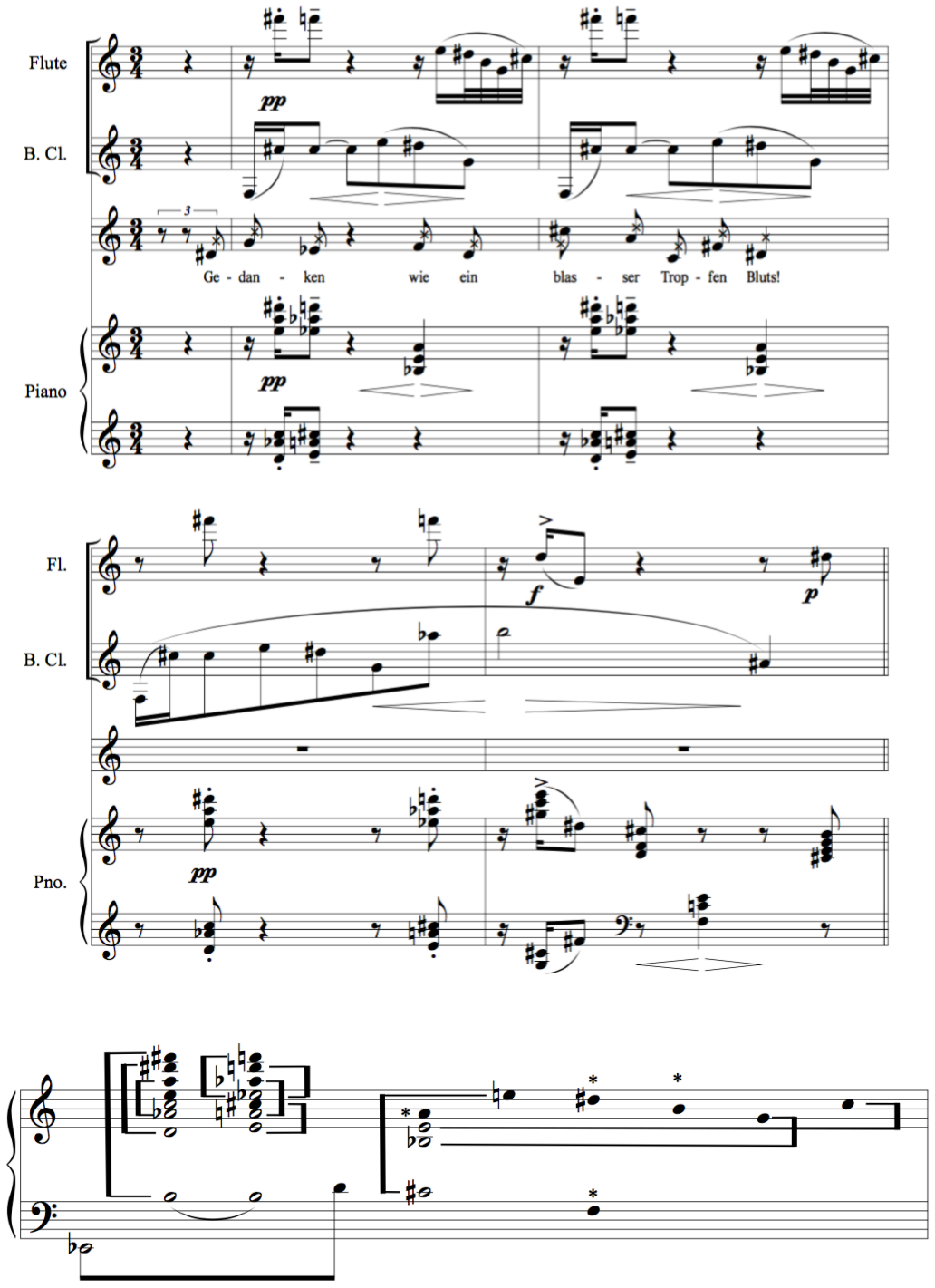

Fig. 2.17 Pitch space symmetry in mm. 34 and 35 of "Valse de Chopin" around a $G^{\#}$/A-D/$D^{\#}$ axis. Nonconforming notes A_4, $D^{\#}_5$, F_3, and B_4 find resolution in mm. 36 and 37.

since it occurs in the same beat as in which the B_4 occurred, and the pair balance around an $A^{\flat}{}_4/A_4$ axis like other members of that beat. The nonconforming A_4 (originally heard in the piano part) returns strongly on the downbeat of m. 37 in the high range of the bass clarinet, accompanied by nothing but silence. The bass clarinet then slides to $G^{\#}{}_3$, creating a strong resolution for that pair around a $D_4/D^{\#}{}_4$ axis. The $D^{\#}{}_5$ finds its resolution in the D_5 that appears in the flute part of m. 37. While the flute descends to an E_4, the piano plays a $D^{\#}{}_5$ at the same moment, binding the D_5 to its inversional partner of mm. 34 and 35. The last nonconforming note is the F_3 of the bass clarinet line, whose ideal inversional partner would be C_5 or C_6 given the other axes of symmetry that were used in beat three of mm. 34 and 35. A C_5 does appear in the first beat of both mm. 35 and 36, and could act as an inversional partner to the F_3, however that C_5 is also acting as a balance to the F_6 of the flute line. Another option is the C_6 that appears in the piano part in the first beat of m. 37. Unfortunately, unlike the other nonconforming notes, this F_3 does not suggest a strong inversional partnership with either of these notes. While this may be troublesome, I believe it adds strength to the underlying assumption of this melodrama that perhaps this new music the moon has inspired is not sustainable.

"Der kranke Mond"

In melodrama No. 5, there is a sense that Pierrot is uncertain about this new art he is creating as inspired by his moon-muse. Melodrama No. 6, "Madonna," reveals that Pierrot's uncertainty is founded. Addressing the Madonna in such a way as to suggest she may simply be an analogy for the moon, Pierrot references her impending death, evident in her fresh wounds and emaciated figure, and her already dead son. In the reference to her son, Pierrot may be painting himself as the son of the Madonna, who is holding him up for the people to see/witness

and, yet, they turn away. He and his art are utterly ignored by the public, which angers and confuses Pierrot, as it would any artist. By melodrama No. 7, "Der kranke Mond," Pierrot is disillusioned by his relationship with the moon and begins to mock the moon as ill, sorrowful, and gloomy. Despite the mocking tone, more evident in the music than in the text, Pierrot admits that there is still a draw to his moon-muse; a connection he hopes will end with the death of the moon.

The examples of symmetry in this melodrama echo some of the examples seen in the early melodramas of Part One. They are short examples that only use two or three inversional partners and which only involve the *Sprechstimme*. This regression seems to suggest a dissolution of the bond that has connected Pierrot and the moon as Pierrot has become disenchanted by his muse.

The first example, as so many of the examples thus far, can be found in the opening phrase of the *Sprechstimme* (Fig. 2.18). The phrase *Du nächtig todeskranker Mond* is made up of several inversional partners that balance about an A_4 axis. Two of the pairs nestle within the outermost partners C_5-$F^{\#}_4$: $B^{\flat}_4$-$A^{\flat}_4$ and B_4-G_4. The partners are clearly separated into upper voice and lower voice, as if to suggest Pierrot hopes the moon will see in his address how he is disengaging from their involvement.

The second example is found in mm. 6-7, *Dein Blick, so fiebernd übergross* (Fig. 2.19). This phrase also balances about an A_4 axis with members of each of the two inversional pairs spaced out evenly between axis notes. Here, the C_5 balances the $F^{\#}_4$ while the $G^{\#}_4$ is balanced by the $B^{\flat}_4$. The nonconforming G_4, whose inversional partner B_4 does not appear in this phrase nor the following phrase, acts as another example of revolt against the influence of the moon.

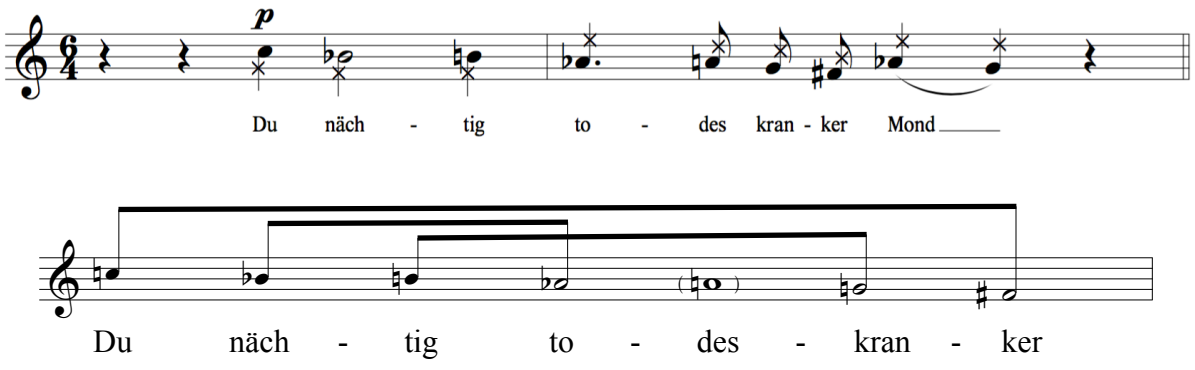

Fig. 2.18 The opening phrase of "Der kranke Mond," inversionally symmetrical around A_4 with clear separation of the upper and lower voices of the symmetry.

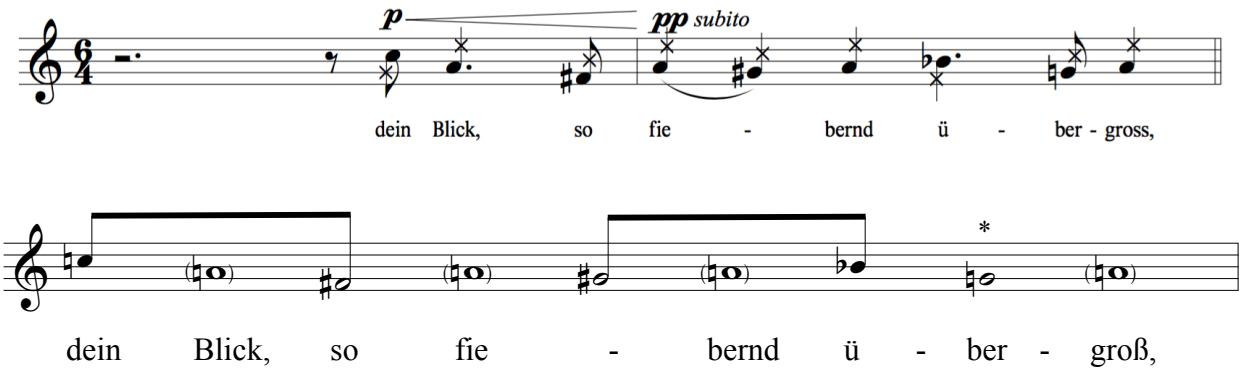

Fig. 2.19 Pitch symmetry in mm. 6-7 of "Der kranke Mond" around an A_4 axis. The nonconforming G_4 supports the narrative of a disenchanted Pierrot.

The final example is found in mm. 22-23, *Den Liebsten, der im Sinnenrausch gedankenlos zur Liebsten geht* (Fig. 2.20). The pitch symmetry is tucked into a phrase rich with the repeated notes $F^{\#}_4$ and G_4, but which eventually gives way to three inversional pairs nested within each other. The lower voice, which makes up the first part of the phrase, consists entirely of the lower tetrachord of a D Major scale. The use of solely those notes over the course of seven

beats and the way they rise sequentially might almost fool the listener into thinking they are hearing tonal music. Could it be that this, too, is part of Pierrot's revolt?

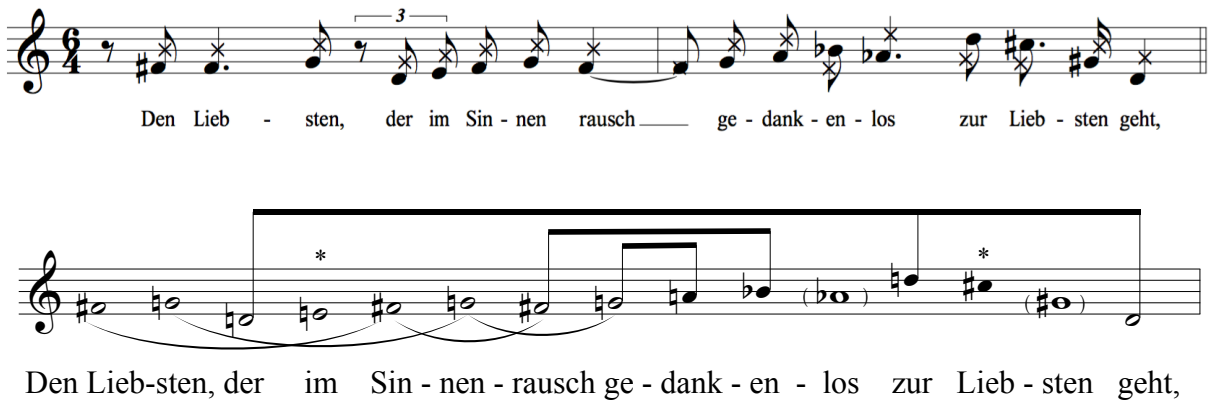

Fig. 2.20 Pitch symmetry in mm. 22-23 of "Der kranke Mond" around an $A^{\flat}_4$ axis. The example illustrates the struggle between a more traditional tonal model and the new atonal model.

As the phrase continues, the first inversional pairing emerges: G_4-A_4. This pairing, however, is hardly notable as it simply feels like an extension of the major scale heard thus far. The $B^{\flat}_4$ that follows is the first note that is foreign to the scale. It is there to balance the $F^{\#}_4$ and immediately suggests that perhaps Pierrot is not strong enough to completely sever ties with his moon-muse. The axis of this phrase, $A^{\flat}_4$, follows and cannot be ignored as it is one of the longest notes of the phrase, while also standing out simply because it is the tritone. The D_5 that balances the D_4 of the beginning arrives before the phrase descends back down to that same D_4.

The entire phrase has two nonconforming notes, E_4 and $C^{\#}_5$, both of which are members of the D major scale. If the $C^{\#}$ had been a C_5, the phrase would have entirely symmetrical around $A^{\flat}_4$, implying, with its perfection, a renewed connection between Pierrot and the moon. The flaw, however, works to strengthen the sense of tonality within the phrase and solidifies Pierrot's desire to sever ties with this muse that has inspired him, but also let him down. As the first part

of Pierrot comes to a close, the ambiguity this struggle has created, draws the audience in as they wonder: what next?

The Melodramas of Parts Two and Three

In Part Two, which Youens describes as the central cycle, we see Pierrot continue with his abandonment of tradition, while he simultaneously rejects the inspiration he once received from his moon-muse. He watches as the bitterness and doubt that has filled his soul, blots out the light of the sun, which, in turn, causes the moon to die ("Nacht"), and then listens as someone close to him – Colombine? – begs for him to turn back from the path that he has chosen ("Gebet an Pierrot"). Pierrot, ignoring the pleas, continues on, pillaging for artistic glory ("Raub") as he stumbles upon nothing but artistic stunts ("Rote Messe"). As he flounders, his work suffers and seemingly all his poetic creativity is squashed ("Galgenlied"). Pierrot sinks deeper into despair and imagines that the moon has returned to avenge its death ("Enthauptung"). As Part Two ends, the destruction of Pierrot's poetic creativity is complete as he blames his death on the rejection of his art by the masses ("Die Kreuze").

The opening of Part Three acts as a resurrection of sorts, perhaps proving that ingenuity is never really destroyed. Pierrot is revived when echoes of his commedia past remind him of the power of tradition ("Heimweh"). Antics of his past ("Gemeinheit") and memories of old love ("Parodie") renew Pierrot's desire to create art. He determinedly sets out only to discover that his moonlit muse has not abandoned him completely, despite attempts to get rid of it ("Der Mondfleck"). Pierrot dreamily considers his options ("Serenade") before deciding to unite a course of tradition and ingenuity ("Heimfahrt"). As Part Three ends, we see Pierrot, perhaps years later, satisfied and joyful with this determined path ("O Alter Duft").

Evidence of inversional symmetry presents itself in both Parts Two and Three. Small examples of inversional symmetry appear in both the *Sprechstimme* and ensemble parts of "Gebet an Pierrot" and "Rote Messe," melodramas Nos. 9 and 11, respectively. Meanwhile, the inversional symmetry evident in the concluding melodrama of Part Two, "Die Kreuze," was first explored by David Lewin in "Inversional Balance as an Organizing Force in Schoenberg's Music and Thought," in which Lewin finds evidence of several simultaneous axes of symmetry in the opening piano part.[12] Further examination uncovers sizable evidence of inversional symmetry throughout the *Sprechstimme*, as well.

Examples of inversional symmetry continue to manifest themselves in both the *Sprechstimme* and instrumental parts of the melodramas in Part Three. "Heimweh," the first melodrama of this final part, opens with pitch-class symmetry in the piano and violin, while a portion of the opening clarinet solo appears to be inversionally symmetrical in pitch space. Examples in the *Sprechstimme* are often long and the notes of the upper strand frequently occur before the notes of the lower strand, continuing the trend of nesting often seen in the Part One melodramas. Longer, more complex examples of symmetry are also found in the *Sprechstimme* of melodrama No. 18, "Der Mondfleck," famous for its double mirror canon between the strings and woodwinds and the fugue in its piano accompaniment, and in significant verses in melodrama No. 20, "Heimfahrt."

While use of inversional symmetry in Part One was indicative of the bond between Pierrot and his muse, the moon, the symmetry of Parts Two and Three continue to explore that bond, though in increasingly intricate ways. The darkness and despair of Part Two is marked by an absence of the moon, which only appears in melodrama No. 13, "Enthauptung." The lack of

[12] Lewin, "Inversional Balance as an Organizing Force," 4-8.

the moon, however, does not mean a lack of references to the art that the moon inspired Pierrot to create. Part Two examples of inversional symmetry are, thus, reserved for those references, which occur in "Gebet an Pierrot," "Rote Messe," and "Die Kreuze," and are symbolic of the relationship that existed between Pierrot and the moon, rather than illustrative of the shifting distance between them.

The return of the moon and Pierrot's artistic revival in Part Three mark a restoring of the symmetry as illustration of the poet-muse bond. All the melodramas that reference the moon, "Heimweh," "Parodie," "Der Mondfleck," and "Heimfahrt," also include inversional symmetry.[13] From "Heimweh," with its imagery to floods of moonlight that echo those of "Mondenstrucken," to the irremovable spot of moonlight in "Der Mondfleck," which Pierrot eventually decides to use as his rudder in "Heimfahrt," these references suggest that, while the moon is not going anywhere, the relationship has matured beyond that of uncontrollable infatuation. This is evidenced by the examples of inversional symmetry in these melodramas, which are lengthy and complex, but which include the smallest number of non-conforming tones, suggesting a more stable relationship.

Giraud's choice to use moonlight as the rudder of Pierrot's boat in "Heimfahrt," the boat used for his return journey home, is quite significant, as is Schoenberg's placement of this melodrama as second to last. Moonlight was the source that pushed Pierrot to the artistic edge that created such angst in "Enthauptung" and "Die Kreuze." It appears in the beginning of Part Three that Pierrot is going to choose to abandon moonlight and the resultant artistic ingenuity altogether in favor of a safer and more traditional art. Additionally, the force with which he tries

[13] As mentioned earlier, Paul Mathews explores the inversional symmetry evident around $C^{\#}_5$ in the canon-by-inversion of "Parodie," as played by the viola and clarinet. (Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 189.)

to eliminate the fleck of moonlight from the back of his coat is a sure indication of that desire to leave it all behind. That said, somewhere between "Der Mondfleck" and "Heimfahrt," Pierrot must decide that he can have both: moonlight as a guide towards new art and home/tradition as a source of grounding. The arts do not need to be all one or the other. As a listener and a performer, we come to understand that this is what Schoenberg has been doing musically throughout the entire work: *Pierrot lunaire* is a unique balance of tradition in form and innovation in content.

Conclusion

This interpretation of *Pierrot lunaire* and the recognized importance of the symmetrical inversion found within the *Sprechstimme* illuminate many implications for the realization of this work, particularly for the reciter. The realization of these interpretative possibilities begins when the reciter works to convey the pitches accurately, allowing an audience member to be able to hear the balance of pitches around an axis, the relentless use of particular pitch class sets, and the imitation between voice and instruments. With this, a listener may appreciate the work Schoenberg did in uniting all the notes on the page, as well as be able to question why he did that and come to conclusions of their own, whether it be the interpretation laid out here or another.

The realization of these interpretation possibilities continues when the reciter understands the extent to which the concept of balance pervades this work – from composition, to form, to meaning – penetrating even the technique necessary for execution. It is easy to see how the balancing of notes about an axis, the balancing of high to low, can be equally representative of the balance the reciter must attain between singing and speaking, the balance of something ethereal, such as music, with something grounded, such as language. While the two main

registers of the voice, head register and chest register, are used in both speaking and singing, frequently, the use of head register is heard as more singing-like, while the use of chest register is heard as more speech-like. The use of these registers, then, can help to reinforce the voices of the moon and Pierrot, whereby a high, head register sound may be representative of the moon, while a lower, chest register sound might be that of Pierrot.

For a reciter to properly explore her interpretive possibilities, it becomes imperative that she learn to balance speaking, singing, and her use of vocal registration, as well as her use of vibrato, articulation and other fundamentals of singing that may differ from speech. In doing so, she begins to do justice to this work as envisioned by Schoenberg and to the interests of the woman who commissioned it. Albertine Zehme was convinced that the human voice was capable of so much more than natural speech and classically-trained singing. She specifically chose Arnold Schoenberg because she saw in him a man who questioned the status quo, as she did. I believe it is the duty of any singer who attempts this work to question all that they know regarding how the voice functions and of what it is technically capable.

To this end, Chapter Three seeks to investigate how the voice functions cognitively so that a reciter may learn how to balance speaking and singing, as well as how to convey the pitches accurately. It explores in detail the research that suggests that speaking cannot occur on specific pitches, hence suggesting that the *Sprechstimme* must be sung if the pitch is to be performed accurately. Chapter Four offers a solution for performers of *Pierrot lunaire*, who must learn how to accurately produce these pitches without them appearing sung. The chapter acknowledges the cognitive disconnect between speaking and singing while finding a method that ensures a speech-like timbre. Furthermore, it demonstrates how to strengthen and balance vocal registration so that the head register and chest register may be used interpretatively. In the

end, the reciter can be confident that she is creating a strong and engaging interpretation of this work that sacrifices neither pitch accuracy nor vocal timbre.

CHAPTER THREE
Is it possible to execute *Sprechstimme* as Arnold Schoenberg described?

As Schoenberg composed *Pierrot lunaire* in 1912, he also wrote three different sets of instructions to the performer. It seems that as he worked with Albertine Zehme and had discussions with Eduard Steuermann, who trained Zehme for the premiere, Schoenberg realized he would need to be more explicit with what he wanted – what he envisioned. The initial instructions were inserted into the score as he wrote each melodrama. Eventually, however, the frequency of those instructions diminished and Schoenberg instead wrote two versions of a preface. With each draft, Schoenberg seemed to change his mind about aspects of the *Sprechstimme* technique, shifting significantly what was expected of the singer performing the work.[1]

The initial instructions were never eliminated from the score, and so are still there to create confusion for interpreters and researchers. The very first melodrama that Schoenberg completed was melodrama No. 9, "Gebet an Pierrot."[2] At the bottom of the first page of the score, Schoenberg wrote, "The reciting voice must project the pitch in an indirect way."[3] On the score of Melodrama No. 3, "Der Dandy," the second melodrama to be written, the composer instructs the reciter to perform mm. 18-20 "almost sung, with some tone, very drawn out, following the clarinet line."[4] This is in addition to numerous other directives written above

[1] What Schoenberg was looking for in his other compositions that use *Sprechstimme* clearly shifted as well, evidenced by his change of notation. Because of this, I will not include those directives in this discussion.
[2] Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 92-93.
[3] Schoenberg, *Verklärte Nacht and Pierrot Lunaire*, 87. "Die *Rezitation hat die Tonhöhe andeufungsweise zu bringen."*
[4] Schoenberg, *Verklärte Nacht and Pierrot Lunaire*, 72. "*fast gesungen, mit etwas Ton, sehr gezogen, an die Klarinette anpassend.*"

Schoenberg's established notation, such as "toneless whisper," "spoken with tone," and "toneless," as well as the directive "toneless whisper" over a kind of ghost note notation (Fig. 3.1). The final directive that remains from the initial drafts is in melodrama No. 10, "Raub," which was the seventeenth melodrama Schoenberg wrote. This directive is coupled with a unique notation that shows up in the cycle at no other time. In mm. 8-9, Schoenberg asks the singer to alternate between toneless and toned voice production. The toneless directions are accompanied by smaller circled note heads that are not filled in. They look distinctly different from half note heads and seem to suggest a "colorless" voice color.

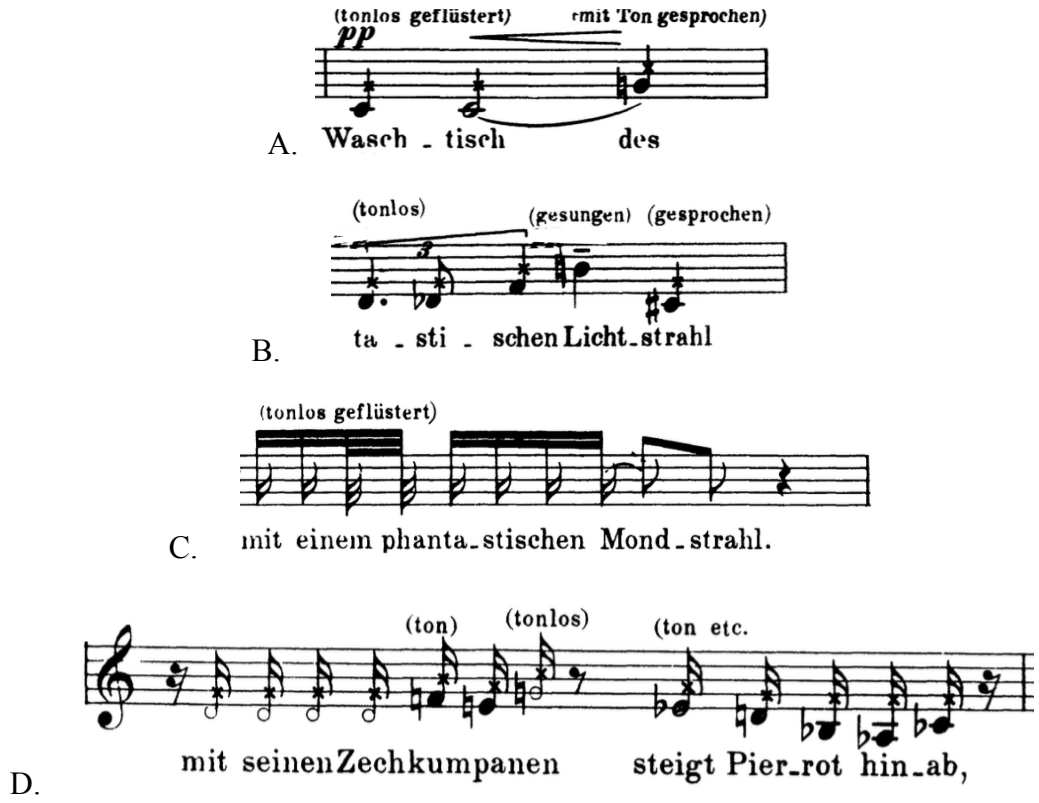

Fig. 3.1 The multiple notations used for *tonlos geflüstert* (toneless whisper) and *tonlos* (toneless) in melodrama No. 3, "Der Dandy" and melodrama No. 10, "Raub." A. is m. 8 of "Der Dandy." B. is m. 17 of "Der Dandy." C. is m. 30 of "Der Dandy." D. is m. 9 of "Raub."

At first glance, these directives seem logical, but when a singer begins the work of trying to execute these directives, she runs up against several issues. First, what does it mean to "project the pitch in an indirect way?" Could a piano, violin, or flute accomplish this task? What exactly did Schoenberg have in mind? Second, what does it mean to "almost" sing "with some tone."[5] In addition, when Schoenberg says "following the clarinet line," does he mean with regard to rhythm, color, or pitch? Finally, the toneless directives seem the least confusing, for a whisper is essentially a toneless vocal production. The trouble comes when Schoenberg marks some passages as a toneless whisper and others as just toneless, each with their own unique notation. It could very well be that the toneless production and the toneless whisper production were to be the same thing and Schoenberg was experimenting with different types of notation, hoping to eventually fall into one that he liked best. If that were the case, one would expect these "sketches" to have fallen away in the editing process. They did not, and so they continue to exist and to confuse.

The second set of instructions Schoenberg wrote was separate from the score and probably intended to serve as a preface (there was no heading). These instructions were handwritten at the bottom of the title page that was to function as the printer's copy. It is unclear if Schoenberg considered these instructions complete.[6] He wrote:

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[5] Bryn-Julson and Mathews include a discussion in *Inside Pierrot lunaire* about Schoenberg's use of the German word *Ton*, both here and in the preface. They note that *Ton* is as ambiguous as the English equivalent *tone.* They write, "*Ton* suggests the general impression of the sound, which would include elements of pitch, timbre, and a general, idiomatic impression – the *sound* of speaking, the *sound* of singing." (Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 59.) This lends even more obscurity to Schoenberg's directions.

[6] Bryn-Julson and Mathews believe that the length (two-thirds of the final preface) and the placement of these instructions suggest that Schoenberg began to write and then stopped when he realized he had more to say than he had space for on the title page. There is no evidence to support this.

> The melody indicated by notes in the Sprechstimme (except for individual particularly designated exceptions) is not intended for singing. Nevertheless, it is the task of the performer to completely represent the rhythm absolutely precisely, but transform the notated melody which concerns the pitches, into a Sprechmelodie, in which the pitches always adhere to the notated relationships among themselves. The difference between singing sung tone and speaking spoken tone is the following: the singing tone holds the pitch unwaveringly; the speaking tone indicates it but immediately leaves it again through rising or falling.[7]

This paragraph, though not in the published edition of *Pierrot lunaire*, provides interpreters with some insight into the issues Schoenberg encountered early in the rehearsal process with the original interpreter, Albertine Zehme. First, the underlining of "not" suggests that Zehme was singing in the rehearsals, even though it is assumed she and Schoenberg agreed that the notation was supposed to indicate spoken pitches. Second, Schoenberg's insistence upon precise rhythm suggests that Zehme was also having trouble with the notated rhythm. Memoirs written by Steuermann and his sister Salka Viertel, who was living with Steuermann at the time, both allude to the amount of time spent rehearsing rhythm and pitch with Zehme. Though speaking may be executed rhythmically, as is evidenced in rap and even the early incarnations of melodrama, is seems Zehme's difficulty with the rhythm unnerved Schoenberg enough that he felt he needed to be forceful in his directions.

The second sentence also includes some interesting language in regard to pitch. Writing that "the pitches always adhere to the notated relationships among themselves," Schoenberg

[7] Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 56. "Die in der Sprechstimme durch Noten angegebene Melodie ist (bis auf einigeeinzelne besonders bezeichnete Ausnahmen) nicht zum Singen bestimmt. Trotzdem ist es Aufgabe des Ausführenden des Rhythmus absolut genau wiederzugeben, die vorgezeichnete Melodie aber, was die tonhöhen anbelangt um eine Sprechmelodie umzuwandeln, in dem die Tonhöhen untereinander stets das im vorgezeichneten [*sic*] Verhältnis einhalten. Der unterschiedes zwischen Singen Gesangs- und Sprechen Sprechen-ton [*sic*] ist folgender: Der Gesangton hält die Tönhöhe unabänderlich fest, der Sprechton gibt sie an, verläßt sie aber sofort wieder durch Steigen oder Fallen."

appears to be saying that it would be appropriate for the *Sprechmelodie* to adhere to the intervals indicated by his notation, even if the exact pitches are not matched. Since specific intervals can only be created with discrete pitches, Schoenberg's statement suggests that the speaking voice is capable of consciously indicating and sustaining a pitch. Speech, however, uses continuous pitch, rather than discrete pitch, as Schoenberg acknowledges with his final sentence of the paragraph. This sets up a contradiction. It is true that there are pitches indicated by the vocal folds when speaking and that those pitches may be perceived by the listener, but, the question arises: can humans speak while consciously choosing the discrete pitches at which their vocal folds will vibrate while continuing to allow for continuous pitch?

Before examining this question, it is best to consider Schoenberg's final, published preface:

> The melody given in the Sprechstimme by means of notes is not intended for singing (except for specially marked isolated exceptions). The task of the performer is to transform it into a Sprechmelodie, taking into account the given pitch. This is achieved by:
>
> > I. Maintaining the rhythm as accurately as if one were singing, i.e. with no more freedom than would be allowed with a singing melody;
> >
> > II. Becoming acutely aware of the difference between singing tone and speaking tone: singing tone unalterably stays on pitch, whereas speaking tone gives the pitch but immediately leaves it again by falling and rising. However, the performer must be very careful not to adopt a singsong speech pattern. That is not intended at all. Nor should one strive for realistic, natural speech. On the contrary, the difference between ordinary speaking and speaking that contributes to a musical form should become quite obvious. But it must never be reminiscent of singing.
>
> Moreover, I stress the following concerning performances:
>
> > It is never the task of performers to recreate the mood and character of the individual pieces on the basis of the meaning of the words, but rather solely on the basis of the music. The extent to which the tone-painting-like rendering of the events and emotions of the text was important to the author is already found in the music. Where the performer finds it lacking,

> he should abstain from presenting something that was not intended by the author. He would not be adding, but rather detracting.[8]

With the published preface, Schoenberg removes the language that suggests that the reciter may execute the melody at any given pitch as long as the intervals remain as written. Instead, he asks the singer to take "into account the given pitch" while transforming the melody into a *Sprechmelodie*. He retained his suggestion that the rhythm be accurate and then extended his explanation of continuous versus discrete pitch. This extended explanation does not, however, clarify the question posed earlier regarding one's ability to consciously choose pitch in speech. Instead, it invites more questions. What is a singsong speech pattern? What is realistic, natural speech and what is the difference between it and "speaking that contributes to a musical form?" Finally, what constitutes "reminiscent of singing?" This paragraph suggests that the voice has multiple distinct ways of functioning, while simultaneously suggesting that these distinct methods of using the voice can easily borrow traits from one another. While speaking and singing are both perceived by the cochlea and produced by the vocal tract, and while they appear to share many traits, do they neurologically function in such a way that one may borrow from the other?

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[8] Arnold Schoenberg, *Pierrot lunaire*, op. 21 (Los Angeles: Belmont Music Publishers, 1990), Preface. "Die in der Sprechstimme durch Noten angegebene Melodie ist (bis auf einigeeinzelne besonders bezeichnete Ausnahmen) nicht zum Singen bestimmt. Der Ausführende hat die Aufgabe, sie unter gutter Berücksichtigung der vorgezeichneten Tonhöhnen in eine Sprechmelodie umzuwandeln. Das geschieht, indem er: I. den Rhythmus haarscharf so einhält, als ob er sänge, d. h. mit nicht mehr Freiheit, als er sich bei einer Gesangsmelodie gestatten dürfte; II. Sich des Unterschieds zwischen *Gesangston* und *Sprechton* genau bewusst wird: der Gesangston hält die Tonhöhe unabänderlich fest, der Sprechton gibt sie zwar an, verlässt sie aber durch Fallen oder Steigen sofort wieder. Der Ausführende muss sich aber sehr davor hüten, in eine »singende« Sprechweise zu verfallen. Das ist absolut nicht gemeint. Es wird zwar keineswegs ein realistischnatürliches Sprechen angestrebt. Im Gegenteil, der Unterschied zwischen gewöhnlichem und einem Sprechen, das in einer musikalischen Form mitwirkt, soll deutlich warden. Aber es darf auch nie an Gesang erinnern.

In the following pages, I will examine these questions by reviewing the neurological research that has been done in various fields related to speech and singing. Significant studies and relevant findings in the fields of aphasia, dystonia, amusia, absolute pitch, and tonal languages, as well as research into the shared neural substrates of speaking and singing will be shared, telling us much about how the brain perceives and produces these two tasks. In the end, it will be clear that the research in these fields strongly suggests that, while speaking and singing share many neural substrates, ultimately there exists a separation in their functionality. The answer to the question posed in the title of this chapter will thus be answered in the negative: it is not possible to perform *Sprechstimme* as Schoenberg described.

Current Cognitive Research on Brain Disorders and Phenomena that Implicate the Relationship Between Speaking and Singing

Broca's Aphasia

Among medical researchers, one of the foremost reasons for observing and studying the differences between speaking and singing is a chronic condition resulting from brain damage called Broca's aphasia. The interest in Broca's aphasia arises because of a patient's ability to sing lyrics while not being able to speak those same words. This has researchers wondering: is there a neurological disconnect between the inflection of speech and the melody of music?

Aphasia, generally, is a communication disorder that results from damage to the parts of the brain that manage language in all its forms, written (reading or writing) or spoken (listening or speaking).[9] Typically caused by a stroke, though damage may occur from disease or trauma, the damage that causes aphasia is typically on the left half of the brain, though it may occur in

[9] "Aphasia," *American Speech-Language-Hearing Association,* date accessed January 9, 2017, http://www.asha.org/public/speech/disorders/Aphasia/.

the right hemisphere as well. Broca's aphasia, also known as expressive or non-fluent aphasia, occurs when an individual's language comprehension is retained even while having trouble speaking fluently, resulting in speech that is "choppy" because the rate and rhythm of the speech does not sound normal.[10] Broca's aphasia typically affects those who have sustained damage to the speech and language area in the inferior frontal gyrus of the left half of the brain otherwise known as Broca's Area, named for scientist Paul Broca who first recognized the attributes associated with this particular localized brain damage (Fig. 3.2).

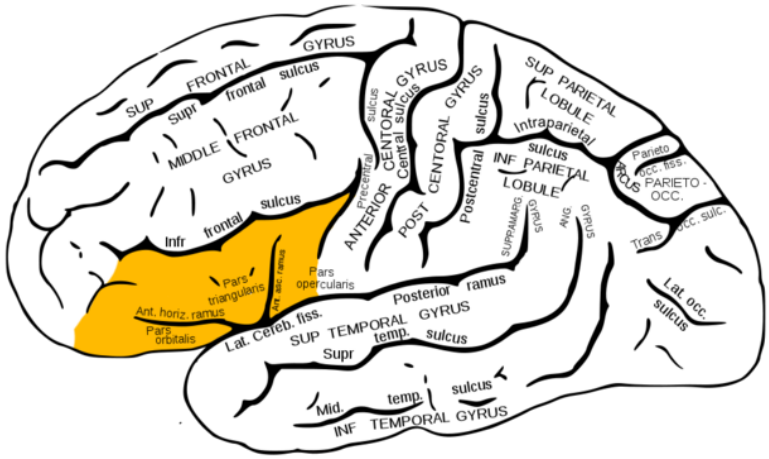

Fig. 3.2 Image of the brain from anterior to posterior. The inferior frontal gyrus is highlighted in yellow. Source: Henry Gray, "Inferior Frontal Gyrus," *Wikimedia Commons*, date accessed January 9, 2017, https://commons.wikimedia.org/w/index.php?curid=9661487.

According to the American Speech-Language-Hearing Association, individuals with aphasia often experience difficulty producing language, whether it is difficulty coming up with the correct word, mixing up words, switching sounds within words, creating made up words, or difficulty stringing together words to create a sentence. They may also have difficulty

[10] "Broca's Aphasia," *National Aphasia Association*, date accessed January 9, 2017, http://www.aphasia.org/aphasia-resources/brocas-aphasia/.

understanding language, especially if it is spoken quickly or spoken while there is background noise. Finally, they may have issues with reading and writing.[11]

As mentioned, the reason Broca's aphasia has become a ground for studying the difference between speaking and singing is because clinicians and therapists have long noted that patients with this type of aphasia can sing words that they cannot speak. Music and rhythm have long served as therapy, helping patients with this condition gain fluency in their speech, and in 1973, Melodic Intonation Therapy, or MIT, was developed. MIT is a treatment that capitalizes on the patient's preserved ability to sing by using the musical elements of melody and rhythm to improve fluency in the patient's speech. It is speculated that this works because it engages the language-capable regions in the undamaged right half of the brain.[12]

In MIT, simple words and phrases that occur frequently in everyday speech are set to a two-note melody where stressed syllables are placed on the higher of the two notes. Meanwhile, the rhythm of the syllables is tapped by the speaker with their left hand, one tap per syllable.[13] As the therapy progresses, the patient works through three different levels with increasingly difficult words and phrases and increasingly fewer cues provided by the therapist (Fig. 3.3). In the beginning, the notes used are specified by the therapist, with some therapists even playing the notes on the piano or guitar. It is suggested that the notes be at least a minor 3rd apart, though

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[11] "Aphasia," *American Speech-Language-Hearing Association.*

[12] Andrea Norton, Lauryn Zipse, Sarah Marchina, and Gottfried Schlaug, "Melodic Intonation Therapy: Shared Insights on How it is Done and Why it Might Help," *Annals of the New York Academy of Sciences* 1169 (2009): 431–436.

[13] It is thought that use of the left hand helps to stimulate the motor areas of the right half of the brain. Maurizio Gentilucci and Riccardo Dalla Volta, "Spoken Language and Arm Gestures are Controlled by the Same Motor Control System," *The Quarterly Journal of Experimental Psychology* 61, no. 6 (2008): 944-957. Amir Lahav, Elliot Saltzman, and Gottfried Schlaug, "Action Representation of Sound: Audiomotor Recognition Network While Listening to Newly Acquired Actions," *Journal of Neuroscience* 27, no. 2 (2007): 308-314.

some therapists have used bigger intervals like a perfect 4th or 5th.[14] Interestingly, when the patient proceeds to the advanced level, the therapist introduces *Sprechgesang*, though it bears little resemblance to Schoenberg's *Sprechstimme*. Nancy Helm-Estabrooks, who wrote the authoritative book on this methodology, describes *Sprechgesang* in this way: "The words should not be sung, but instead, should be presented slowly with exaggerated emphasis on rhythm and stressed (accented) syllables." This serves, then, as an intermediate step between singing and speaking, where rhythm is still important, but the specificity of pitch is no longer so.

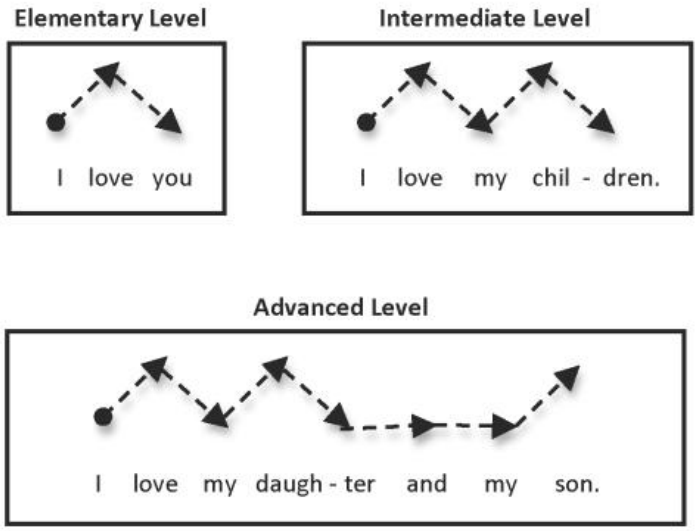

Fig. 3.3 Examples of phrases and melodic contour used in the various levels of MIT. Source: Adapted from Nancy Helm-Estabrooks, Marjorie Nicholas, and Alisa R. Morgan, *Melodic intonation therapy* (Austin, TX: Pro-Ed., Inc., 1989).

Research regarding the efficacy of MIT and the reasons for its success has been relatively limited, mostly because MIT is employed on a case-to-case basis as aphasia presents itself differently for each individual. And, until recently, there have been very few brain scans of

[14] A minor 3rd is a universally recognized interval. Researchers have found it to be used in the speech of nearly all cultures, thus its recommendation. Jeremy Day-O'Connell, "Speech, Song, and the Minor Third," *Music Perception: An Interdisciplinary Journal* 30, no. 5 (2013): 441-462.

individuals before and after therapy. Gottfried Schlaug and colleagues at Beth Israel Deaconess Medical Center and Harvard Medical School have been conducting some research that paired functional imaging (fMRI) with MIT treatment.[15] Their findings, in part, refute some of the speculated reasons for MIT's success, while also supporting other possible reasons. Traditionally, it has been believed that MIT's success was a result of its ability to engage language capable regions in the right half of the brain, traditionally thought of as the areas that manage the more prosodic elements of intonation, change of pitch, and syllabic stress. Aspects of the treatment, specifically the reduction of speed (one syllable per second) and syllable lengthening which mimic singing and the left-hand rhythmic tapping, do encourage engagement of the right hemisphere. That said, singing has been found to be a bihemispheric activity and it appears that the use of MIT engages not only the right hemisphere, but also preserved language areas in the left-hemisphere. In addition, MIT seems to strengthen the connection between the language-capable regions in the right hemisphere through engagement of the right arcuate fasciculus (AF), which is a fiber bundle that connects the temporal and frontal brain regions. The right AF, as will be seen later, proves to be an important structure in regard to pitch.

The knowledge that there is a type of aphasia that preserves language in song but not in speech is already significant for understanding the limitations of *Sprechstimme*. It lends weight, as Schlaug writes, to the possibility of "two routes for word articulation: one for spoken words through the brain's left hemisphere and a separate route for sung words that uses the right or both hemispheres."[16] MIT demonstrates the experience-dependent plasticity of the brain, showing how the brain can build neural connections that were previously missing or damaged, suggesting,

[15] Gottfried Schlaug, et al., "From Singing to Speaking: Facilitating Recovery from Nonfluent Aphasia," *Future Neurology* 5.5 (2010): 657–665.
[16] Ibid., 662.

in turn that the brain may have the capability of developing the neural connectivity needed to execute *Sprechstimme*. It also demonstrates, however, the limitations of the speech and song connection. This is evident in the advanced level step of *Sprechgesang*. In this step, pitch no longer becomes the focus, but rather the natural inflection, or intonation, of speech. This indicates that while intonation in speech is very similar to pitch in singing, there must be some disconnect between the two.

Spasmodic Dysphonia

Spasmodic Dysphonia is a speech condition that belongs to a family of neurological disorders called dystonias. Individuals with spasmodic dysphonia (SD) experience involuntary spasms in the muscles of the larynx when speaking. These spasms cause the voice to sound tight, strangled, breathy, or shaky, essentially sounding like it is cutting in and out.[17] Interestingly, it is often observed that individuals with SD can often sing and laugh easily, at least initially, suggesting that the brain sees speaking and singing as different from one another. With time, some of those with SD may find that it progresses to affect these utterances as well.[18] It has very recently been discovered that some individuals may experience the reverse affliction, where they experience spasm while singing, but not when speaking.[19] This type of dysphonia has been labeled singer's dystonia. And, again, the brain's separation of singing from speaking is evident.

[17] "Spasmodic Dysphonia," *National Spasmodic Dysphonia Association,* date accessed January 10, 2017, https://www.dysphonia.org/spasmodic-dysphonia.php.
[18] "Spasmodic Dysphonia," *American Speech-Language-Hearing Association*, date accessed January 10, 2017, http://www.asha.org/public/speech/disorders/SpasmodicDysphonia/.
[19] Ajay Chitkara, Tanya Meyer, Anat Keidar, and Andrew Blitzer, "Singer's Dystonia: First Report of a Variant of Spasmodic Dysphonia," *Annals of Otology, Rhinology & Laryngology* 115, no. 2 (2006): 89-92.

Dystonias are neurological movement disorders characterized by involuntary muscle contractions that couple with voluntary muscle contractions. They can be general (entire body), segmental (various parts of the body), or focal (one part of the body), such as SD, and can be task or action specific, such as when SD occurs with speech but not singing. Like other dystonias, it is speculated that SD originates in the basal ganglia, either with a lesion or some other type of abnormality (Fig. 3.4). The basal ganglia is responsible for regulating involuntary muscle movement and this regulator seems to go awry in individuals with dystonia, sending incorrect signals in regard to contraction and timing. Currently, there is no cure for SD or other dystonias. Those with SD or singer's dystonia are first treated with botulinum toxin injections into the affected muscle, causing relaxation of that muscle. This treatment may be paired with voice therapy or systemic medication. The neural mechanisms underlying this condition are still somewhat unknown.

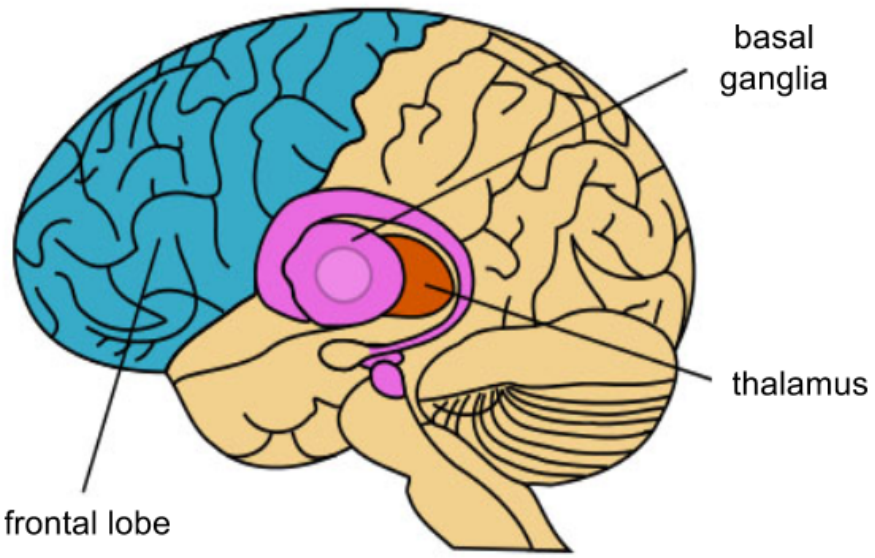

Fig. 3.4 Image of the brain featuring the Basal Ganglia (in purple), the supposed source of SD. Source: Kevin Binns, "An Introduction to the Basal Ganglia," *Fewer Lacunae*, date accessed January 11, 2017, https://kevinbinz.com/2016/01/17/basal-ganglia-introduction/.

Finding the cause behind SD is proving difficult precisely because it does not affect all types of utterances. As has already been noted, singing is generally safe from the effects of SD, but researchers have also found that laughter, crying, yelling, coughing, whispering, and humming may also not be affected by SD.[20] Anecdotal evidence suggests that these more emotional aspects of speech are less affected than normal conversational speech. Even though much is still unknown about this disorder, it is relevant to this discussion in that, again, it seems that the brain considers speaking and singing to be different tasks, since one can be affected by SD when the other is not. This adds additional weight to Schlaug's suggestion that there may be two routes for word pronunciation and, thus, significance with respect to *Sprechstimme*.

Amusia

As a singer, I hear the term tone-deaf thrown around quite indiscriminately, often when what the speaker means to say is that they are a poor singer. While there are many possible reasons for poor singing, among them lack of practice and training, amusia is the condition of being truly tone-deaf. Amusia may be congenital or acquired, such as by brain lesion or damage, but in all cases, it is the inability to recognize or produce musical tones. In relation to *Sprechstimme*, the question arises whether individuals with amusia are still able to hear the pitch fluctuations of intonation even if they are unable to decipher musical pitch. Research in answer of this question has initially turned up positive: amusic individuals can hear the pitch fluctuations in speech. However, some more recent research may be disproving these original findings.

Study of those with amusia has determined that the condition is unrelated to hearing loss, lack of exposure to music, or any obvious nonmusical impairments, whether social or

[20] "Spasmodic Dysphonia: Causes," *National Spasmodic Dysphonia Association,* date accessed January 11, 2017, https://www.dysphonia.org/causes.php.

cognitive.[21] Those with congenital amusia will have difficulty identifying wrong notes, both in their own singing and in music to which they are listening. Additionally, they will be unable to recognize and discriminate between well-known melodies when the lyrics are withheld. In general, those with congenital amusia are often uninterested in music or find it unpleasing. Individuals with acquired amusia may suffer from one of these issues, but not another, depending on the location of the damage. Research suggests that acquired amusia is rather rare, but that may be because people who experience musical deficits after a stroke or other trauma are reticent to report the problem or are not directed to neuropsychologists who study music.

While knowledge of tone-deafness has been noted for more than one hundred years, research in the field of congenital amusia is only quite new.[22] Researchers have found that it is caused by a deficiency in fine-grained pitch perception and that about 4% of the population suffer from this disorder. Acquired amusia, on the other hand, takes various forms, including a form much like aphasia where the individual will lose the ability to produce musical sounds, but still be able to speak. Testing for amusia requires a battery of tests, the most popular being the Montreal Battery of Evaluation of Amusia (MBEA). The MBEA is comprised of six tests that evaluate an individual's ability to discriminate pitch contour, musical scale, pitch interval, rhythm, meter, and memory. Research suggests that early exposure to music, beginning in utero, primes the brain for the musical rules of a person's culture. [23] Babies born with exposure to Western music, therefore, are able to demonstrate a sensitivity to Western musical scales, an ability to differentiate between consonant and dissonant intervals, and the ability to maintain a

[21] Aniruddh D. Patel, *Music, Language, and the Brain* (New York: Oxford University Press, 2008), 229.
[22] Ibid., 230.
[23] Isabelle Peretz and Krista L. Hyde, "What is Specific to Music Processing? Insights from Congenital Amusia," *Trends in Cognitive Sciences* 7, no. 8 (2003): 362-367.

regular pulse. Individuals with amusia will find that these "innate" skills are compromised or non-existent.

An example of one of the tests found on the MBEA is the scale test. Using one of the thirty original musical phrases that were composed specifically for the test, the scale test assesses an individual's ability to identify an "out-of-tune" note. The standard phrase will be played and then that will be followed by either an exact repetition of the phrase or a nearly identical phrase that includes one note that would sound out of tune (Fig. 3.5). The test-taker classifies the example as "same" or "different." Those without amusia generally score very well on these tests (85% or higher), however, amusic individuals score very poorly (78% or lower) (Fig. 3.6).

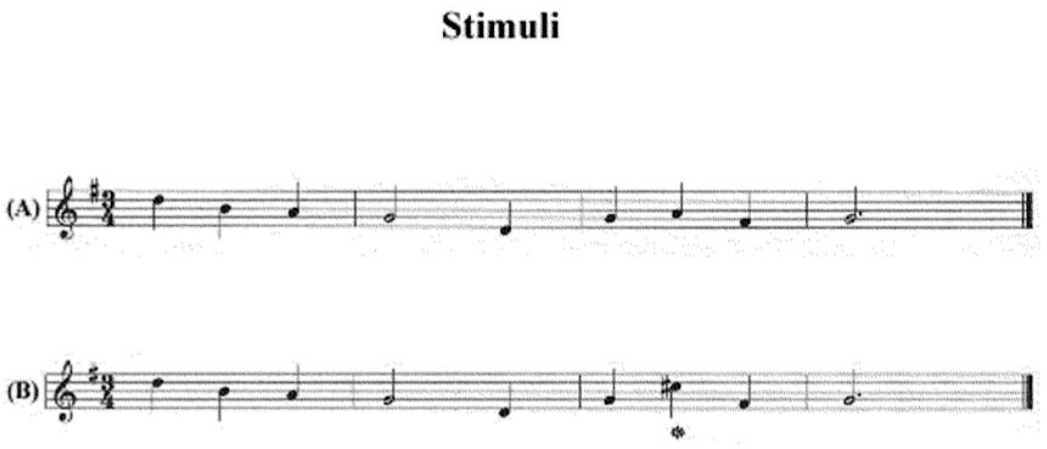

Fig. 3.5 An example from the scale test in the MBEA. Source: Isabelle Peretz, Anne Sophie Champod, and Krista Hyde, "Varieties of Musical Disorders," *Annals of the New York Academy of Sciences* 999, no. 1 (2003): 63.

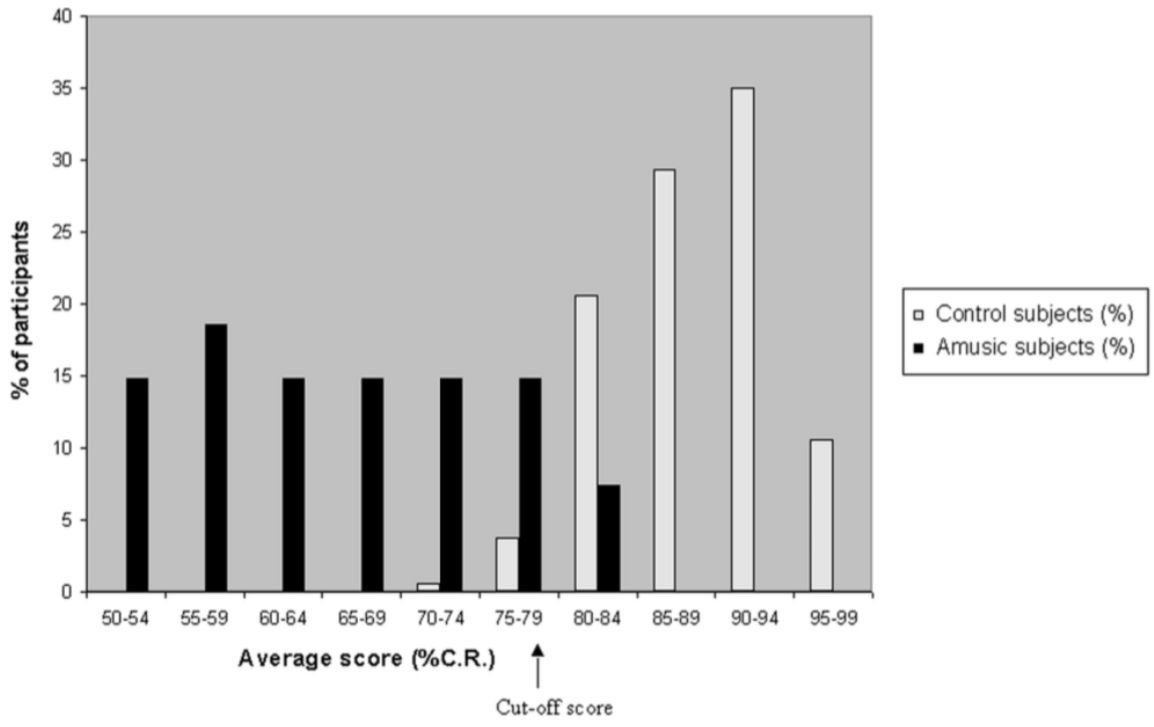

Fig. 3.6 Distribution of combined scores received on the MBEA by self-declared amusic subjects and by normal subjects. Distributions are expressed in terms of percentages of subjects per group. The cut-off score of 78% represents two standard deviations below the normals' mean of 88%. Source: Peretz and Hyde, "What is Specific to Music Processing? Insights from Congenital Amusia," 69.

Research that has studied the functional and structural neural anomalies evident in those with amusia have focused on the right hemisphere of the brain, which is known to be the perception and production center for pitch, as was noted in the discussion on aphasia. Additionally, as noted, rhythm, which has also been found to be affected by amusia, is processed, to some extent, in the right half of the brain. By using MRI, electroencephalography (EEG), diffusion tensor imaging (DTI), and voxel-based morphometry (VBM), researchers have identified several specific neural correlates of tone deafness.

In one such study, Krista Hyde and colleagues discovered that the cortex is thicker in the right inferior frontal gyrus and right auditory cortex (located on the upper part of the temporal lobe) in individuals with amusia (Fig. 3.2).[24] In another study, Psyche Loui and her colleagues have discovered that the right arcuate fasciculus (AF), a structure of axons that connects neural regions of sound perception and production within the temporal, parietal, and frontal lobes, is compromised in tone-deaf individuals (Fig. 3.7). What they have found is that while the superior

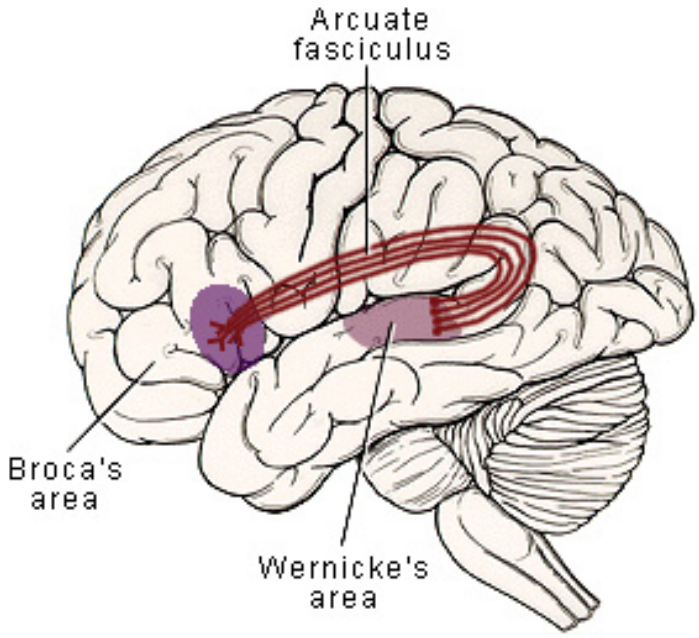

Fig. 3.7 Image of the arcuate fasciculus and the two possible areas within the brain that it connects, both of which are integral so speech and language production. Source: "Arcuate fasciculus, mirror neurons, and memes," *The Biological Roots of Humanity,* date accessed January 14, 2017, https://biologicalrootsofhumanity.wordpress.com/2014/04/24/arcuate-fasciculus-mirror-neurons-and-memes/.

[24] Krista L. Hyde, Jason P. Lerch, Robert J. Zatorre, Timothy D. Griffiths, Alan C. Evans, and Isabelle Peretz, "Cortical Thickness in Congenital Amusia: When Less Is Better Than More," *The Journal of Neuroscience* 27, no. 47 (2007): 13028-13032.

and inferior strands of the AF are visible bilaterally on normal subjects, only the inferior AF is visible bilaterally on amusics.[25] Loui has noted that in evaluating children ages 6-10, the right superior AF, which continues to develop into adolescence, is identifiable, but that it lacks homogeneity across subjects. More research is needed to determine whether this disparity will correlate with pitch discrimination since other findings seem to suggest a strong connection between the AF and congenital amusia in adults.

It is generally believed that congenital amusia is dissociated from issues of speech. (Acquired amusia appears to depend on the scope of the lesion or damage.) Studies that have focused on finding a connection between the two have notably failed. For example, Julie Ayotte and colleagues tested congenital amusics for their ability to discriminate between sentences with differing intonation, as well as their ability to discriminate between melodies that were created from the pitch contours of those sentences (Fig. 3.8).[26] These sentences, like the French example seen in Fig. 3.8, were either phrases that could be vocalized as either a statement or a question, i.e. "It rained today./?," or phrases in which the focus could shift, i.e. "Take the TRAIN to Bruge" or "Take the train to BRUGE." The melodies were created from the pitch contours of the sentences by replacing each syllable with a tone whose frequency was the median of the maximum and minimum fundamental frequency (F_0) for that syllable. If the amusic subjects' pitch deficiencies were restricted only to music, then they would score well with on the intonation portion of the study, but do poorly when it came to discriminating between melodies with different contours. If, however, there exists an overlap between intonation processing and melody processing, then the individuals with amusia would struggle with both tasks.

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[25] Psyche Loui, David Alsop, and Gottfried Schlaug, "Tone Deafness: A New Disconnection Syndrome?," *The Journal of Neuroscience* 29, no. 33 (2009): 10216.
[26] Julie Ayotte, Isabelle Peretz, and Krista Hyde, "Congenital Amusia," *Brain* 125, no. 2 (2002): 238-251.

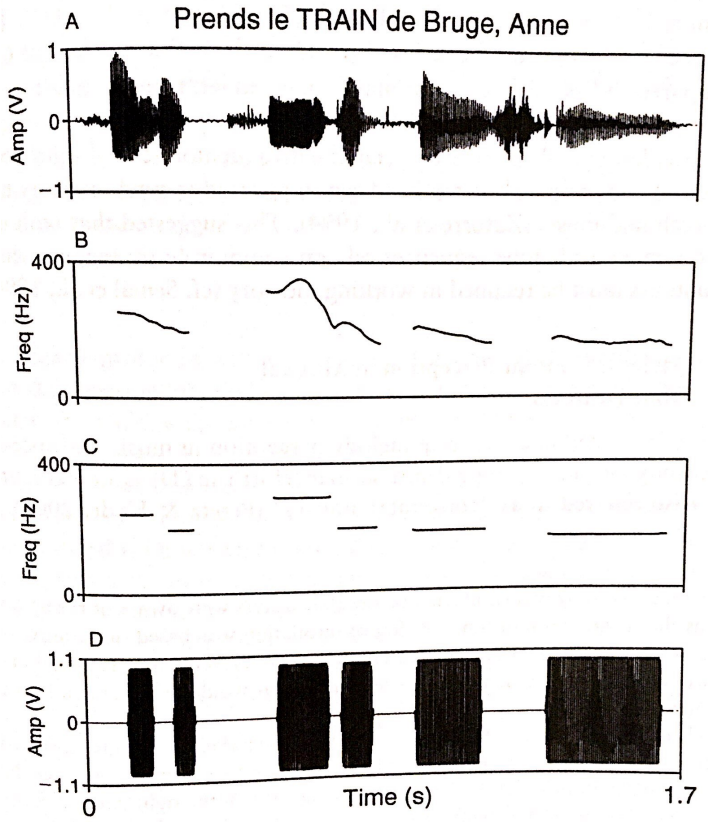

Fig. 3.8 An example of a sentence and the process used to create the corresponding melody found in studies like Julie Ayotte's. This diagram was taken from a study done by Aniruddh Patel and Isabelle Peretz in 1998. Source: Aniruddh D. Patel, Isabelle Peretz, Mark Tramo, and Raymonde Labreque, "Processing Prosodic and Musical Patterns: A Neuropsychological Investigation," *Brain and Language* 61, no. 1 (1998): 132.

The results of this study found that the amusic subjects had no difficulty identifying sentences with differing intonation, while they did have considerable difficulty distinguishing between the corresponding differing melodies, something the controls could do easily. This should prove a dissociation between intonation and melody processing, which, in turn, would support the dissociation of speech and singing processing. However, a 2004 study shows that

amusic individuals did less well on the statement-question portion.[27] Meanwhile, another 2004 study demonstrated that amusic individuals encountered a great deal of difficulty detecting pitch change direction when presented with two pure tones.[28] These two tasks are very similar in what they require of the listener, since both require a listener to notice a change in pitch direction. Aniruddh Patel suggests that this may point to an overlap in intonation and melody processing. His reasoning is based in the psychophysical research that determined, as was mentioned earlier, that amusic individuals have deficiencies in identifying fine-grained pitch changes. Typically, a pitch change needs to be greater than half a semitone for it to be perceived by an amusic.[29] Moreover, if researchers are aiming for a nearly 100% success rate in pitch change identification by amusic subjects (a rate achieved by control subjects at a quarter semitone), the pitch change needs to be greater than two semitones.[30] Since most music is made up of fine-grained pitch changes, it is understandable why amusics have such a difficult time with the perception and production of music. What would the advantage of speech be if there is indeed an overlap in intonation and melody processing? Patel notes that existing research in intonation suggests that two semitones is the minimum amount of variation found between rising or falling pitch accents in speech.[31] Interestingly, this holds true for rising and falling lexical tones in Mandarin.[32] The

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[27] Aliette Lochy, Krista Hyde, Sebastien Parisel, Shannon Van Hyfte, and Isabelle Peretz, "Discrimination of Speech Prosody in Congenital Amusia," In *Poster session presented at the meeting of the Cognitive Neuroscience Society, San Francisco*, 2004.
[28] Jessica M. Foxton, Jennifer L. Dean, Rosemary Gee, Isabelle Peretz, and Timothy D. Griffiths, "Characterization of Deficits in Pitch Perception Underlying 'Tone Deafness'," *Brain* 127, no. 4 (2004): 801-810.
[29] Krista L. Hyde and Isabelle Peretz, "Brains That Are Out of Tune but in Time," *Psychological Science* 15, no. 5 (2004): 356-360.
[30] Ibid., 359.
[31] Patel, *Music, Language, and the Brain*, 235.
[32] Yi Xu, "Effects of Tone and Focus on the Formation and Alignment of F 0 Contours," *Journal of Phonetics* 27, no. 1 (1999): 55-105.

advantage, then, is that much of the pitch movement found in speech exceeds the pitch change threshold necessary for amusics comprehension.

The research in this field reinforces doubts of dissociation between singing and speech cognition, especially in regard to pitch. Patel suggests that rather than a dual-stream processing of pitch, that perhaps the reality is a cognitive stream that shares the majority of its network, but not all. Where that separation occurs within the stream has yet to be determined, however, and that is if it even exists. As will be seen later, there are other suggestions that point to a possible segmenting of the pitch processing and production stream.

Absolute Pitch

A trait much desired by professional musicians, absolute pitch (AP) is the ability to classify pitch into fine-grained musical categories without the help of a reference note. AP's relevance to the relationship between speaking and singing is twofold. First, there is anecdotal evidence to suggest that those with AP cannot consciously choose a pitch at which to speak, thus supporting the theory that there is a disconnect between pitch production for singing and pitch production for intonation. Second, research in the field of tonal languages, discussed more in the following section, has found a connection between those who speak a tonal language and the possession of AP. This finding supports the theory that the disconnect between speaking and singing is a partial separation rather than a full separation.

While most possessors of AP have undergone extensive musical training at a young age, thus learning the labels for the frequencies being identified, there is evidence that some possessors of AP are musical enthusiasts without formal training. These individuals demonstrate AP by consistently singing a song in the correct key or by recognizing when a song is in a

different key than originally performed.[33] Despite early musical training, the possessing of AP does not guarantee musical talent. Additionally, research has demonstrated that possessors of AP do not hear better than those without AP, but rather that they have a skill for long-term pitch memory.[34] A true AP possessor trained in Western music will have internal pitch standards for each of the twelve pitch classes, whereas an individual who has an internal pitch standard for one of the pitch classes, for example A_4, may possess highly developed relative pitch, using A_4 to determine other frequencies heard. It is thought that about 1 out of every 10,000 people have AP.

The origins of AP are under great debate, as some researchers have found evidence for a genetic basis for its presence, while others believe that it is developed during a critical period of auditory development, a period similar to that of language development.[35] Most likely it is a combination of factors. Support for a genetic basis is ascribed to findings of familial aggregation and heightened possession by people of Asian descent.[36] Additionally, it has been found that a higher percentage of identical twins have AP than fraternal twins.[37] Arguments against a genetic basis focus on the inability to know the effects of early and rigorous musical training on individuals with AP. Also, testing for AP generally finds that those with AP do better when tested with pitches played on their own instrument, suggesting that the skill is somewhat

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[33] Richard Parncutt and Daniel J. Levitin, "Absolute Pitch," *Grove Music Online*, *Oxford Music Online*, Oxford University Press, accessed January 16, 2017, http://www.oxfordmusiconline.com/subscriber/article/grove/music/00070.

[34] Patrick Bermudez, "The neural correlates of absolute pitch," PhD diss., McGill University, 2008, 9.

[35] Diana Deutsch, Trevor Henthorn, and Mark Dolson, "Absolute Pitch, Speech, and Tone Language: Some Experiments and a Proposed Framework," *Music Perception: An Interdisciplinary Journal* 21, no. 3 (2004): 339-356.

[36] Peter K. Gregersen, Elena Kowalsky, Nina Kohn, and Elizabeth West Marvin, "Absolute Pitch: Prevalence, Ethnic Variation, and Estimation of the Genetic Component," *American Journal of Human Genetics* 65, no. 3 (1999): 911.

[37] Robert J. Zatorre, "Absolute Pitch: A Model for Understanding the Influence of Genes and Development on Neural and Cognitive Function," *Nature Neuroscience* 6, no. 7 (2003): 692-695.

experience-dependent.[38] Ideal testing for AP involves pure, computer generated tones, the tracking of response time, as well as discrepancy of answers to the semitone.

While there has been much research into the phenotype of AP, little has been done to understand the brain function and structure behind AP. In the last two decades, the use of brain imaging technology has certainly advanced the knowledge of the neural substrates of AP, though the work here is ongoing. At present, the left planum temporale (PT), a cortical area in the superior temporal plane thought to be important to language and music processing, appears to carry a degree of significance in regard to AP (Fig. 3.9). Whether this significance is due to a

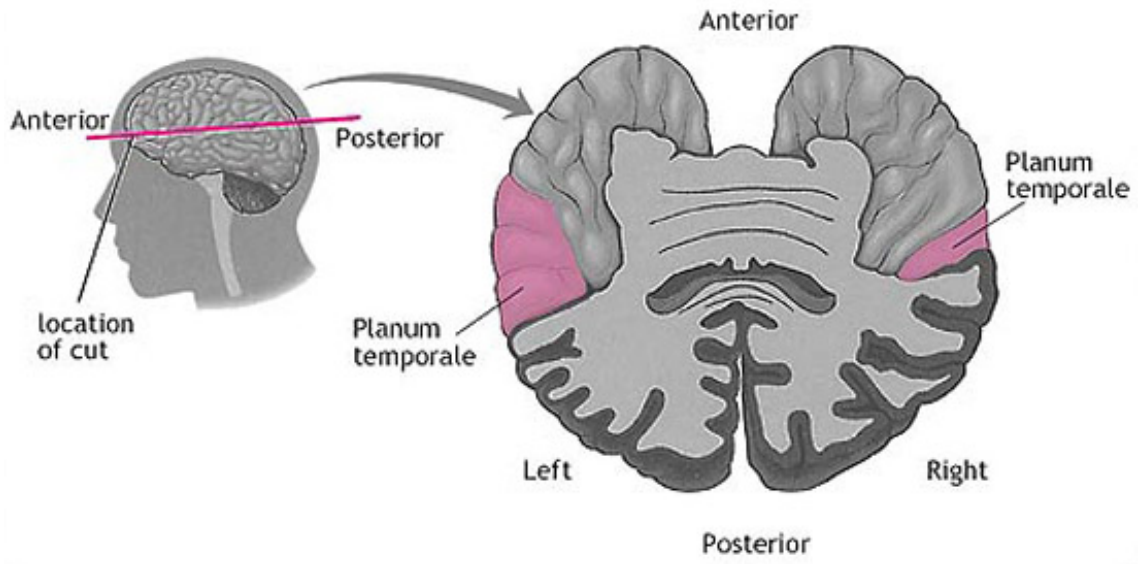

Fig. 3.9 A cross-section of a normal brain showing, in pink, the asymmetry of the planum temporale between the two hemispheres. Source: "Understanding Dyslexia," *Open Learn,* date accessed January 16, 2017, http://www.open.edu/openlearn/ocw/mod/oucontent/view.php?printable=1&id=4291&extra=thumbnail_idp3194592.

[38] Bermudez, "The neural correlates of absolute pitch," 27.

greater leftward asymmetry of the PT in AP individuals (the PT is naturally leftward asymmetric) or whether there is greater volume in the left PT of AP individuals has yet to be determined.[39] Despite these findings, the significance behind the size difference in the PT of AP individuals versus non-AP individuals is still unknown. Meanwhile, functional imaging studies and electrophysiological studies have focused on the brain's activity while listening to auditory stimuli. The findings of these studies continue to implicate the left hemisphere in AP tasks, including not only the PT, but also the parietal and posterior dorsolateral frontal cortices, the latter of which is important with respect to memory.[40] There are currently no studies investigating AP individuals producing pitch.

Because of the dearth of research studying the neural functioning behind AP, the value of AP in regard to singing and speaking must be determined through anecdotal evidence. In regard to *Sprechstimme*, the possession of AP would seem to be an invaluable trait. Jane Manning, in an article describing her experience performing *Pierrot lunaire*, mentions how learning the pitches was not an issue for her because she had perfect pitch, but rather, because of the perfect pitch, "the instinctive reaction [was] to hit the note as seen on the page, and it [was] hard to do anything else."[41] The need to do something else, one would assume, is most likely a reference to Schoenberg's preface suggestion that the "speaking tone gives the pitch but immediately leaves it again by falling and rising." Phyllis Bryn-Julson, another performer of *Pierrot lunaire*, also notes the issues of how long one must stay on the note and in which direction the pitch goes after the singer touches the note, suggesting a need to micromanage the pitch content, issues that Schoenberg clearly did not dictate in his preface or in the music since these issues do not arise

[39] Julian Paul Keenan, Ven Thangaraj, Andrea R. Halpern, and Gottfried Schlaug, "Absolute Pitch and Planum Temporale," *Neuroimage* 14, no. 6 (2001): 1402-1408.
[40] Patrick Bermudez, "The neural correlates of absolute pitch," 21.
[41] Jane Manning, "A Sixties 'Pierrot': A Personal Memoir," *Tempo* 59, no. 233 (2005): 18.

when speaking.[42] Manning echoes Bryn-Julson's concerns of timing and direction and suggests bending notes and "curdling" the sound so that it may not be misinterpreted as singing. However, this talk of sound qualities and color only masks the fact that Manning still discusses pitch as if she is singing it. In revisting Manning's initial quote, words like "instinctive," "hit," and "anything else" give the indication that her brain's first response is to sing. Again, later she writes in regard to the opening theme of "Heimweh," "In this high range, the temptation to sing must be stifled. Pitches, once reached, have to be inflected away *as if talking,* albeit somewhat unnaturally."[43] The use of "as if talking" suggests, again, that it did not feel like talking, and thus it must have been singing.

Casual conversations with others who possess AP reinforce this reading of Manning's comments. All have said that while they are able to sing a pitch asked of them and while they may be able to identify the pitch produced by those around them, whether sung or spoken, none are consciously aware of pitch in their own voice when speaking. When asked to reproduce a specific pitch, an individual with AP will *sing* the pitch, not speak it. While there is no empirical data yet to back this up this anecdotal evidence, research into tonal languages may begin to shed some light on whether individuals can speak at specific pitches. The following section will explore this further. Meanwhile, it does appear that the stories of those with AP support a dissociation at the pitch level between speaking and singing.

Tonal Languages

A tonal language is any language that uses pitch to help clarify the lexical or grammatical meaning of a word. Tonal languages would seem like a natural field for studying the relationship

[42] Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 60-61.
[43] Manning, "A Sixties 'Pierrot'," 20. (Italics my own.)

between speaking and singing because of this pitch usage. Unfortunately, neuroimaging research in this field is scarce and so there is little empirical data to back up some early findings in the fields of linguistics and neurolinguistics. Early findings suggest that while most tonal languages use relative pitch in terms of level tones or tone contours, there may be several languages that use discrete pitch in executing level tones. Empirical proof of this would contradict much of the research discussed thus far by suggesting that there are scenarios in which there is no disconnect between speaking and singing at the pitch level. Additionally, as mentioned earlier, research has also discovered a connection between tonal language speakers and the possession of AP. This, too, supports a stronger connection between pitch in speech and pitch in singing than has been previously discussed. Until further studies utilizing neuroimaging can be done, however, researchers in this field are continuing to view lexical tone as different than musical tone, supporting the dissociation between speaking and singing.

There are various kinds of tonal languages, but most can be grouped into two categories: contour or level. A contour tonal language, like Mandarin, is a language where the pitch contour, or trajectory, of the word determines its meaning. Mandarin has four pitch contours or tones: Tone 1 is a level tone of fixed pitch, Tone 2 has a rising contour, Tone 3 has falling-to-rising contour, and Tone 4 has a falling contour. An often-cited example from Mandarin is the word *ma*. When *ma* is spoken at Tone 1 it means mother, at Tone 2 it means hemp, at Tone 3 it means horse, and at Tone 4 it means scold. A level tonal language uses a level pitch, rather than pitch contours. The majority of level tonal languages only use two tones, though three is not uncommon. Beyond three level tones, a language is likely to begin mixing contour tones and level tones. There are, however, a handful of languages that do use as many as five level tones.

The concept of level tones raises the question of how these tones are established. In general, a language with two tones will use two frequencies that are roughly 2-3 semitones apart from each other. The minimum distance established between tones is usually 1-2 semitones while the maximum is generally four semitones. [44] A language with five tones, if this spacing is consistent, will fill the maximum range for comfortable speaking.

Among level tonal languages, there is another division that exists. The level tones may, like non-tonal languages, exhibit a "downtrend" as a phrase is spoken or the tones may remain consistent throughout the phrase. In non-tonal language, a downtrend manifests itself in the continuous decline of a speaker's F_0 as the sentence progresses, only to be raised again after the speaker takes a breath. In a tonal language that uses declination, a tone's height is only judged by its neighboring tones, so that even if F_0 drops, the relationship between the tones is consistent.[45] This means that the semitone distance, or interval, between tones will shrink as the phrase progresses. Tonal languages where the frequency of the tones remain consistent throughout the phrase are called "discrete level" tonal languages. In "discrete level" languages, William Welmers explains:

> Each level tone is restricted to a relatively narrow range of absolute pitch (absolute for a given speaker under given environmental conditions) within a phrase, and these tonemic ranges are discrete – never overlapping…Thus, in a three-level system, high tone near the end of the phrase has virtually the same absolute pitch as a high tone at the beginning of the phrase, and is higher than any mid tone in the phrase.[46]

Patel notes that Welmers did his research before scientists were able to reliably calculate a speaker's F_0. No researchers have recreated Welmers' studies, so his findings have yet to be

[44] Patel, *Music, Language, and the Brain*, 42.
[45] Ibid., 43.
[46] William E. Welmers, *African Language Structures* (Berkeley: University of California Press, 1973), 81.

backed up by empirical data. Doubt surrounds Welmers' findings because they disregard the influences emotion and volume have on pitch.[47] Regardless, the stability of pitch throughout a phrase invites direct comparisons to music and suggests that the brain may be capable of speaking at specific pitch levels.

In general, researchers have found that tone use in tonal languages is relative to the speaker and that there is little pitch consistency across speakers. Typically, the tones are calibrated with reference to frequencies corresponding to the top and bottom of a speaker's range and this range, in turn, is dependent upon the speaker's volume and emotion level.[48] Because of this variability, most researchers tend to see tonal languages as dissimilar to musical pitch use, though they are a good opportunity for studying the similarities between lexical tone and musical tone.

Despite the widespread belief that there is a dissociation between lexical tone and musical/sung tone, Diana Deutsch and colleagues have suggested that the learning of a tonal language during a critical period of early development creates a precise and stable absolute pitch framework used for speech purposes and that can later be developed into AP. Deutsch and colleagues argue that all may acquire absolute pitch if, as infants, individuals are taught to associate pitches with verbal labels.[49] To prove this, they conducted three experiments testing the consistency of pitch in speakers of Mandarin, Vietnamese, and English over two days. Each day, speakers were asked to read an identical list of words in their native language. The mean pitch of each word was determined for Day 1 and Day 2 and then compared. What was found was that the Mandarin and Vietnamese speakers exhibited a high degree of consistency in the pitch of a

[47] Patel, *Music, Language, and the Brain*, 44.
[48] D. Robert Ladd, *Intonational Phonology* (Cambridge: Cambridge University Press, 2008).
[49] Deutsch, Henthorn, and Dolson, "Absolute Pitch, Speech, and Tone Language: Some Experiments and a Proposed Framework," 339-356.

given word across the two days. Typically, the difference between the two days was a quartertone or less. English speakers fared less well and demonstrated less pitch consistency. However, when the experiment was repeated by Denis Burnham and colleagues, they found that altering the order of the word list on Day 2 of the experiment decreased the consistency of pitch between a given word so that there was less degree of difference between the tonal language and the non-tonal language speakers.[50]

More compelling evidence in support of Deutsch's hypothesis arises in two later experiments. In one, Deutsch and colleagues tested the presence of AP in the communities of two music schools: Central Conservatory of Music in Beijing and Eastman School of Music in Rochester, NY. Each community was given a musical AP test consisting of thirty-six notes spanning a three-octave range. The findings were striking, with 60% of the Mandarin speakers who began music training between the ages of four and five scoring 85% or better on the exam while only 14% of the English speakers who began music training at the same time garnering a similar score.[51] In a similar test with students at USC's Thornton School of Music, students were grouped by their fluency in a tonal language and then by the age of onset of musical training. Those who were very fluent again scored higher than colleagues that were tone fairly fluent, tone non-fluent, and non-tone (Fig. 3.10).[52] Students who were very fluent to non-fluent in a tonal language were all of East Asian descent. Non-tone students were all Caucasian. While this data

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[50] Denis Burnham, Isabelle Peretz, C. Stevens, Caroline Jones, B. Schwanhausser, Kimiko Tsukada, and Sandra Bollwerk, "Do Tone Language Speakers Have Perfect Pitch," In *8th International Conference on Music Perception & Cognition,* Evanston, IL, 2004.

[51] Diana Deutsch, Trevor Henthorn, Elizabeth Marvin, and Hong Shuai Xu, "Absolute Pitch Among American and Chinese Conservatory Students: Prevalence Differences, and Evidence for a Speech-Related Critical Period," *The Journal of the Acoustical Society of America* 119, no. 2 (2006): 719-722.

[52] Diana Deutsch, Kevin Dooley, Trevor Henthorn, and Brian Head, "Absolute Pitch Among Students in an American Music Conservatory: Association with Tone Language Fluency," *The Journal of the Acoustical Society of America* 125, no. 4 (2009): 2398-2403.

is compelling, it does not consider two things: first, the possibility of genetics, and second, the possibility of different musical training systems for young children.

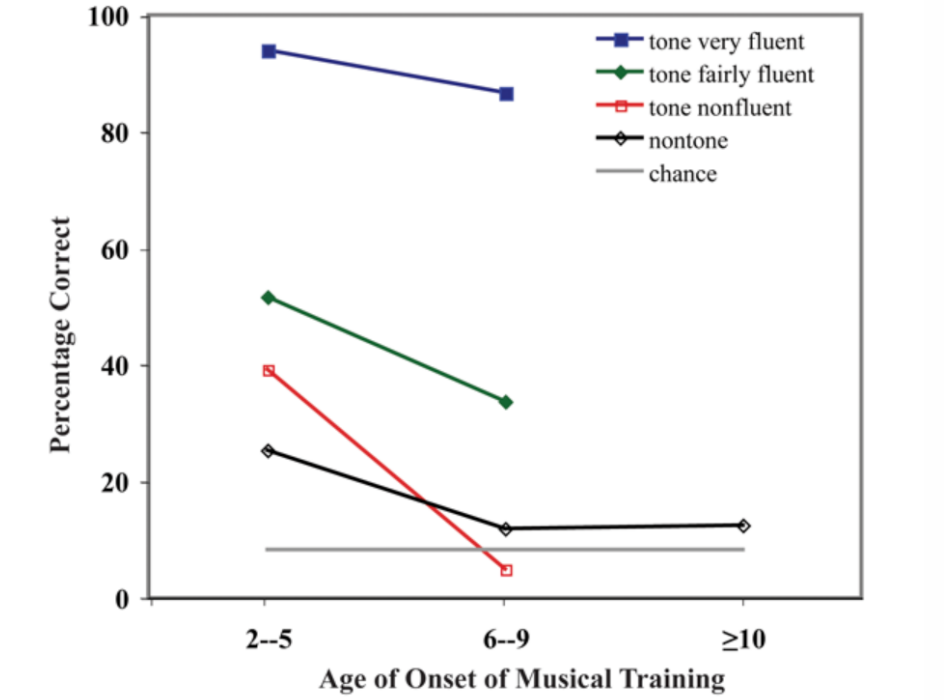

Fig. 3.10 Average percent correct answers on a musical AP test given to students at USC Thornton School of Music by Diana Deutsch and colleagues. Source: Deutsch, Dooley, Henthorn, and Head, "Absolute Pitch Among Students in an American Music Conservatory: Association with Tone Language Fluency," 2398-2403.

Before any hard conclusions can be made about AP and tonal languages, more research that utilizes neuroimaging needs to be done, especially at the early language development stages. The research and anecdotal evidence currently available focuses entirely on the creation of a stable absolute pitch framework likely housed in the left posterior dorsolateral frontal cortices, known currently for its connection to memory. This finding may or may not have bearing, ultimately, on the actual production of pitch, whether spoken or sung. Rather, the experience of

speakers, both of tonal languages and those with AP, expresses more in this regard, and seems to suggest that there is a dissociation between speaking and singing, at least in regard to pitch.

Language Cognitive Systems vs. Musical Cognitive Systems

The last area of neurological research to consider is that which compares language and music. From sound elements like pitch and timbre to rhythm, melody, syntax, and expression, these two systems share many similarities and have inspired many to contemplate their intersection long before the development of modern neurology. In studying these two systems and where they intersect from a cognitive standpoint, researchers hope to better understand the mechanisms that are the foundation for human beings' unique ability to communicate. This field is rich with research, and much of the most recent research is demonstrating just how tightly the various elements of language and music are intersected. Despite this, for the sake of the topic of *Sprechstimme*, the following paragraphs will focus solely on that research that examines pitch in speech and song.

At the heart of a discussion that compares speaking with music, and specifically singing, is prosody. Prosody, which comes from the Greek *prosoidia*, meaning "song sung to music," refers to the patterns of rhythm and sound used in poetry, but can also refer to the patterns of stress and intonation found in speech. The prosody of one's speech unites three categories of information: linguistic (the direct communication of meaning), paralinguistic (the speaker's attitude, as well as sociolinguistic markers such as dialect and class) and non-linguistic (which concerns the speaker's vocal physiology, state of health, and emotional state).[53] An analysis of

[53] Robert Mannell, "Introduction to Prosody Theories and Models," *Phonetics and Phonology, Macquarie University*, 2007, http://clas.mq.edu.au/speech/phonetics/phonology/intonation/prosody.html.

prosody encompasses pitch, duration, volume, and timbre, much like an analysis of music. And, of course, composers generally consider prosody when setting text.

When comparing the pitch aspect of prosody – intonation – with musical pitch, researchers first contend with what Schoenberg rightly pointed out in his preface: music uses discrete pitch while intonation uses continuous pitch. In prosodic speech, there is no defining of tone, nor is there a hierarchizing of tone resulting in scales or intervals. Pitch in speech does not require the accuracy that is needed for music. In fact, if all fundamental frequency modulation is removed from a passage of speech, it does not affect comprehension, even in tonal languages.[54] Meanwhile, altering or eliminating the modulation of pitch in a piece of music has a great impact on quality and meaning. Ultimately, what is important when it comes to intonation is contour, a more coarse-grained outline that captures the rising and falling movement of pitch, rather than the fine-grained, accurate detailing of pitch necessary for music. Contour, however, is a fundamental aspect of music, an aspect vital to processing music before the more complex system of interval identification is developed.[55] When neuroimaging studies examine the processing of contour versus scale, it appears that the neural structures used are different.[56] Because of these findings, researchers have suggested that perhaps there is a dual processing in the brain for music versus speech. This dual processing results in a partial dissociation at the

[54] Aniruddh D. Patel, Yi Xu, and Bei Wang, "The Role of F0 Variation in the Intelligibility of Mandarin Sentences," in *Proceedings of Speech Prosody*, pp. 11-14, 2010.
[55] W. Jay Dowling, "Scale and Contour: Two Components of a Theory of Memory for Melodies," *Psychological Review* 85, no. 4 (1978): 341.
[56] Lauren Stewart, Tobias Overath, Jason D. Warren, Jessica M. Foxton, and Timothy D. Griffiths, "fMRI Evidence for a Cortical Hierarchy of Pitch Pattern Processing," *PLoS One* 3, no. 1 (2008): e1470.
Yune-Sang Lee, Petr Janata, Carlton Frost, Michael Hanke, and Richard Granger, "Investigation of Melodic Contour Processing in the Brain Using Multivariate Pattern-Based fMRI," *Neuroimage* 57, no. 1 (2011): 293-300.

level of pitch, separating coarse-grained processing from fine-grained processing.[57] This hypothesis would correspond with what researchers found in studying amusia, as well. Zatorre speculates that the disruption occurs in the circuitry that connects the auditory cortex to the frontal cortex. The evidence for this is still unresolved, although research with singers is looking promising.

In studying singers, it is noted that a significant difference between speakers and singers, and even other musicians and singers, is a singer's need for auditory and kinesthetic feedback. Monitoring auditory feedback while singing is one of the ways singers ensure accuracy in music's precise framework of pitch and rhythm. Monitoring kinesthetic feedback, what some researchers call the sensorimotor loop, provides information on the body's movements, subglottic air pressure, and the positioning of the articulators. Zatorre writes:

> Imaging studies of trained singers indicate that singing involves specialized contributions of auditory cortical regions, along with somatosensory and motor-related structures, suggesting that singing makes particular demands on auditory-vocal integration mechanisms related to the high level of pitch accuracy required for singing in tune, which is less relevant for speech.[58]

In a neuroimaging study that examined audio-vocal integration with fMRI, Zarate and Zatorre asked subjects to sing a single tone while, for some tasks, the auditory feedback modulated as the subjects sang.[59] This allowed the researchers to identify the neural substrates that merge auditory feedback with vocal control. The subjects were asked to either ignore or compensate for the pitch shift. The subjects were evenly divided between non-musicians and experienced singers. It was found that the singers were more accurate and vocally stable than the non-musicians, while there

[57] Robert J. Zatorre and Shari R. Baum, "Musical Melody and Speech Intonation: Singing a Different Tune," *PLoS Biol* 10, no. 7 (2012): e1001372.
[58] Ibid., 4.
[59] Jean Mary Zarate and Robert J. Zatorre, "Experience-Dependent Neural Substrates Involved in Vocal Pitch Regulation During Singing," *Neuroimage* 40, no. 4 (2008): 1871-1887.

were significant differences between the groups when they were allowed to compensate for a shift in pitch. This suggests that adjusting pitch according to the stimuli is a "default" reaction, which bears some significance on the performance of *Sprechstimme*.

With respect to the neural networks activated for the tasks, the posterior superior temporal gyrus (STG) and the superior temporal sulcus (STS) both showed increased activation during the "simple," "ignore," and "compensate" portions of the study (Fig. 3.2). These areas, found in the auditory cortex, activate bilaterally, though this study and others find that these auditory cortices are more active in the right hemisphere than the left during singing tasks.[60] The STG contains the primary auditory cortex, responsible for processing sound, and areas of the STG are responsible for differing tasks, including the processing of amplitude or frequency changes. The posterior STS has been connected to the processing of changes in the vocal source and spectrotemporal detail. Zarate and Zatorre speculate that the posterior STS may be involved in extracting sound features for vocal stimuli, such as pitch height and intensity. If this is true, then the greater activation of this area in singers during the research suggests that the singers were using the feedback as an indicator of task performance.

This research suggests that greater activation in the auditory cortices, specifically in the right hemisphere, during singing may be of particular importance to the problems posed by the *Sprechstimme* in *Pierrot lunaire*. It suggests that, when singing, the brain is constantly assessing its accuracy in pitch, rhythm, timbre, and so forth. If the performer is attempting to match the pitches indicated by Schoenberg, or even the contour, then areas within the auditory cortex will activate and interrupt speech production in favor of sung production so as to ensure the accuracy of the pitches or contour as notated. This finding also supports the anecdotal evidence shared

[60] Elif Özdemir, Andrea Norton, and Gottfried Schlaug, "Shared and Distinct Neural Correlates of Singing and Speaking," *Neuroimage* 33, no. 2 (2006): 628-635.

earlier by performers with AP. Because of their strong long-term memory for pitch, when encountering specific pitches on the page, the auditory centers in those with AP automatically engage to ensure the accuracy of that pitch. This, in turn, activates singing, rather than speech, processing.

Conclusion

There is still much more research that needs to be done before there is a clear, indisputable understanding of how the brain perceives and produces speech and song. A firmer understanding of the roles the various brain regions play is necessary, followed by research that uses all populations of subjects: non-musicians, trained musicians, singers of every skill level and every genre, and professional actors. Researchers are just beginning to study the experience-dependent plasticity of the brain in regard to music, and, as the last study suggests, this can have significant impacts on the functionality of the brain in trained singers versus non-musicians.

Despite the need for more research, the neurological research does appear to agree on the existence of a dissociation, whether full or partial, between speaking and singing, most likely at the level of fine-grained pitch. Some researchers focus on the differences of speech and song (e.g., Zatorre), while others focus on the similarities (e.g., Patel), but all believe that the brain does indeed separate these two tasks. To have this evidence is exciting because it can finally shed some light on Schoenberg's revolutionary technique. Ultimately, it turns out that what Schoenberg envisioned is not possible: the human voice cannot be projected "in an indirect way" and it cannot take "into account the given pitch" by touching the pitch and then falling away.

Despite evidence proving that Schoenberg's creation is not feasible, this does not change the fact that performers have been creating interpretations of *Pierrot lunaire* and other

Sprechstimme works for more than a hundred years. Some interpretations have perhaps been closer in concept to what Schoenberg envisioned, but all were a compromise. Nonetheless, this finding can help performers know what the limitations are when creating an interpretation of *Pierrot lunaire*: the *Sprechstimme* may either be sung with accurate pitch in a speech-like timbre, or it may be spoken dramatically with a close approximation to contour, but, in the latter case, contour and pitch become indeterminate. With this knowledge, performers can now choose what aspects of the work are most important to them, highlighting those with their interpretation.

Given the findings in Chapter Two, I believe it is necessary to create an interpretation that respects the pitch content of the *Sprechstimme*. This will only be possible through song, so a sung interpretation that does its best to respect Schoenberg's desire for a speech-like timbre would be the goal. This is possible and is explored in the following chapter. Through exercises, discussion, and examples from *Pierrot lunaire*, Chapter Four defines a method for developing a speech-like singing technique appropriate for *Sprechstimme* with the utilization of a strong, flexible chest register, clear and efficient articulation throughout the singing range, as well as the ability to sing comfortably without vibrato. These various facets, coupled with a strong sense of the meaning and drama behind the words, will help a reciter create a musical and authentic interpretation of *Pierrot lunaire.*

CHAPTER FOUR
A Practical Method for Learning and Executing *Sprechstimme*

In Chapter Three, it was discovered that the current research in neurology strongly suggests that there is not a vocal continuum wherein speech and singing serve as two extremes between which the voice can function. Rather, there is likely a partial dissociation between speaking and singing at the level of fine-grained pitch, rendering these actions as separate from one another, despite the fact that the same laryngeal instrument is used to produce both. Any piece that utilizes *Sprechstimme* then, requires the performer to make a choice: either one chooses to speak the words with as close an approximation to the musical contour as possible – specific pitch and interval being impossible since these fine-grained pitch tasks are specific to singing – or to sing the melodies with as close an approximation to speech-like enunciation and timbre as possible.

When it comes to the melodic *Sprechstimme* of Schoenberg's *Pierrot lunaire*, a sung approach seems the most advisable. This is especially true given the findings of Chapter Two, in which Schoenberg's use of inversional symmetry was explored. A sung approach allows a reciter to better execute Schoenberg's frequent use of inversional symmetry, as well as the motivic material found throughout the work between the instrumental ensemble and the reciter, to its fullest extent. Additionally, the act of balancing and bonding a speech-like timbre with a sung execution plays into the sense of balance that is inherent in inversional symmetry as well as the bond that is created between notes balanced on either side of an axis. With a spoken approach, much, if not all, of the symmetrical and motivic material would be lost and listeners would be deprived of a stimulating and vital aspect of the work.

While not all vocal works that utilize *Sprechstimme* require the performer to learn and sing a melody – that varies dependent upon the composer's notation, instructions for the *Sprechstimme*, musical intention, and so forth –, with regard to *Pierrot lunaire*, and my personal performance values, I believe that a sung approach produces the most full, exciting, and authentic realization of the work. In addition, I believe that a well-analyzed interpretation reveals moments within *Pierrot lunaire* where a spoken delivery of the *Sprechstimme* better serves the music, thus proving that both manners of execution are necessary and important.

Regardless of the choices made by the performer, this chapter will demonstrate how a sung delivery of the *Sprechstimme* can be executed with an effective speech-like timbre. Vocal elements such as vowel color, vibrato, registration, as well as enunciation will all be examined and vocal exercises dealing with each element will be shared. By the conclusion of this chapter, performers of *Sprechstimme* will have a better understanding of how to learn and execute this technique to the best of their abilities.

An Approach Towards Developing a More Speech-like Singing Style

Background

In the fall of 2013, I was approached by members of the faculty at The Graduate Center, CUNY about the possibility of performing *Pierrot lunaire*. I had already performed some pieces requiring *Sprechstimme* in the past by learning the vocal line as if it were a melody, before attempting to speak on pitch (all this, of course, before I was aware of the neurological research discussed in Chapter Three). A common criticism of those early *Sprechstimme* performances, however, was that my *sprechgesang* was too *gesang.* This was an appropriate criticism, for what I found was that any attempt on my part to speak the text resulted in a near inability to exactly

replicate the contour of the *Sprechstimme*, much less the actual pitches. I only felt successful in performance when I took a singing rather than speaking approach. Interestingly, my early experiences echoed the criticisms often lobbed by composers, conductors, critics, and audience members in regard to interpretations of *Pierrot lunaire*: either the reciter spoke the text while never matching the contour, nor the pitches, exactly or the reciter sang the text and it sounded too sung.

The Graduate Center *Pierrot lunaire* was coached by eminent pianist Ursula Oppens, who had performed *Pierrot lunaire* numerous times, including with Phyllis Bryn-Julson as reciter and Zubin Mehta as conductor. With such experience, I had faith that Oppens would be a good judge of vocal timbre choices and, indeed, she was less concerned with pitch than with the creation of a speech-like sound and the use of interesting vocal colors. Regardless, it was of great importance to me that I learn how to execute *Sprechstimme* while respecting the pitches on the page as well as the instructions of the preface.

As I prepared, my methodology included speaking the text in rhythm, studying and singing the melody, studying the instrumental score for motives shared between the instruments and the *Sprechstimme*, and speaking the text in rhythm on the indicated pitches, as well as possible. To address finding a more speech-like singing sound and a better understanding of the characteristics unique to speaking, I turned to voice teacher Stephanie Samaras, who specializes in working with Musical Theatre singers, another type of singer who needs to create a conversational singing style. Samaras and I worked with several vocal exercises that helped me create a sound that was speech-like for the listener, even if what I was doing functionally was singing.

One issue that was addressed early in the process was Schoenberg's recommendation to performers that the voice should briefly touch an indicated pitch before rising or falling to the next pitch. Because the vocal folds vibrate during speech, speech does move swiftly through an array of pitches. A listener may even perceive one pitch more strongly than others, however the exact frequencies heard are not consciously selected by the speaker. As was noted in Chapter Three, when a reciter attempts to consciously match indicated pitches, cognitively, she will switch to singing. Therefore, an attempt to follow Schoenberg's directive in addition to the notated pitches, does not guarantee a speech-like vocal quality, but rather results in an ongoing "swoop." This "swoop," characteristic of many performances of *Pierrot lunaire*, bears little resemblance to the natural rise and fall of pitch found in speaking and can begin to sound monotonous. Because of this, Samaras and I decided to use the slides between pitches sparingly, opting instead to explore and incorporate other characteristics of speech more strongly.

The characteristics of speech are such as not to hinder the conveyance of meaning, thus, healthy, natural speech is marked by flexibility of pitch, color, rate, and stress with clear, fluent enunciation. Additionally, speech in the United States and Western Europe generally uses chest register, sometimes called the modal register, as opposed to the head register, sometimes called the falsetto register, though the head register may be used for inflection. In our sessions together, then, Samaras and I worked to strengthen my chest register and my chest-dominant mix so that I could use them more frequently within *Pierrot lunaire*. We also worked to ensure that I could move easily between chest and head registers. We explored to find variance and flexibility of vowel color with a partiality towards the brighter vowel colors of speech, while also removing any vowel modification that one might use in singing to aid resonance and improve color. In most scenarios, refraining from vowel modification promoted better understanding of the text.

This was joined with exercises that encouraged fluid movement in the articulators (notably the tongue, lips, and soft palate), which often move smoothly in singing, but typically favor sustained vowel sounds to facilitate a warmer, larger resonance. The fluid movement of speech translated to what one voice teacher and vocal stylist refers to as the "chew rate," something typically avoided in classical singing.[1] We also focused on the removal of vibrato from the tone except for any notes marked *gesungen*, the identification and application of natural stress patterns in the German text, as well as the specification of vocal timbre and character used for each of the twenty-one melodramas.

In the pages that follow, I will detail a number of the exercises Samaras and I used to help promote these speech characteristics in my sung interpretation of *Pierrot lunaire*. Because these exercises focus on the improvement of very specific singing techniques rather than on how to learn the actual notes of the *Sprechstimme*, I have chosen to use standard tonal music patterns rather than melodic phrases from the *Sprechstimme* or even atonal music patterns. In this way, the singer need not worry about intonation issues while focusing on technique. Several of the exercises offer a middle step, however, that may be explored between working on the initial exercises and beginning to apply the techniques to *Pierrot lunaire*. These middle steps modify the pitch content of the exercise to more closely resemble or even mimic moments from the *Sprechstimme*. The final step demonstrates how to apply these techniques to larger, specific moments within *Pierrot lunaire* so that the execution of the technique is clear. In the end, a

[1] The "chew rate" is a term coined by Neal Tracy, which refers to the relative duration of vowel sound to non-vowel sound (i.e. consonants) in vocal delivery. In singing, the vowel is the main event and so the delivery of it is often lengthened. In speech, the vowel is typically destressed and shortened. Neal Tracy, "Music Theater Rocks! Organic Rock Singing 101 and Beyond," *Journal of Singing* 70, no. 2 (2013): 211.

singer following this approach should have a better understanding of how to develop a speech-like singing technique appropriate for creating an interpretation of *Pierrot lunaire*.

Not included in the following pages is a discussion of how to execute the rhythm properly, despite the fact that this topic features prominently in Schoenberg's preface. As mentioned earlier, the incorporation of rhythm into speech is easily achieved, as evidenced by rap and certain types of melodrama. Accurate rhythm, however, can be difficult for singers to attain since counting and singing or speaking text simultaneously is near impossible. If a singer is having difficulty with rhythm, I suggest finding a way to physicalize the beat so that each beat is individualized. This may mean the singer conducts herself while singing or taps a different finger for each beat. Steuermann had Albertine Zehme alternate between polkaing and waltzing to help her feel the difference between the duples and triplets used in "Der Dandy."[2] The more a singer can physicalize the beat and certain rhythmic patterns, the more successful she will be at performing *Pierrot lunaire* accurately.

Chest Register

A primary concern that must be addressed by any singer learning *Pierrot lunaire* for the first time is the use of chest register. Often the role of the reciter is assigned to, or chosen by, a young head register-dominant soprano. If the chest register is not strong as the performer prepares this part, she will run into difficulties creating a speech-like quality to her sound, not to mention difficulty singing the low notes required for this work. Aidan Soder notes that Christine Schäfer's popular interpretation of *Pierrot lunaire* fails with respect to her use of chest register.[3] While Schäfer used chest register in her interpretation, she would often awkwardly switch (or

[2] Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 50.
[3] Soder, *Sprechstimme in Arnold Schoenberg's Pierrot lunaire*, 104.

"flip") to a heady registration at moments of high musical intensity, creating a noticeable shift in timbre that distracted from the climax of the melodrama. One of the goals of the following exercises is to help the singer create a more gradual shift from chest register to head register, by developing a chest-dominant mix that would result in smoother transitions and more effective climaxes in *Pierrot lunaire*.

Each singer will have individual limits to her chest register. Some singers will have more range to their chest register and some will have less. Strength, which will translate to volume, can be built by working loudly in chest register over a short range, generally F_3-F_4. Range will need to be worked differently, depending on which end of the chest register is being developed. Work on the low end of the chest register will include adjustments to vowel color, as well as a reduction in muscle tension that can occasionally happen as the singer "pushes" for lower pitches. Work on the upper end of the chest register will include the development of a chest-dominant mix and a slow stretching of the vocal folds without the introduction of muscle tension in the throat and tongue.

An exercise that is helpful for building strength in the chest register is a three-note scale (1-2-3-2-1) on an /o/ vowel (Fig. 4.1). With the jaw comfortably released and the tongue relaxed, the lips should be gently rounded into the /o/ shape. If that shape cannot be created without tension creeping into the base of the tongue, then the lips should be released to an /ɔ/ shape. The sound, initiated with a contraction of the abdominal muscles, will be loud with some buzz to the tone.

I recommend that the singer slides from note to note by exhaling more while changing notes. The singer should work in a comfortable range, slowly expanding the range in either direction without the addition of any tension in the base of the tongue, the jaw, or the throat. At

no point should the top notes lighten in volume. If a note cannot be sung without a reduction in volume or a flip to head register, work lower until that can be achieved. Time is necessary since muscle is not built overnight. The notes on the bottom end of the range should not be achieved by "pushing" on the larynx from above (i.e., a forced lowering of the larynx). The vowel should remain neutral to bright in color and the base of the tongue should stay relaxed. The ultimate range goal for this exercise is generally F_3-F_4.

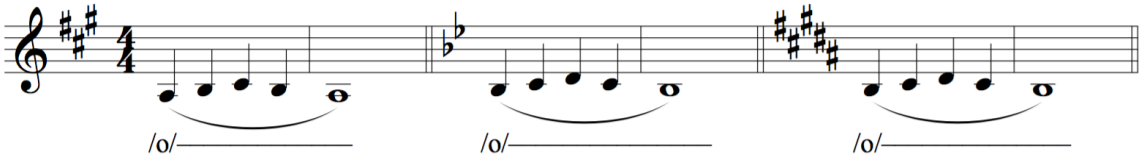

Fig. 4.1 An exercise for strengthening chest register.

As the bottom range of the chest register becomes more comfortable, the singer may modify this exercise to begin practicing for the sung passage in melodrama No. 8, "Nacht." This is where Schoenberg asks the singer to sing E_3-G_3-$E\flat_3$. This rising minor 3rd, falling major 3rd pattern may be sung on an /o/ vowel following the same recommendations for above, eventually working to the notes required for "Nacht."

To work on extending the upper end of the chest register range, I recommend working in a chest-dominant mix (or, simply, chest mix). A glide on an /æ/ vowel with the tongue resting gently on the lower lip can be helpful in finding and building chest mix. The glide can be done moderately at first over the distance of a major 3rd (1-3-1), working eventually to a perfect 5th or octave (Fig. 4.2). The volume for this exercise should be moderately soft, though the singer must continue to sing in chest register or chest mix. As the singer glides up, the intention must be to

stay in chest register, but without getting louder. This will allow head register to mix in with the chest register, thus facilitating a bridging of the chest register across the lower *passaggio*.

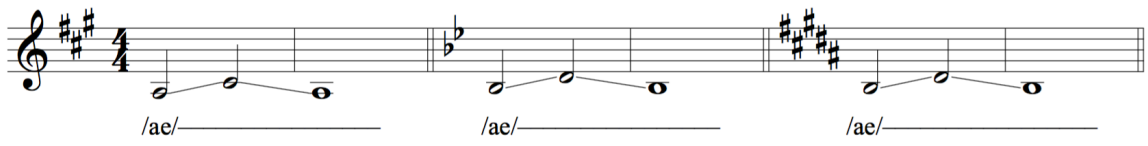

Fig. 4.2 An exercise for developing chest mix.

There are several points to consider while working on this particular exercise. First, the front of the tongue needs to be actively trying to say the /æ/ vowel, while the back of the tongue relaxes down into the throat. If the back of the tongue is elevated, the sound will become muffled and it will become difficult to execute this exercise. Second, the /æ/ vowel needs to be maintained throughout the entire glide. If the singer modifies the vowel, it is usually a sign of tension within the tongue. The singer should check to ensure that the base of the tongue is staying relaxed down into the throat. Third, if the front of the tongue is having difficulty curving slightly to create the /æ/ vowel, the singer should consider sliding a straw lengthwise underneath the tongue. The ends of the straw can be held with the fingertips. Finally, the overly bright vowel color frequently encourages singers to drop the soft palate, creating a nasal timbre. The singer should work to keep the soft palate lifted throughout the exercise.

I recommend beginning work on this exercise at A_3, slowly gliding up over the first passaggio to G_4 or A_4. As the singer becomes comfortable with the exercise, and as the chest-head mix becomes stronger and more flexible, the singer may be able to work as high as D_5, though B_5 or C_5 is a much more realistic expectation, these pitches being the highest frequencies necessary for performing *Pierrot lunaire* comfortably and effectively.

Register Transitions

As the chest register and the chest mix are strengthened, it becomes important to also work on isolating this register from the head register and the head-dominant mix (or, simply, head mix). Quick movement between registers is often required when performing *Pierrot lunaire*, much more so than one might encounter in traditional classical vocal music. The following exercise, developed by Stephanie Samaras and called "the yodel," helps to facilitate a quick switch between registers (Fig. 4.3). This exercise has the singer transition between chest register and head register in quick succession. The exercise is initially sung with leaps of an octave (1-8-1), with the singer singing in chest register on an /a/ vowel on the lower note before leaping to head register on the upper note, sung on an /ɔ/ vowel. The singer leaps four times, ending on the lower note in chest register. The leaps occur at a pace of about 90 bpm. I recommend beginning this exercise around A_3-A_4, repeating at the half step until the singer reaches E_4-E_5.

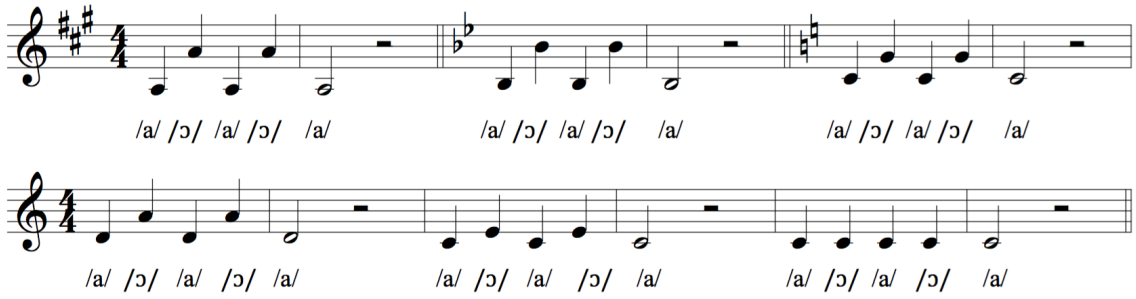

Fig. 4.3 "The Yodel" exercise

The difficulty of this exercise may be increased by working this register transition at the perfect fifth, the major third, and the unison. While executing the exercise, the singer needs to ensure that the muscles of the throat and tongue remain relaxed and unengaged; the singer should

not be trying to move or manipulate the larynx to create this shift in registration. Additionally, the vowel color chosen by the singer should be of equal brightness for the head register note as the chest register note. Finally, like an actual yodel, the singer should be looking to execute a clean switch between chest register and head register; there should be no sliding in this exercise.

One of the more extreme registral shift moments of *Pierrot lunaire* happens in melodrama No. 3, "Der Dandy." Here, the singer must traverse multiple large leaps quickly (Fig. 4.4). I recommend isolating this particular moment and working it on /a/ and /ɔ/ vowels. In addition, the singer may want to work this moment transposed down a minor 3rd, where the shift between head register and chest register will happen a little more automatically, slowly working up to performance pitch.

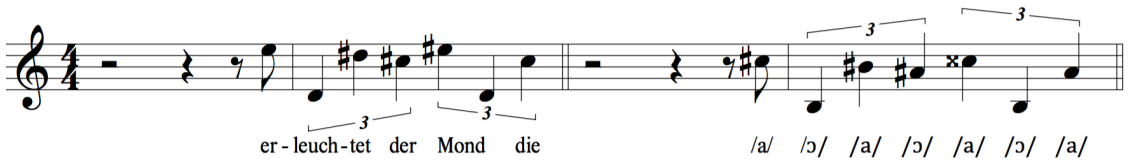

Fig. 4.4 Registral shifts in mm. 3-4 of melodrama No. 3, "Der Dandy." The first two measures are as written, while the second two measures are transposed down a minor 3rd with recommended vowels for initial practice.

In addition to transitioning quickly between registers, the singer must also be able to transition between registers smoothly. The best exercises for unifying registers are slides and scales that require the singer to move from chest register through chest and head mix to head register. In this case, octave slides or nine-tone scales work best. I recommend working well below the *primo passaggio* to get practice moving quickly through scalar passages while in chest register and chest mix. Like the yodel exercise, the singer should not manipulate the larynx to achieve chest or head register. The throat stays relaxed and open as the slides and scales are

being executed. Because thinking about registration while sliding or singing a scale can sometimes make a register transition more difficult, I recommend beginning the slide or scale securely in chest register and then switching the focus to the exhale and vowel color rather than registration. This switch of focus will allow the larynx to move between registers more naturally. Additionally, keeping the dynamic level consistent during the scale or slide will help to keep too much chest registration from rising into the chest and head mix, allowing for an easier and more natural transition.

Practicing these exercises should build strength, freedom, and flexibility in the chest register and chest mix. This, in turn, will help the singer produce the lower tones necessary to sing *Pierrot lunaire* more easily, but also to use the chest register more frequently, creating a more speech-like color to the sung tone.

Vowel Color

The vowel colors of speech, both English and German, tend to be brighter and more distinct than the vowel colors created during singing, especially in singers trained in the classical or operatic tradition, where warmer, more open vowels are the standard.[4] Moreover, German has more vowels that are articulated with the front of the tongue than English, and often German front vowels are more closed than their English counterparts. The vowel sounds missing from English are /y/, as in *über*, /ʏ/, as in *Gelüste*, /ø/, as in *Tönen*, and /œ/, as in *Zöpfchen*, all words

[4] William Odom and Benno Schollum, *German for Singers: A Textbook of Diction and Phonetics*, 2nd Ed (New York: Schirmer Books, 1997), 85. An example of vowel distinction is specifically noted in this book by Odom and Schollum, which says, "Although many singers and voice teachers feel that no *qualitative* distinction should be made between long [dark] and short [bright] *a*, most speakers do make a distinction, and many references reflect the distinction in their transcriptions." I encourage performers of *Pierrot lunaire* to double check the pronunciation of the text to ensure the vowels are accurate and match those of spoken German.

found in *Pierrot lunaire*. Because of this, a singer of this work needs to have an adequate amount of flexibility in the front of the tongue to help produce the front vowels, as well as be comfortable singing at times with a fairly closed mouth and shortened vocal tract, necessary for producing brighter vowels.

The shortening of the vocal tract can be achieved through a more relaxed and smiley shape of the lips, in contrast with the protruded and rounded shape that is encouraged in classical and operatic singing. It can also be achieved by raising the larynx, though this is an inadvisable solution for this particular piece since *Pierrot lunaire* requires the singer to sing so low and a high larynx can impede the larynx's ability to vibrate efficiently on low notes.

To work on building flexibility and achieving a rounded or arched shape to the front of the tongue, I recommend beginning with an exercise that continually rearticulates with the front of the tongue, such as /njæ/ (Fig. 4.5). This particular syllable may be sung over a multitude of musical patterns, such as 5-4-3-2-1 or 5-3-4-2-3-1-2-7-1, though, in general, using a pattern that begins on a higher note and then works lower tends to be better. With a syllable such as /njæ/, a

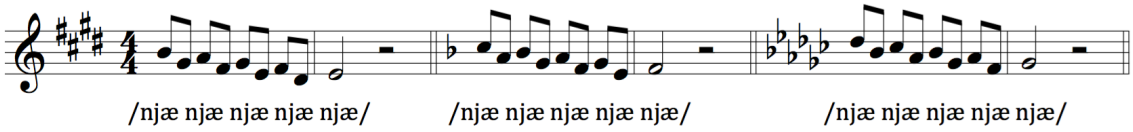

Fig. 4.5 An exercise for building tongue flexibility and strength.

singer may feel compelled to modify the vowel to one that is warmer and more aesthetically pleasing. I recommend not doing this, because this exercise is about strengthening and building flexibility in the muscles at the front of the tongue; it is not meant to be pleasing. Likewise, a singer may also choose to nasalize the sound by lowering the soft palate in an effort to sound

even brighter. This is also not recommended. Nasality can falsely create a bright color without the use of the front of the tongue, thus bypassing the benefits of this exercise.

Another exercise that works to create more flexibility in the muscles at the front of the tongue focuses on the movement between vowels (Fig. 4.6). This exercise encourages the singer to move the tongue as little as possible from the /i/ position as she moves through the five basic vowel sounds. When forming the /i/ vowel, the singer should consciously choose a very bright vowel color with a tongue that is well-rounded toward the front teeth. The lips will be rounded, contrary to what I recommended earlier for bright vowels in general. This rounding, however, eases the transition between the /i/ vowel and the /u/ vowel, which must have rounded lips. The goal is to shift the articulators as little as possible so that the singer can maintain an equally bright vowel color and resonance that is similar throughout the exercise.

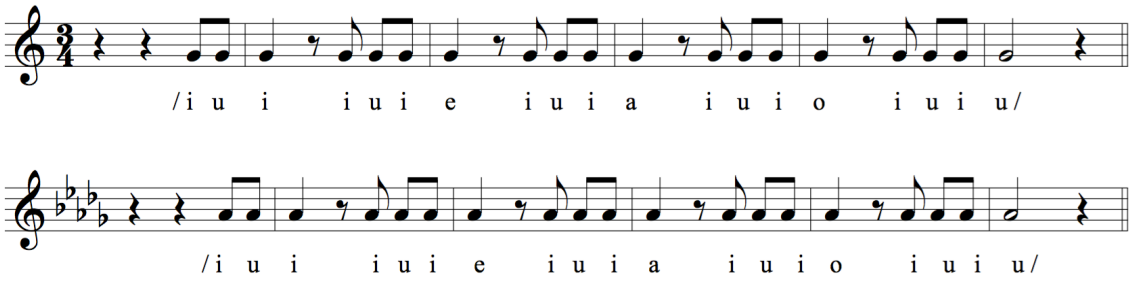

Fig. 4.6 An exercise for vowel color and resonance matching.

The exercise is executed on a single note as the singer alternates between the vowel cluster /iui/ and one of the following vowels sounds: /e/, /a/, /o/, /u/. The difficulty comes in that the tongue will want to move significantly between the front vowels (/i/, /e/, and /a/) and the back vowels (/o/ and /u/), but it will be the singer's goal to not lower or depress the front of the tongue too much on the back vowels. In this way, the vowel color will be maintained and the

resonance will be unified. The singer will also want to watch for a tendency to sing /ɑ/ instead of /a/, which may cause a shift in resonance.

Chew Rates

Once the singer has begun working on flexibility in the muscles of the tongue and is comfortable with the brighter vowel color required to execute *Pierrot lunaire* successfully, the next step is to reincorporate the consonants into the singing. This is important for two reasons. First, the reintroduction of consonants could cause the singer to lose some of the flexibility of the tongue and the bright color that was established. Second, the consonants are an important part of making the singing sound more speech-like. Classical voice training emphasizes the vowel over the consonant, and it encourages the singer to spend more time on a single phoneme rather than moving between the phonemes more equally and fluidly. In the exercises that follow, the singer will be encouraged to observe the movement of the articulators when speaking certain words and then will aim to replicate that movement as accurately as possible when singing.

As the singer works with the brighter vowels and the more fluid movement between vowels and consonants, as well as on her own voice work that emphasizes the musical character of each work, she may find that the voice is less resonant or differently resonant than that found in a classically sung sound. I believe this is appropriate for *Pierrot lunaire*. Because Schoenberg did not write this work with a sensitive ear to the demands of the singer, there are times when this work requires a big sound and a singer is bound to think resonance is the solution. I recommend the singer looks to other ways of being heard, as well as question whether she absolutely must be heard *over*, rather than with, the ensemble in that moment. While it is generally abhorred by classically trained singers, those performing *Pierrot lunaire* may wish to

consider working with amplification. In this way, the reciter will be able to explore different, more speech-like timbres and means of articulating while still being heard by the audience.

This first suggested exercise helps to reintroduce consonants while maintaining a brighter vowel color (Fig. 4.7). The singer will sing the Italian word *vieni* (/vjeni/) five times while singing the pattern 5-4-3-4-3-2-3-2-1-2-1-7-1. This exercise easily keeps the voice forward and relaxed because the vowels are all front vowels and the consonants (/j/, /n/, and /v/) are all articulated at the front of the mouth. Perhaps the most difficult part of the exercise is the temptation for the singer to open the mouth too much on the /e/ vowel. This vowel must be very closed, more like the German /e/, and the movement should be limited to the front of the tongue. The jaw movement should be very minimal.

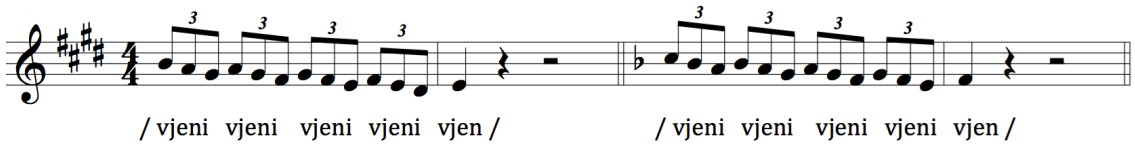

Fig. 4.7 An exercise with bright vowels and forward placed consonants.

Another exercise that helps to reintroduce consonants while maintaining a bright vowel color is sung on the word /glakıta/ (Fig. 4.8). This made-up word, created by Jeannette LoVetri, another voice teacher who specializes in work with Musical Theatre artists and singers of contemporary commercial music, is helpful because the consonants alternate between using the back and front of the tongue. This exercise challenges the singer to use more muscles in the tongue, while still maintaining a bright vowel color, especially on the /a/ vowel, which could tend towards the /ɑ/ vowel. It is recommended that this exercise be sung on 1-8-5-3-1 with /glakıta/ sung on each note. This particular pattern is recommended because the octave leap will serve as an indicator as to whether the singer adjusts the articulators for higher pitches. The

articulator movement for this word should be the same, whether sung in the lower octave or the upper octave. To help counteract the desire to shift the articulators to find more space, this exercise should be done quickly; the singer should aim to complete the exercise at quarter note = 140 bpm.

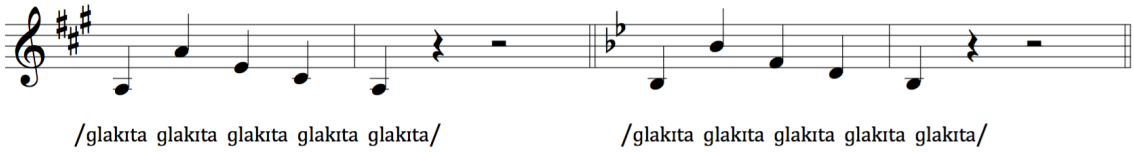

Fig. 4.8 An exercise with bright vowels and forward and backward placed consonants.

As these exercises become more comfortable, the singer may move on to exploring the movement of the articulators in speaking versus singing. This can begin simply by taking short phrases and speaking them with greater inflection, being sure to incorporate both the chest and head register into the speaking voice. Phrases such as, "Who? Me?", "Oh, no!", and "But, why?" are great for moving from chest register to head register or the reverse. Schoenberg uses this action frequently, and so the singer can try alternating these more familiar phrases with similar phrases from *Pierrot lunaire.* Figure 4.9 illustrates a number of these examples. When transitioning to the sung examples of *Pierrot lunaire*, the singer should be careful to articulate the words on higher notes no differently than if they were in a more habitual speaking range.

I also recommend practicing tongue twisters, especially ones in German, which will help the articulators to gain freedom and flexibility. In saying any tongue twister, the use of a wide pitch range will help to ensure that freedom and flexibility regardless of pitch. I particularly like this German tongue twister for its continual changes in vowel sounds:

Graben Grabengräber Gruben?
Graben Grubengräber Gräben?

Nein!
Grabengräber graben Gräben.
Grubengräber graben Gruben.

In addition, the following German tongue twister fits very well to music: *Im dichten Fichtendickicht sind dicke Fichten wichtig.* It can be sung to the following pattern: 7-1-2-3-2-3-4-3-4-5-4-3-2-1 (Fig. 4.10). The benefit of this particular tongue twister is the prevalence of bright vowel sounds (/i/, /ɪ/, and /ɛ/) paired with consonants that use the back of the tongue (/k/ and /ç/). It also alternates frequently between voiced and unvoiced consonants, which can prove to be quite tricky. The more flexible the tongue becomes, the easier it will be to execute this exercise and many of the passages within *Pierrot lunaire*.

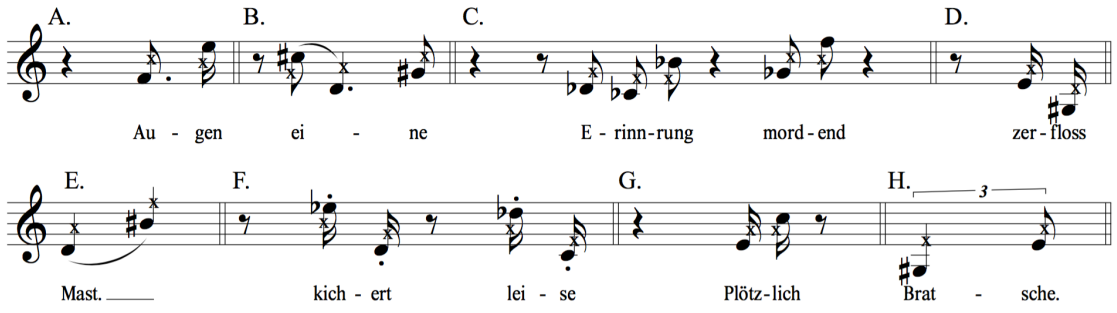

Fig. 4.9 Examples from various melodramas in *Pierrot lunaire* that use a quick register switch between chest and head registers, much like when speaking the phrases "Who? Me?" or "On, no!" A. m. 37 of No. 1 "Mondestrunken," B. m. 11 of No. 2 "Colombine," C. m. 13 or No. 8 "Nacht," D. m. 5 of No. 9 "Gebet an Pierrot," E. m. 8 of No. 9 "Gebet an Pierrot," F. m. 24 of No. 17 "Parodie," G. m. 7 of No. 18 "Der Mondfleck," and H. m. 33 of No. 19 "Serenade."

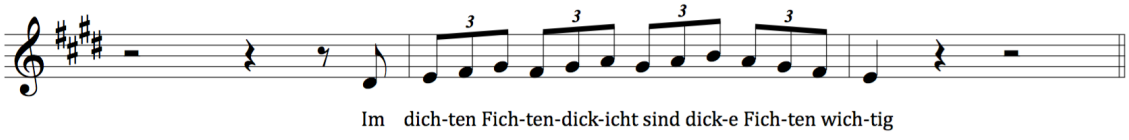

Fig. 4.10 A German tongue twister exercise.

Exercises that focus on more speech-like vowels and enunciation will help the singer produce a singing style that more resembles speech. Additionally, if the singer spends time honestly assessing the difference between how they speak words and how they sing words, attempting to narrow that gap, the more successful they will be when singing *Pierrot lunaire*.

Vibrato

Vibrato is a musical phenomenon that is unique to singing; it has yet to be found in a spoken language.[5] Most performers of *Pierrot lunaire* agree that vibrato should be eliminated from *Sprechstimme* and used only when a passage is marked *gesungen*.[6] This is not the easiest of tasks, however, for often a tone will vibrate when a note is sustained or particularly high. Because vocal researchers are still unsure as to the exact cause of vibrato, there are varying opinions on how to safely and consciously eliminate vibrato from a tone. Most voice scientists and voice teachers agree, however, that straight tone, as it is commonly known, is usually elicited through a balance of subglottic air pressure and air flow. It is known that when subglottic

[5] It is interesting to note that Schoenberg made no mention of vibrato in his famous preface. It would be an obvious trait to ask singers to remove from their singing since that is the only place it is found, as was observed by Peter Stadlen, "Schoenberg's Speech-Song," 10. Instead, Schoenberg focuses on not remaining on a pitch for long, but rather touching and then sliding between the indicated pitches. Sliding is present in both speaking and singing and Udo Will and Catherine Ellis found that there is at least one culture in the world whose music is distinctive for its slides. Udo Will and Catherine Ellis, "Evidence for linear transposition in Australian Western Desert vocal music." *Musicology Australia* 17, no. 1 (1994): 2-12.

[6] There has only been one performer who has gone on record to say that *Sprechstimme* can include vibrato. In "A Sixties 'Pierrot': A Personal Memoir," Jane Manning states the opposite of what most performers believe, "I was especially anxious to avoid the monochrome effect of continual crooning undulations. A full-throated vibrato could be employed for some of the more impassioned and violent sections, for instance." Manning, "A Sixties 'Pierrot'," 17-25. While Phyllis Bryn-Julson does not recommend vibrato use, she does note that it may make performing notes above $G^{\#}_{5}$ more comfortable. Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 81.

air pressure increases, the slower breath flow rate induces a firmer glottal closure.[7] It is also noted that in non-vibrato singing, there is firmer glottal resistance from the muscle activity necessary within the larynx to eliminate vibrato.[8] Which of these two actions causes the other is uncertain, but regardless, it has been found that the increased subglottic air pressure helps to create a non-vibrato tone that can be used effectually in *Pierrot lunaire*.

In a recent dissertation on straight tone singing, Danya Katok suggests that increasing subglottic pressure may result in pressed phonation and recommends that a singer should create straight tone by lowering subglottic air pressure and air flow.[9] This should also create a firmer glottal closure, but volume and breath control will be compromised. This approach may be used in quieter, shorter phrases of *Pierrot lunaire*, especially if the performance utilizes amplification.

For singers with little practice in creating straight tone, it is recommended that they begin exploring straight tone with onset exercises (Fig. 4.11). Initial explorations should use an /u/ or /i/ vowel, because the closed nature of these phonemes create some back pressure that helps to stabilize the larynx from above. Over time, however, all vowel sounds should be tried. One recommendation in regard to vowel color: be sure the vowel is bright in color and that the tongue is rounded high and forward towards the teeth. It is easy to equate straight tone with the darker, more hollow sound of a boys' choir, but that color will probably be of little use to the performer in *Pierrot lunaire*, although it certainly could be used on certain words for effect.

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[7] Meribeth Bunch Dayme, *Dynamics of the Singing Voice*, 5th Ed (Vienna: Springer Science & Business Media, 2009), 85.

[8] Shigenobu Iwata and John Large, "Aerodynamic Study of Vibrato and Voluntary "Straight Tone" Pairs in Singing," *The Journal of the Acoustical Society of America* 49, no. 1A (1971): 137-137.

[9] Danya Katok, "The Versatile Singer: A Guide to Vibrato & Straight Tone," (2016), http://academicworks.cuny.edu/gc_etds/1394. Katok's dissertation should be visited for more exercises that elicit a straight tone through low subglottic pressure and air flow.

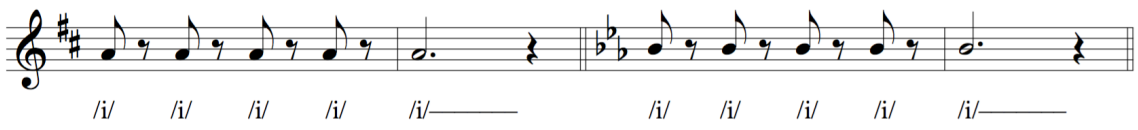

Fig. 4.11 An onset exercise for straight-tone.

When performing the onset exercises, the singer should choose a note in the middle of her range, singing the note five times with a rest in between each for a breath. The fifth time, the note is sustained for three beats. In a traditional onset exercise, the focus is on the coordination of the breath pressure with the vibration of the vocal folds. In this particular version, the point of focus does not change. It is only different in that the singer will aim for the slightly stronger breath pressure that will elicit a straight tone. The end of each note is again coordinated with the release of the breath pressure, much like in traditional onset exercises. In the straight tone version, however, the singer must be careful not to relax the pressure gradually, especially during the sustained note, because then vibrato will creep into the tone. The singer should work higher and lower in her range, in both chest and head register, always moving by half step.

Straight tone can also be explored in vocal exercises that incorporate a tenuto, which allow the singer to "lean" into the tone. One such exercise is a /ja/ exercise used by Samaras (Fig. 4.12). This exercise utilizes a descending nine-tone scale that breaks the first six notes into pairs where the first note is slurred into the second note, which is marked staccato. The final pair of notes are also marked staccato. The first note of each slurred pair should be sung without vibrato to create an expressive "lean" into the note, which is released with the movement to the staccato note. The straight tone is again created through the use of a higher breath pressure, just like in the onset exercises.

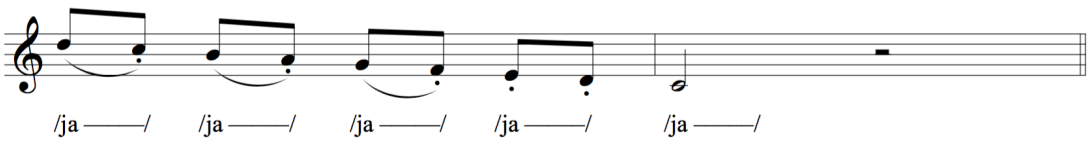

Fig. 4.12 A scalar exercise for straight-tone.

It should be added that the execution of both exercises, and any exercise that practices straight-tone singing, should be performed in such a way that there is no excessive tension in the muscles of the jaw, mouth, tongue, pharynx, and neck. Current research is showing that non-vibrato singing may cause fatigue in the intrinsic muscles of the larynx, and excessive tension in the overall system may only exacerbate that fatigue.[10] Work on eliminating vibrato from the singing tone will, however, put at the singer's disposal one of the most effective techniques for helping a sung interpretation of the *Sprechstimme* sound more speech-like in style.

Application of Approach to *Pierrot lunaire*

The exercises shared above are the initial steps to helping a singer create an interpretation of *Pierrot lunaire* that is sung, so that the pitch content will be accurate, but where the singing is as speech-like as possible, so as to honor Schoenberg's creation of *Sprechstimme.* In this section, I hope to elucidate where certain exercises can be of help when executing various moments within the work. Many of the moments focused on in the following pages use the inversional symmetry that was discussed in Chapter Two, highlighting why a sung approach to *Pierrot lunaire* should be seriously considered by any performer attempting this work. When appropriate, I will offer suggestions for ways in which the performer may unite the technique

[10] John Nix, "New Voices in Research: Vibrato and Non-Vibrato Singing: Who teaches it? How do they teach it? Does it make a difference?," *The Choral Journal* 53, no. 9 (2013): 57-66.

with the interpretation and realization of these moments. While this section will, by no means, be exhaustive in its coverage of difficult passages within *Pierrot lunaire*, it will provide singers with insights into how they might proceed in applying the lessons learned from the exercises to create an exciting interpretation, while also honoring the complexities of the vocal line.

Additionally, this section provides the reader with audio files of the examples used within the following pages. Each audio file includes three versions of the example discussed. The first version of each example will be a sung rendition. The second version will be a spoken rendition. The third version will be a sung rendition that utilizes the techniques suggested in this chapter with the expectation that they create an interpretation that appears more speech-like. It is hoped that these audio files will assist the reader in coming to their own conclusions in regard to an appropriate interpretation of *Pierrot lunaire*.

As with any work, the first steps to creating an interpretation include becoming familiar with the melody line and developing a deep understanding of the poetry. Discussed in the second chapter is my own interpretation of *Pierrot lunaire*, developed with an eye on the interpretations of other scholars, that views the work as a statement of one artist's journey in managing the demands on twentieth-century artists and the effects these demands have on the highly sensitive artist. In the case of *Pierrot lunaire*, the moon appears to be Pierrot's muse, but, like any muse, it appears to be fueled not only by Pierrot's imagination, but also the societal demands he encounters. This means the muse is both helpful and hurtful at various points throughout the work. My interpretation is tied to Schoenberg's use of inversional symmetry, as well as the technical demands of the *Sprechstimme*. As the performer studies the music and reads the poetry, understanding of the context in which *Pierrot lunaire* was written will color the way the text is viewed, and later performed.

While I believe learning the melody line is of great importance to developing the best interpretation of *Pierrot lunaire*, I also believe reading the text aloud, as if each poem were a monologue, is of vital importance. If the performer is not a German speaker, this is of even greater importance because the language must appear natural. The articulators must know the words and move through them naturally. This is especially true of melodramas Nos. 3, 5, 10, 12, 13, 17, and 18, where the breakneck pace of the music can cause tongue-tying in even the most experienced performer.

Developing a spoken interpretation of the poetry will also help the singer decide what words are the most important words to stress within this, sometimes, cryptic text. As an example, I offer the very first line of the work, *Den Wein, den man mit Augen trinkt*, meaning "The wine that one drinks with the eyes." There are four words that could be stressed in that statement: *Wein, man, Augen,* and *trinkt*. Which word gets stressed is completely up to the performer and each will evoke a different response from the listener.

As the performer becomes better acquainted with the text, then it is time to explore characterization and the coloring of certain words to help portray mood, emotion, and atmosphere.[11] Rather than focusing on the rising and falling that Schoenberg advocates for in his preface, the performer could try experimenting with contrasting vocal timbres, different tempi, various kinds of articulation, and so forth. The more open the performer is to alternative vocal possibilities, the richer the interpretation will become. I firmly believe *Pierrot lunaire* does not

[11] The performer should remember that Schoenberg seemed to have an aversion to overacting. There is evidence that he asked Albertine Zehme to only be as excited as a car insurance salesman when it came to melodrama No. 13 "Enthauptung." More importantly, Schoenberg states in the preface that all that needs to be expressed is in the music. I recommend the performer listens carefully to the music when creating the character for each piece.

need fancy lighting, costumes, projections, or gimmicks to appeal to an audience. Rather, it needs a performer who is committed heart and soul to the text.

Chest Register

After the performer feels comfortable with the melody and the text is assimilated, it is time to begin work on creating a *Sprechstimme* interpretation that, though sung, is as speech-like as possible. Ideally, the singer will have already begun to incorporate some chest register into the learning of the melody. In general, any pitches at or under F_4 can be sung in chest register or chest mix. The first melodrama, "Mondestrunken," is a perfect example of how the voice needs to be able to move seamlessly back and forth between chest and head registers, as phrases frequently use both chest and head registers (Fig. 4.13).

If at first this movement feels stilted, I recommend three courses of action. First, the singer should continue to work on strengthening chest register until it comes more naturally. Second, the singer should go back to speaking the text with a great range of inflection, trying to match the contour of Schoenberg's melody as best as able. Lastly, I recommend working slowly to incorporate the text and the melody, moving back and forth between the notes that lie on either side of the chest/head divide until the voice feels more comfortable with that action.

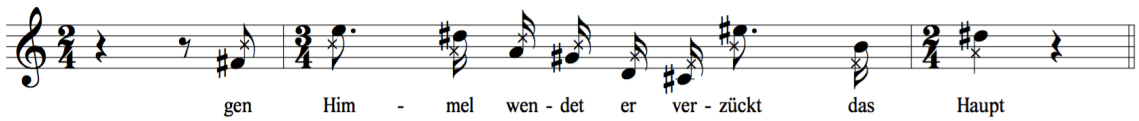

Fig. 4.13 Measures 32-34 of melodrama No. 1. Audio

https://archive.org/download/Audio413/Audio413.mp3

In the case of the "Mondestrunken" example, the singer may find it comfortable to sing the $F^{\#}_4$, the D_4, and $C^{\#}_4$ in chest register, but the notes that follow will require head register. This is a place where Samaras' yodel exercise is very effective. The chest register can help to suggest a more spoken delivery while still allowing the singer to produce the correct pitches, thus helping to preserve the inversional symmetry Schoenberg composed for this moment. Chest register at this moment also helps the singer to be heard over the thick orchestration that Schoenberg writes. In the audio files provided, the reader will hear how the spoken version, while respecting the contour of the phrase, does little to suggest the symmetry found around *wendet*, discussed in depth in Chapter Two.

In the melodramas that are more dramatic, the singer may wish to use the chest register on pitches higher than F_4. An example of this is in melodrama No. 11, "Rote Messe" (Fig. 4.14). The poem of this melodrama paints Pierrot as a Christ-like figure who dramatically offers his beating heart, symbolic of his art, to a congregation of followers. In the middle of the melodrama, just as Pierrot rips open his garment, the majority of the ensemble plays continuously and all are marked *ff-fff* in volume. Unfortunately, the vocal line sits right in the middle of the singer's range, an area in which most sopranos do not have a great deal of power. This is when use of chest register and chest mix can be of great help.

Beginning in mm. 11-12, not pictured, the singer should be certain to sing the two D_4s that appear in chest voice, for these will help to anchor the voice. The following phrase beginning in m. 12, *die Priesterkleider*, is all set in a range where the singer should feel comfortable singing in chest register, while mm. 14-15 will provide a greater challenge. Because of the *Sprechstimme's* volume marking, as well as the volume of the ensemble, the singer will feel tempted to sing in full chest register. For most voices, however, the B_4 of *Abendmahle* will

prove too high for full chest register and the voice will break into head mix. Rather, the singer should focus on decreasing the volume just slightly and brightening the /ɑ/ vowel of *grausem* to /a/. This, in turn, should allow the voice to change to chest mix in m. 14, especially if the singer has been working on the /æ/ glides discussed above. If the singer is careful to maintain that mix on the second syllable of *grausem*, then the singer should find it easier to sing the first syllable of *Abendmahle* in chest mix, thus creating an exciting and effective climax to the melodrama. If the singer is feeling really ambitious, she can also attempt to sing the *beim* of m. 16 in chest mix before switching suddenly to pure head register on the *Blendeglanz*.

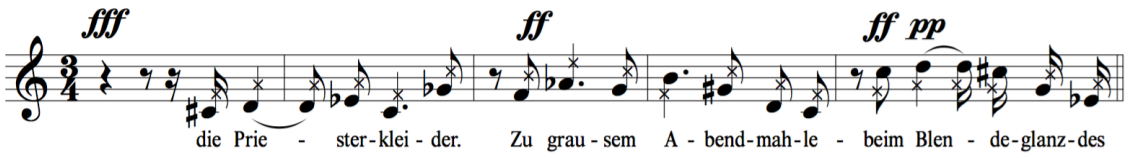

Fig. 4.14 Measures 12-16 of melodrama No. 11. Audio

https://archive.org/download/Audio414/Audio414.mp3

The use of chest voice and chest mix in mm. 12-16 will enable the audience to hear the *Sprechstimme* line rather than the struggle the singer may have when attempting to sing the notes in head register. Because of the volume, the singer could be tempted to speak or shout the phrase in order to be heard, but, this muddies the inversional symmetry around E_4 that is a part of this line. A shouted rendition is also, in my opinion, less exciting than an interpretation that strives to match the pitch indicated.

The singer should look for similar moments throughout *Pierrot lunaire* that will allow for use of the chest register and chest mix on notes above F_4. It is not always appropriate, but when

it is, it adds an element of excitement, as well as some variation to the tone colors the audience experiences.

Interpretatively, the strengthening and usage of the chest register helps to highlight the concept of balance and bonding, discussed in Chapter Two, that permeates *Pierrot lunaire*. In the example from "Mondenstrunken," in Figure. 4.13, the inversional symmetry suggests that though the moon and Pierrot are divided, they are still bonded in an unbreakable way, balancing one another across the horizon. The notes of the lower voice of the symmetry all lie within the chest register domain, and the use of the weightier timbre of chest register can sonically suggest the voice of Pierrot in contrast to the moon's lighter timbre of head register, represented by notes of the upper line of symmetry. In addition, the use of these two registrations help to signify the balance of speaking and singing that the performers is working to create.

Melodrama no. 11, "Rote Messe," is from the second part of *Pierrot lunaire*, a section in which the moon appears very rarely. Because of this, it is understandable if the reciter chooses to sing with a heavier chest register timbre, expressing, in part, the decreased influence of the moon. In the example found in Figure 4.14, E^4 denotes the axis of symmetry. All notes above E^4 could be sung in a head register timbre, but the use of chest mix, as I recommend above, helps to suggest Pierrot's attempt to distance himself from the moon and its influence.

Vowel Color and Chew Rates

As recommended earlier, a singer should explore various vocal timbres in association with certain melodramas, as well as how to color certain words so as to set them apart. In general, all vowels can be modified towards a brighter color through the use of a more relaxed and smiley mouth shape. Additionally, the singer might consider assessing each diphthong

individually. In classical voice training, singers are encouraged to give more weight to the initial vowel sound of a diphthong, however, when speaking, the two phonemes of a diphthong are frequently treated more equally. A similar principle may be applied to *Pierrot lunaire*, and, in fact, the performer may find moments when it is appropriate to put more weight into the second vowel of the diphthong. Here, I think of the penultimate phrase of melodrama No. 21 "O alter Duft" (Fig. 4.15). In m. 24, the singer sustains the word *hinaus* as the text speaks of dreaming of the far ends of the world. Normally, a singer would choose to sustain the /ɑ/ of the /ɑo/ diphthong, saving the closing to /o/ for the final split second. An alternate interpretation might be created by choosing to move more quickly to the /o/ vowel, as if creating a slow-motion version of the word's natural pronunciation. This action creates an impression of the word traveling a far distance, an impression that echoes the action of the text.

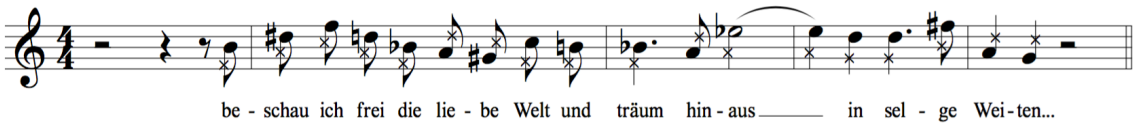

Fig. 4.15 Measures 22-26 of melodrama No. 21. Audio

https://archive.org/download/Audio415/Audio415.mp3

This example from "O alter Duft" does not use inversional symmetry, nor is the *Sprechstimme* line motivic in any way, so it may feel appropriate to default to a more spoken approach at this particular moment within *Pierrot lunaire*. That said, the final melodrama is often recognized as the most tonal of all the melodramas and an adherence to pitch in this penultimate phrase may keep the singer from inadvertently singing/speaking pitches that could enhance that

feeling of tonality, especially in a phrase that is not supposed to suggest the E major tonic found within the melodrama.[12]

Melodrama No. 15, "Heimweh," is another melodrama that may benefit from a more balanced execution of the diphthongs. Words that include diphthongs occur frequently in this particular poem, and often occur over sustained notes, making them prime moments for a more fluid, speech-like execution (Fig. 4.16). Specific to this discussion, would be words such as *Seufzen*, *Trauermienen*, *bleichen*, *Feuerschein*, *schweift*, and *Heimathimmel*, which all occur on note values of greater length. Experimenting with the amount of time spent on each phoneme of the diphthong (or triphthong, in the case of the first syllable of *Feuerschein*) will help the singer find the most speech-like execution of each word. When listening to the audio file of this particular example, the reader will note that the sung version sustains the initial vowel of each diphthong, while the spoken version does not. The *Sprechstimme* version tries to imitate the spoken version as much as possible.

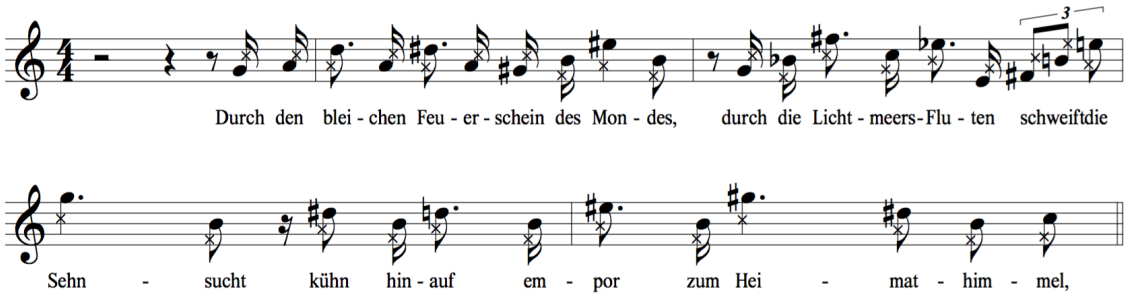

Fig. 4.16 Measures 20-24 of melodrama No. 15. Audio

https://archive.org/download/Audio416/Audio416.mp3

[12] Hans Heinz Stuckenschmidt, *Schoenberg: His Life, World and Work,* trans. Humphrey Searle (New York: Schirmer, 1978), 201. Jim Samson, "Schoenberg's 'Atonal' Music, *Tempo* 109 (1974): 18.

Related to this more equitable treatment of phonemes within a diphthong is the concept of the chew rate. When speaking, the movement between phonemes is fluid, while in classical singing, each phoneme becomes isolated, with consonants happening cleanly and crisply at the very beginning and very end of notes and the movement between vowels carefully choreographed. When performing *Sprechstimme*, the singer needs to become accustomed to moving more smoothly and naturally between all the phonemes, meaning, at times, the singer will close more quickly to the consonants and move more slowly into vowels. In addition, a singer may wish to consider using the consonants as expressive devices. For example, in melodrama No. 9, "Gebet an Pierrot," the speaker, possibly Colombine, pleads with Pierrot to become less austere, more jovial, and to return to his art so that she may laugh again (Fig. 4.17). The /p/ of Pierrot can be used to create a cry-like timbre by strongly aspirating the /p/. This helps to create a sense of desperation and even sobbing. A similar tactic may be employed with the /ç/ sound in *Lachen*, meaning laughter. A crisply executed /x/ sound gives the word a lightness that helps to reflect its meaning. A slower, more sustained /x/ adds a certain pathos to the moment and changes the listener's sense of the word, as can be heard when listening to the audio files.

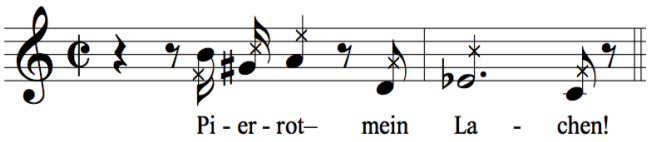

Fig. 4.17 Measures 19-20 of melodrama No. 9. Audio
https://archive.org/download/Audio417/Audio417.mp3

Opportunities for expressive consonants, such as what was described above, can be found throughout *Pierrot lunaire.* In melodrama No. 1, elongating the /l/ of *schlurft*, meaning slurp, creates a moment of onomatopoeia. Meanwhile, lengthening and roughening the /ʀ/ of

Schreindes, meaning screams, in melodrama No. 16, "Gemeinheit," helps the word to become more descriptive of Cassander's cries. The singer may also want to consider stuttering on the consonants of *todeskranker Mond* in m. 26-27 of melodrama No.7, "Der Kranke Mond," where Schoenberg has marked trills or mordents. A stutter helps to give the impression that the moon is, as the text says, gravely ill. These, of course, are just a few examples of how the consonants throughout *Pierrot lunaire* may be used to help create drama, moments of interest, and a more speech-like quality to the singing.[13]

Interpretatively, the speech-like timbre created by the use of brighter vowel color and a more fluid articulation aids the audience in hearing the balance between singing and speaking that is so fundamental to *Pierrot lunaire*. In moments such as those in Figure 4.15 and 4.16, which lie entirely in a range suited for head registration, this balancing of singing and speaking help to suggest the bonding and balance of tradition and innovation, as well as that of Pierrot and his moon-muse. This bonding and balance may not be so readily apparent given the higher tessitura of the music, and so it is important that the reciter work to find as much of a speech-like execution of the words as possible.

Vibrato

Vibrato is the most difficult to eliminate when a singer needs to sustain a note or sing high in pitch. This is primarily because classical singers are conditioned to use vibrato

[13] This emphasis on the phonemes and the sounds within words fits closely with the creation history of *Pierrot lunaire*. Before commissioning Schoenberg, Albertine Zehme wrote, "*I* want to restore the ear to its position in life. Meaning should be conveyed not only by the words we speak; the sounds should also participate in relating the inner experience." (Bryn-Julson and Mathews, *Inside Pierrot lunaire*, 35.) At nearly the same time, Schoenberg, too, was expressing how the sounds heard initially in a poem are sometimes his sole guidance in the creation of a new song in an essay titled "The Relationship to the Text." (Ibid., 36.)

constantly, and especially on held notes. They are trained that a beautiful, free tone is one with vibrato in it. While this is certainly true for the majority of styles found within classical music, it is not true for all. In addition, it cannot be said enough that there is no need for a beautiful tone when interpreting *Pierrot lunaire* and that one can sing with straight-tone safely and without fear of injury.[14] Therefore, when singing *Pierrot lunaire*, the singer needs to remain vigilant for those moments when habit and tradition may stand in the way of an effective interpretation. I would also recommend recording rehearsal sessions in an attempt to find the moments when vibrato creeps into the voice inadvertently.

As was said earlier, the best way to approach the sustained notes and the higher notes is through the use of increased breath pressure. This technique is especially effective for the high, sustained notes in melodrama No. 3, "Der Dandy" or melodrama No. 14, "Die Kreuze" (Fig. 4.18 and 4.19, respectively). Because the higher notes in these examples are marked *f*-*ff*, the singer can focus on making the tone sound like a pitched shout – a shout without the "noise" that could make it more worrisome from a vocal health standpoint – by applying a high degree of subglottic pressure. Moreover, this approach can be applied to most of the high, loud, sustained tones found throughout *Pierrot lunaire*. I think specifically of the following melodramas: "Valse de Chopin," "Madonna," "Rote Messe," "Enthauptung," and "Serenade."

[14] There are some voice teachers who believe that straight-tone will result in nodules, but I have yet to see evidence that this is true. John Nix did a study that may find a correlation between straight-tone and fatigue rates, but nothing in regard to injury (Nix, 2013). Ideally, the singer learning *Pierrot lunaire* will already have a healthy and functional technique, in which case, singing straight-tone is simply an adjustment that the singer applies to this particular piece and then ceases from doing when it is not stylistically appropriate.

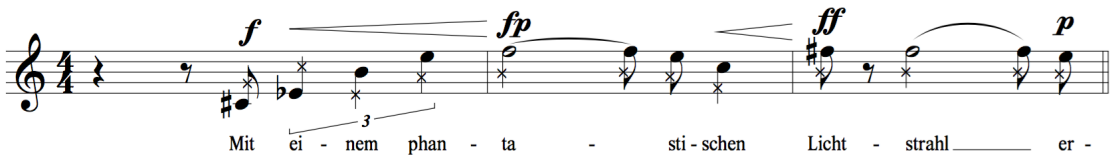

Fig. 4.18 Measures 2-4 of melodrama No. 3. Audio

https://archive.org/download/Audio418/Audio418.mp3

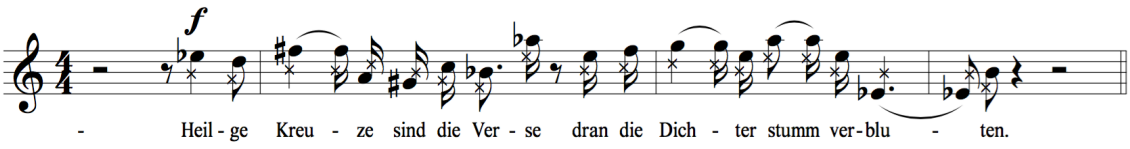

Fig. 4.19 Measures 7-10 of melodrama No. 14. Audio

https://archive.org/download/Audio419/Audio419.mp3

For the melodramas that have sustained tones that may need to be gentler in approach and color, I recommend applying the following described "sigh" technique. This was a technique that I employed when performing *Pierrot lunaire*, though I have yet to find voice scientists and pedagogues specifically discuss the mechanics of a sigh. What follows, then, is a description of the technique based on my own understanding of the vocal mechanism.[15]

[15] Ingo Titze does mention the following in a description of *messa di voce* exercises: "As the amplitude of vibration increases, the effective stiffness of the vocal folds increases because the tension-bearing fibers are stretched more. This increase in stiffness tends to make the pitch rise, unless there is a compensation by the laryngeal muscles. The phenomenon is frequently noticed in vocalists who are not keenly aware of pitch." (Ingo R. Titze and Katherine Verdolini Abbott, *Vocology: The Science and Practice of Voice Habilitation* (Salt Lake City, UT: National Center for Voice and Speech, 2012), 279.) The sigh technique may also be related to the concept of declination common in speech as mentioned in Chapter Three. While neither of these specifically address the mechanics of a sigh, they do support my description of the technique as laid out in this chapter.

When a person sighs, the action involves a strong exhale coupled, typically, with sound. In this voiced sigh, like speech, the vocal folds are not consciously aiming for a particular pitch, and so the vocal folds are free to move in response to air flow and pressure. Because of this, the vocal folds will vibrate more quickly in response to the faster moving air that happens at the beginning of a sigh, resulting in a higher pitch and greater amplitude, or volume. As the amount of air in the lungs decreases, the flow of air slows down and the pitch of a sigh responds by falling in frequency and amplitude. Singers are trained to utilize a similar breath action for *crescendi* and *diminuendi*, commonly known as the *messa di voce*, only the pitch is controlled, most likely by utilizing the auditory feedback loop referenced by Zatorre in Chapter Three.[16] If a singer can match the pitch and then immediately suspend pitch control by essentially "turning off" the auditory feedback loop, the singer will manage to get Schoenberg's slide request in the form of a sigh. Additionally, because a sigh occurs sans vibrato, the singer will also create a straight-tone sound on the sustained pitches.

An opportunity for applying this technique occurs in melodrama No. 2, "Colombine" (Fig. 4.20). This melodrama is set at a relatively slow pace, uses many longer note values, and has a very romantic text. In fact, this particular melodrama would sound very beautiful if it were sung as a traditional Lied. Because it cannot be traditionally sung, however, applying the sigh technique on the longer note values will help the singer from defaulting to the use of vibrato, while also giving the singer a little more control over the volume.

The example from "Colombine" is excerpted from the opening measures of the melodrama where the text describes the magically blossoms of light the moon creates on a July night. The music, accompanied by piano and violin, is delicate and cantabile. As can be heard in

[16] Zatorre and Baum, "Musical Melody and Speech Intonation: Singing a Different Tune," 4.

the audio files, a spoken rendition of this moment loses the sense of wonder that can be conveyed with the pitch. In addition, there are two moments within the opening phrases that suggest symmetrical inversion. It is hoped that the listener will be able to discern the relationships between the pitches better with a sung interpretation of the *Sprechstimme*.

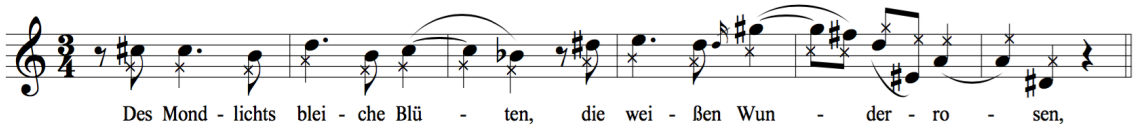

Fig. 4.20 Measures 1-6 of melodrama No. 2. Audio

https://archive.org/download/Audio420/Audio420.mp3

Coupled with a speech-like articulation, the removal of vibrato, especially in phrases that sit squarely in head register, does much to create the illusion of speech even when the reciter is singing. This, again, provides the reciter with an opportunity to connect the technique to a strong interpretative framework, such as the one I've suggested featuring Pierrot and the moon, or another of the performer's choosing.

Conclusion

Because of the uncertainty surrounding the performance of *Sprechstimme*, a tradition of performance practice has failed to establish. Performers have, instead, pointed to the diversity of interpretations as a strength. Few have asked, though, what serves the music best while also respecting, as much as possible, Schoenberg's instructions. I argue that a sung interpretation that aims for a speech-like timbre and a light, playful approach, rather than one that is overwrought, creates a magical and musical *Pierrot lunaire* that will never be achieved through an interpretation that is entirely spoken. And, while creating a speech-like timbre is challenging, it

is certainly not impossible. This guide can help to establish a singer's best speech-like timbre, which, in turn, may begin a trend in performance practice that will only help to create better and more music-serving interpretations. Additionally, my hope is that this guide will serve not only the singers and performers who approach *Pierrot lunaire* and other works that utilize *Sprechstimme*, but also the composers who wish to explore this technique and the teachers who are asked how this technique is done.

It is important to take a moment to discuss the varied performances that have and will be created of works that use *Sprechstimme*. A performance is always a concord of the composer's will and the performer's values. There are recommended ways for interpreting most everything in music, but there is never ONE correct way; the same holds true for *Sprechstimme*. The cognitive research strongly suggests that speaking and singing are produced differently, but this information shows only that speaking on pitch is not possible. What this research cannot do is tell performers how to execute the haunting technique of *Sprechstimme*. What I have written in the preceding chapters is only a suggestion based in my own performance values, my interpretation of what Schoenberg has written, and my analysis of the music he wrote. It is not the only way to execute *Sprechstimme*, though it may be the way for those who share my values.

I have always gravitated to performances that sing the notated pitches in a speech-like manner. At the top of a list of performers who do this is Christine Schäfer, though she is by no means the only one. Here, I recommend again Aidan Soder's book, *Sprechstimme in Arnold Schoenberg's Pierrot lunaire: A Study of Performance Practice.* She discusses a number of performances from various points of view, including the degree to which the performance is spoken, is pitch accurate, uses vibrato, uses slides and *portamenti*, and is rhythmically exact.

Because of an extensive discography included with the book, readers are bound to find recordings of which they were unaware and from which they may draw inspiration.

While my performance values often align with those who choose to respect the pitches written by Schoenberg, I understand that others may not share those same values and so will create and prefer renditions that are aligned with their own values. Within this field of interpretations, there can be performances that are equally as exciting as those that I prefer. Soder praises Barbara Sukowa's performance as a stimulating and visceral interpretation that is spoken rather than sung, but with a generally accurate contour. I agree with Soder's assessment and find Sukowa's interpretation fun; her range of vocal expression is unmatched. I cannot deny, however, that I miss the eeriness created by a speech-like sung interpretation, where fleeting glimpses of melodic motifs create the sense of inhabiting an alternate universe.

As a performer of contemporary classical music who was frequently needing to contend with the challenge of performing *Sprechstimme*, by various composers and in various guises, it was necessary that I discover the truth regarding this technique. In doing so, I was finally able to lay to rest Boulez's question of "whether it is actually possible to speak according to a notation devised for singing."[17] Thanks to cognitive research in the fields of speaking and singing, all performers of this technique can now say with certainty that *Sprechstimme* as described and notated by Schoenberg in *Pierrot lunaire* is not possible. The doubt surrounding this technique can now be eradicated and performers can now turn to the task of creating a tradition of performance practice that truly serves the music, the drama, and its creator.

[17] Boulez, "Speaking, Playing, Singing," 332.

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