

UNIVERSITY OF CALIFORNIA

Los Angeles

Auf der Bühne:

Culture and History in the Performance of

Diegetic Music in German Opera

A dissertation submitted in partial satisfaction of the
Requirements for the degree of Doctor of Musical Arts
in Music

by

Geoffrey Nicholas Gardiner Pope

2017

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ABSTRACT OF THE DISSERTATION

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Doctor of Musical Arts in Music

University of California, Los Angeles, 2017

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In this dissertation, I examine the role and evolution of diegetic music as represented in the *Bühnenmusik* of four pivotal operas: Richard Wagner's *Tristan und Isolde* (1865); Alban Berg's *Wozzeck* (1924) and *Lulu* (1935); and Bernd Alois Zimmermann's *Die Soldaten* (1965). These operas were chosen not simply for their shared Teutonic origins, but because they are important parts of an ideological and aesthetic lineage that clearly shows how the relationship between music and drama was transformed through the use of *Bühnenmusik*. In addition to exploring the musical materials and meanings of diegetic music within these operas, I address the challenges and peculiarities of conducting *Bühnenmusik*, and the role that evolving technology has played in overcoming issues of coordination between the stage and the orchestra pit.

The dissertation of Geoffrey Nicholas Gardiner Pope is approved.

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To my wife Lizzy,
who is everything to me.

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ACKNOWLEDGEMENTS

I owe a great deal of thanks to the many people who have made this dissertation possible. Foremost, I am extremely grateful for the support of my advisor, Professor Neal Stulberg: for his wisdom and guidance over the writing process, and his dedication as my conducting teacher at UCLA. I owe much gratitude to the musicians and scholars I met with in Europe, whose generosity, intelligence, and musical skills know no bounds: Thomas Lausmann, Witolf Werner, Gregory Rogers, and Stephen Hopkins (Wiener Staatsoper); Richard Whilds and Wolf-Michael Storz (Bayerische Staatsoper); Eike Feß and Therese Muxeneder (Arnold Schönberg Center, Vienna)—as well as E. Randol Schoenberg for putting me in contact with the Arnold Schönberg Center several years ago. I also owe UCLA Professor Peter Kazaras my gratitude for first putting me in touch with the music staff of the Wiener Staatsoper. I am further grateful for the guidance of Berg scholars Patricia Hall (University of Michigan) and David Headlam (Eastman School of Music), the support of Wagner scholar Mark Berry (Royal Holloway, University of London), as well as conductor Joseph Colaneri (Metropolitan Opera). I am lucky to have had such conscientious readers at UCLA (Professors Robert Winter, Michael Dean, and Michael Chwe), whose suggestions have been very helpful. Finally, I am very grateful to my parents, Janet Gardiner and Norris Pope, for their ongoing support and kind assistance in helping proofread this dissertation; and I am indebted to my wife, Elizabeth Dickenson, who has offered so much love and positivity over the past eight years.

UCLA fellowships and grants provided me with the means to both attend the University, and to conduct my research abroad. Many thanks in particular to Mimi Alpert Feldman, the

family of Herbert H. Wise, and Shirley and Ralph Shapiro for their generosity. My trip to Vienna and Germany was supported in large part by a UCLA Doctoral Student Travel Grant.

PREFACE

In April 2017, I traveled to Vienna to gain a firsthand understanding of how *Bühnenmusik* is coordinated at one of the world's most renowned opera companies. I spent ten days at the Wiener Staatsoper—kindly arranged by Thomas Lausmann, Head of Music—observing Witolf Werner, the Staatsoper's resident *Bühnenmusik* Conductor. I also spent a day in Munich, discussing stage music practicalities with Richard Whilds of the Bayerische Staatsoper. Over the course of my time abroad I watched *Bühnenmusik* in rehearsal and performance from mere feet away, and gained perspectives on leading and performing in these ensembles, as well as becoming familiar with the technology used to help facilitate them. Chapter Five of this dissertation draws most heavily upon these experiences, but there are allusions to them throughout this work.

My own interests in this topic are aesthetic and practical. As a composer, I have been fascinated with the emergence of sonic spatialization as a generative parameter, and the musical possibilities this has come to enable over the past century. As a conductor, coping with synchronization problems over long distances, with multiple sound sources, is something that I have dealt with in the past—and will continue to encounter in both opera and concert hall settings. This trip brought me a much more immediate understanding of the sort of flexibility and musical intelligence that goes into the execution of *Bühnenmusik* by those performing offstage, onstage, and within the orchestra pit.

Finally, on a practical note, it is my hope to encourage opera directors and conductors to consider the musical and spatial-dramatic significance of *Bühnenmusik* in their staging, and to resist the temptation to simply play this music from the orchestra pit because of its coordination

challenges, company budgeting, et cetera. Furthermore, in a pedagogical sense, playing this music, either from onstage or offstage, teaches instrumentalists and conductors valuable ensemble skills that may also inform their performance of non-operatic music in the concert hall.

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INTRODUCTION

Bühnenmusik, a type of diegetic music—music performed outside of the orchestra pit within a staged scene, of which the characters are typically aware—has played a crucial role in the development of Western opera. Although its genesis was utilitarian (for example, trumpet calls heralding a royal entrance), over time diegetic music appeared in increasingly intricate configurations, allowing composers to explore more complex relationships between the stage and the orchestra pit. There was a theatrical consequence: composers could integrate musical elements of diegetic and orchestra pit music to convey dramatic relationships that could not be established through the orchestra and singers alone. There were also aesthetic and practical consequences: composers increasingly looked to timbre and the spatialization of sound as a generative compositional element. While opening up new possibilities, coordinating the orchestra pit with the diegetic music sources presented equal challenges.

I. Terminology

The term “diegetic music” originated within the motion picture production and critical theory fields as a way to differentiate in-scene music from underscore.¹ In film, as in opera, diegetic music has the ability to advance the plot and to establish atmosphere. Diegetic film music, however, rarely *responds* to an underscore, because it is typically the music of another composer, and written at a different time for a different purpose. Because both musics exist separately in a fixed, recorded medium, they are simply mixed as composite audio tracks. In this sense, diegetic film music does not involve the same complexities of coordination that operatic

¹ Mervyn Cooke. “Film music.” *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/09647>.

diegetic music entails, since the musical relationship between it and the underscore is not two-directional—i.e. as a preexisting element, diegetic music in film cannot “comment” upon an underscore, which is written afterwards.²

In opera, diegetic music has a much more significant compositional relationship with the “underscore” in the orchestra pit: because these musics are the work of a single composer, musical elements from both the stage and the pit inform each other on syntactical and phenomenological levels. Furthermore, in opera, diegetic music’s execution calls for musical flexibility on the part of conductors, instrumentalists, and singers—a flexibility which is not required in film. In music theatre, then, “diegetic music” may have more in common with the literary definition of *diegesis*, whose Greek root, *diēgéomai*, means “narrate,”³ rather than its definition in the context of film, because it retains an active, interdependent relationship with the orchestra pit music. In tandem, these two kinds of musics reveal dramatic and formal relationships within a unified opera narrative that could not be achieved otherwise.

While the term’s broad application to art music is relatively new, diegetic music in opera has historically been described in scores in terms of its location relative to the orchestra pit. *Banda*,⁴ the Italian term for a consort, and specifically *banda sul palco*, refers to onstage instrumentalists, as technically does the broad German term *Bühnenmusik* (“stage music”). Offstage music may be indicated as *banda interna*, or music *fuori scena*, *hinter der Szene*, or *auf*

² Today film underscore composers rarely write their own diegetic music. The selection of specific diegetic music—very costly, if a popular song is used, for example—is typically negotiated between the film’s music supervisor, producers, and director, with little to no input from the film’s underscore composer.

³ “diegesis, n.”. OED Online. June 2017. Oxford University Press.
<http://www.oed.com/view/Entry/52402?redirectedFrom=diegetic&> (accessed October 13, 2017).

⁴ Occasionally, *banda* is distinguished between *banda sul palco* (onstage) and *banda interno* (offstage); this nomenclature is most commonly found in Verdi, such as within the third act of *Un ballo in maschera*.

dem Theater.⁵ These locational distinctions are important both logistically, when addressing coordination issues in performance; and compositionally, when considering spatialization's emergence as a generative musical parameter. Because of its utilitarian origins, diegetic music in opera has been typically associated with an actual physical divide between sources—for example, it would make very little sense for a distant hunting call to be played from within the orchestra pit if the hunters themselves entered from upstage left!

II. Historical Overview and Connections to the Studied Works

A brief history of diegetic opera music is important to consider since the main works discussed in this dissertation complete trends that had been emerging far before Wagner, Berg, and Zimmermann. These trends concern the dramatic purpose of diegetic music in opera, its spatial and instrumental disposition, and its relationship with the orchestral and sung music.

A. Earlier Music

Diegetic music was integral to the first theatrical productions. Greek drama routinely placed instruments toward the back scenic wall, such as the *salpinx* (an ancestor of the modern trumpet)⁶ while an instrumental ensemble and chorus performed together in a circular space

⁵ The first two terms translate to “behind the scene,” while the final translates to “from the theatre,” which editors also sometimes translate to “on the stage.” In this dissertation, “diegetic” is used broadly to describe both onstage and offstage music of which a scene's characters are aware. Because most of the works I discuss are German, I frequently use the term “*Bühnenmusik*” when describing specific examples. Furthermore, in many cases, such as in *Die Soldaten*, “*Bühnenmusik*” describes music performed both onstage and offstage per the composer's indications within the score.

⁶ James W. McKinnon. “Salpinx.” *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/24409>.

known as the *orchestra* (from the Greek *orkhéomai*, “to dance”).⁷ Thus, from the outset, music and drama were both physically and dramatically integrated. Diegetic music served the plot, but also, because of its physical distance from the *orchestra*, is likely the earliest example of intentional spatialization of sound in Western, deterministically composed music. By expanding upon the Greek notion that any dramatic music could be both representative *and* elicit emotional, even physiological, changes in an audience through its affective properties, later composers such as Wagner went on to treat some diegetic instruments as characters, rather than simply as effects.

It is difficult to know precisely what kind of diegetic music, if any, was used in medieval drama, which was mostly religious.⁸ Spatialization, however, became a generative parameter for composers in later Antiquity, the Middle Ages, and the Renaissance. This was achieved in the form of *antiphonal* music in liturgical settings, in which physically separated choirs sang a series of calls and responses. The first documented use of antiphonal music was in first-century Eastern Christian services,⁹ and later this custom spread westward, contributing to the development of Gregorian chant.¹⁰ Architectural developments throughout Christian history supported antiphonal music: not only did the separation of sound sources place churchgoers within a saturated audio field, but the various sizes of churches and cathedrals presented composers with different acoustical possibilities and challenges. In the late sixteenth century, Venice became a center for

⁷ John Spitzer and Neal Zaslaw. "Orchestra." *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/20402>.

⁸ Because so much diegetic music employs vernacular music (whether appropriated or manufactured by the composer), it is easy to view a parody mass, which uses popular melodies as *canti firmi*, as including diegetic music. This is not the case, however, because these popular sources are not considered to be “performed” within the mass, but were used in its construction as an absolute musical work. "Parody mass." *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/20939>.

⁹ James W. McKinnon, *Music in Early Christian Literature* (London: Cambridge University Press, 1989), 101.

¹⁰ Michel Huglo and Joan Halmo. "Antiphon." *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/01023>.

antiphony, most notably through the ornate polychoral music of the Gabriellis, who composed specifically for the acoustics of Saint Mark's Basilica. But spatial compositional parameters continued to be explored throughout the rest of Europe, too. Much of this seems to have been prompted by young composers' international studies. (Heinrich Schütz, for example, credited with writing the first German opera, studied in Venice with Giovanni Gabrieli, who in turn had studied with Lassus in Munich.)

In the early period of the seventeenth-century opera, it is unclear to what extent spatialized sound was formally addressed by musical societies such as the Florentine Camerata. Diegetic music, however, was abundant in early opera, especially in adaptations of the Orpheus myth, in which the protagonist "accompanied" himself on the lyre.¹¹ Non-operatic Baroque music—which emerged at approximately the same time—featured the dialogical aspects of antiphonal music, but less so the spatial ones.¹² ¹³ Baroque concertos exemplified this trend, as they often consisted of one or more soloists (the "*concertino*") who performed in alternation with the orchestral players (the "*ripieno*" or "*tutti*").¹⁴ But because these musicians performed in fairly

¹¹ Tim Carter and Geoffrey Chew. "Monteverdi, Claudio." *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/44352pg2>.

¹² The "concerted style," which became common in Baroque music, was attributed in large part to the work of the Gabriellis. David Bryant. "Gabrieli, Giovanni." *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/40693>.

¹³ It is my sense that the emergence of harmonically-driven forms and new tuning systems contributed greatly to this. Perhaps there was a practical reason too: in a room large enough for spatialized sound to be effectively perceived, the lingering reverberation of one chord would clash with another, subverting the teleology of tonic-dominant forms.

¹⁴ David Fallows. "Tutti." *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/28649>.

close proximity to each other, timbre and orchestration had more of a role in conveying a musical dialogue than did spatialization.¹⁵

B. Mozart and Juxtaposition

Spatialization seems to have become more important to diegetic opera music in the Classical era. The most notable example of which is the *Bühnenmusik* in Mozart's *Don Giovanni* (1787). There are several instances of diegetic music in the opera, including excerpts of popular songs (including a comical reference to Mozart's own "Non più andrai" from *Le nozze di Figaro*), as well as Giovanni's mandolin self-accompaniment in the aria "Deh vieni alla finestra." But the most significant use of diegetic music, and the one with the most innovative spatial choices, occurs at the end of Act I, when three dance orchestras perform onstage simultaneously. Not only are the orchestras physically separated, but in the scene's second *menuetto*, they are notated in different time signatures. They also play different vernacular dances (the minuet, the 2/4 contradanse, and *Teitsch*—a kind of German waltz), and their measures are grouped in such a way that almost all of the harmonic motion is synchronized. This isorhythmic construction of phrases works itself out: the minuet and waltz (3/4) are juxtaposed with the contradanse (2/4). Thus the ensembles realign every six beats. Berg alludes to this passage—harmonically, rhythmically, and through the use of vernacular music—in numerous ways in Act II Scene 4 of *Wozzeck*. I discuss this at length in Chapters Two and Three, since diegetic music in Berg operas draws heavily upon these Mozartian trends.

¹⁵ The first documented use of a *banda* was Italian, occurring in Giovanni Paisiello's 1787 opera *Pirro*. It was not ubiquitous in Italian opera, however, until the nineteenth century. Julian Budden. "Stage band (i)." *The New Grove Dictionary of Opera*. *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/O007545>.

There is an important further aspect of this music to consider. Due to his use of three simultaneous stage orchestras, Mozart creates, both aurally and textually, a sort of musical collage. He does this by delineating the metrical groupings and articulations of the dances as they are perceived *musically*; this is to say that, rather than simply adhering to the 3/4 time signature and offsetting the contradanse, he employs separate barlines for each music. This creates different measure numbers for each stage ensemble (and is another commonality with Berg's *Ländler* stage music in Act II of *Wozzeck*), but conveys Mozart's conviction that these dances should be notated in the groupings they are heard. These individual barlines are not simply an editorial choice, as they are indeed present in Mozart's autograph, as follows:

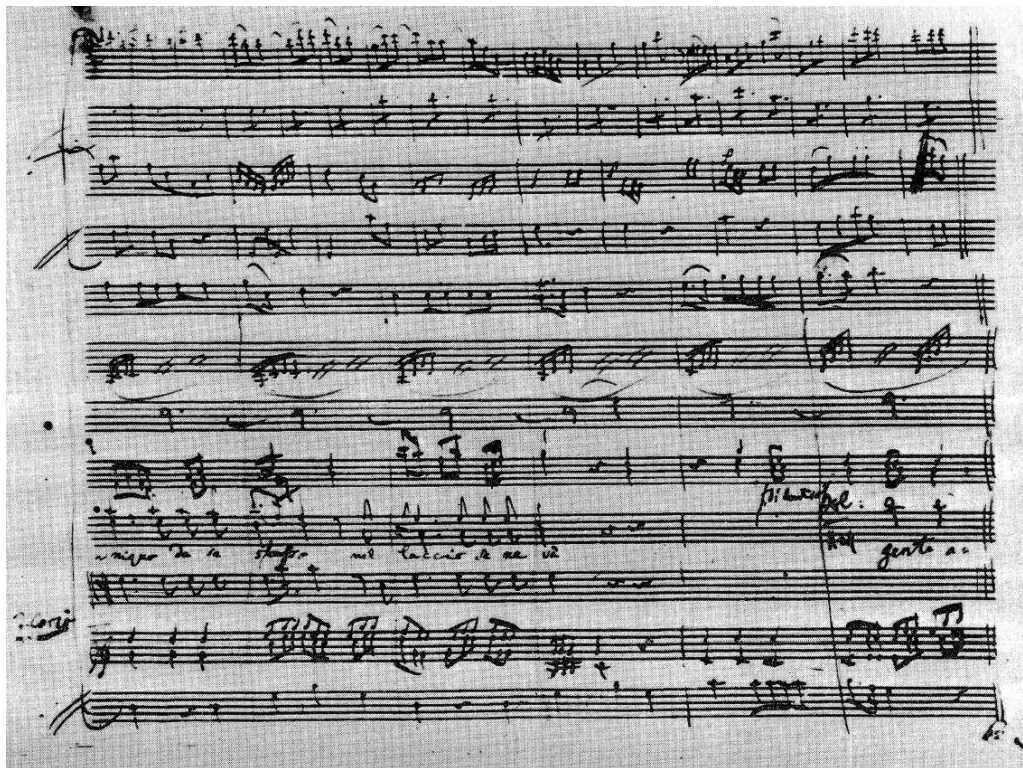


Figure 1. *Don Giovanni* Act I Finale autograph, mm. 462-467; Mozart's "gridding" is evident in the lighter shaded barlines of Orchestra II's contradanse and Orchestra III's *Teitsch*¹⁶

¹⁶ Wolfgang Amadeus Mozart, *Don Giovanni*, Wolfgang Plath and Wolfgang Rehm eds. (Kassel: Bärenreiter Verlag, 1968), xxiii.

This implies some things about Mozart's process, namely that 1) he deterministically coordinated juxtaposed, self-contained musical units, whose relationship with each other and the pit was *interdependent*; and 2) that he liked the composite sound based on the orchestras' physical separation from each other. These concepts are further developed in Berg's and Zimmermann's diegetic use of vernacular music.

C. Berlioz, Timbre, and Coordination

The relationship between diegetic music and spatialization developed extraordinarily over the periods discussed above, yet so did orchestration. Wagner's contemporary, Hector Berlioz, known equally to scholars for his music as his *Treatise on Instrumentation and Orchestration*, brought innovations in spatialized diegetic music to the opera house and the concert hall alike. He did so by prioritizing timbre as an integral source of compositional inspiration, as well as by expanding the symphony orchestra's instrumentation. Whereas Beethoven also expanded the orchestra (and occasionally included offstage music, such as the famous fanfare in his third *Leonora Overture* from *Fidelio*), Berlioz's comparative formal freedom enabled timbre to take on a more generative role.¹⁷ From this, the sonic identity of individual instruments was not only conveyed within the standard orchestral setting, but also in the diegetic parts of the operas that he composed.

Les Troyens (1863) features three diegetic groups in the Act I finale—the *Marche Troyenne*. The groups are comprised thus:

¹⁷ This did not emerge incidentally; Berlioz's early experiences of Beethoven performances in Paris brought him to the conclusion that the symphony was inherently a "dramatic" genre, which he built upon in his own works. David Cairns, *The Making of an Artist, 1803-1832* vol. 1 of *Berlioz* (Berkeley: University of California Press, 2003), 255-256.

Group I: one very high saxhorn, two natural trumpets, two piston cornets, three trombones, ophicleide

Group II: two soprano saxhorns, two contralto saxhorns, two tenor saxhorns, two contrabass saxhorns (or tubas), crash cymbals

Group III: three oboes, six to eight harps¹⁸

In an opera that featured so many “exotic” elements, it makes sense that Berlioz used some unconventional instruments for the diegetic music as well. The saxhorn, which is similar to the euphonium and baritone, could be compared to Wagner’s wooden trumpet in *Tristan und Isolde* just two years later in that both instruments are now obsolete, but produced the unique timbres desired by the composers.^{19 20} Berlioz also employed a sistrum (a sort of rattle used by ancient peoples), antique cymbals, thunder sheet, tam-tam, and taburka (dumbek), for diegetic music in Act II of *Les Troyens*.^{21 22 23}

¹⁸ Hector Berlioz, *Les Troyens*, ed. Hugh Macdonald, (Kassel: Bärenreiter Verlag, 2003), frontmatter.

¹⁹ Adolphe Sax, better known for the invention of the saxophone, and who was briefly bandmaster at the Paris Opéra, also created a number of brass instruments. Most of these are no longer used. Sax was a party in a series of patent infringement lawsuits over the use of Perinét valves in his brass instruments, so Berlioz’s choice to use saxhorns, rather than euphoniums or baritones, may reflect some political significance. Eugenia Mitroulia, Géry Dumoulin and Niles Eldredge, “On the History of the Perinét Valve,” *The Galpin Society Journal*, 61: 225.

²⁰ Sax filed two chromatic brass patents. The second (1845) specified that the system he introduced with the “saxtromba” could be applied as a “modification... for saxhorns, cornets, trumpets, and trombones.” Géry Dumoulin, “The Cornet and Other Brass Instruments in French Patents of the First Half of the Nineteenth Century,” *The Galpin Society Journal* 59: 100.

²¹ James W. McKinnon and Robert Anderson. “Sistrum.” *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/25899>.

²² Berlioz, *Les Troyens*, Act I, No. 4, 95.

²³ Procuring such instruments for historically informed productions is something of a gamble, but occasionally yields good results. John Eliot Gardiner, for example, obtained saxhorns from a “garret of a Parisian railwayman and brass enthusiast,” for his 2002 production of *Les Troyens* in Zürich. Decades after the premiere of *Les Troyens*, Berg met with an accordion seller in Vienna to learn the particularities of different makes—likely to understand his timbral options, as much as to gather a technical understanding of the instruments. In addition, in the 1960s, Zimmermann went on to exercise ultimate control over timbre by combining tape music, which he generated, and acoustic instruments in *Die Soldaten*. These developments are discussed in Chapters Two and Four, respectively.

Allusions to vernacular music—whether mundane or exotic—were frequent in the operas of the nineteenth century and remain so today. The increasing interest in timbre allowed such references to be far more specific than, for example, Beethoven’s Turkish style, or Haydn’s gypsy-inspired drone fifths in Symphony No. 104. In addition to reinforcing the sonic identity of instruments through his orchestration, however, Berlioz introduced the influential concept of disguising timbres. In his *Treatise*, he “advocate[d] techniques for getting effects from instruments which in practice deceive[d] the listener.”²⁴ ²⁵ Ravel adopted this technique in the early twentieth century for the same reasons, though in a more sophisticated fashion that involved the obfuscation of instrumental formants (attacks) by other instruments, and overtone series reinforcements.²⁶ This principle evolved into the search for sonic possibilities through electronic means in the 1950s, and in turn inspired Spectralist composers in the decades that followed.

As a conductor, Berlioz was no less intrepid. In his polemic *The Conductor: The Theory of His Art*, he addressed practical and aesthetic issues that “modern” conductors faced at that time. Beyond discussions of physical conducting technique, tempo interpretations, and

Peter Quantrill, "Sir John Eliot Gardiner – Interview (Gramophone, October 2008)," Peter Quantrill, November 03, 2014, section goes here, accessed October 13, 2017, <https://www.gramophone.co.uk/feature/sir-john-eliot-gardiner-%E2%80%93-interview-gramophone-october-2008>.

²⁴ Hugh Macdonald, ed. *Berlioz’s Orchestration Treatise: A Translation and Commentary*, (London: Cambridge University Press, 2002), xxx.

²⁵ This is not to say that he went on to undermine timbre’s generative role; to the contrary, these techniques allowed for new sounds, some of which the players themselves were not even aware, to be achieved from unlikely combinations of orchestral instruments. A notable example of this is the composite Berlioz created by reallocating hocketed divisi in *Symphonie fantastique* between the violins (at that time seated on opposite sides) in order to create the illusion of a unison line against a tutti passage in the winds and brass. Macdonald, ed, *Berlioz’s Orchestration Treatise*, xxxi.

²⁶ I encountered this firsthand as a young composer when preparing a piano reduction of the *Mother Goose Suite*, in which flutes occasionally reinforce certain partials of other instruments. This is a clear example of how these sorts of orchestrational techniques can have a significant role in both creating new timbres and reinforcing existing harmonies.

instrument tendencies, Berlioz brings up the challenges of coordinating interlocking ensembles, particularly those at a distance from the orchestra pit.²⁷ Berlioz's answer to situations in which offstage performers were used was an "electric metronome," a device designed to convey the orchestra pit conductor's pulse instantaneously to the backstage area for offstage musicians to follow. This is discussed at greater length in the chapter on technology.²⁸

D. Verdi and the Italian *Banda*

Italian operas of the nineteenth century used diegetic music frequently. The first documented *banda* used by an Italian composer occurred in Giovanni Paisiello's *Pirro* (1787), which premiered two months after *Don Giovanni*. Rossini adopted this technique beginning with *Ricciardo e Zoraide* (1818),²⁹ and the *banda* soon became a ubiquitous feature of Italian operas. Composers often used either a *banda sul palco* (onstage) or a *banda interna* (offstage). The instrumentation of the *banda* was variable, based on the opera house and the players available, but always contained a cohort of winds and brass unless strings were explicitly called for.³⁰ Because of this variability, Italian composers often scored *banda* parts on two or three staves that resembled a piano score, leaving the actual division of voices to a "bandmaster," whose job it

²⁷ He briefly describes the pitfalls of conducting the *Don Giovanni* ballroom scene, advocating that the common denominator *gesture* is simply a downward stroke on each quarter note of the *menuetto*, rather than grouping the passage in a 3/4 or 2/4 pattern. This implies that the *Bühnenmusik* performers could see the orchestra pit conductor in his productions. Hector Berlioz, *The Conductor: The Theory of His Art*, John Broadhouse, ed. (St. Clair Shores, Michigan: Scholarly Press, 1970), 35-36.

²⁸ Berlioz, *The Conductor*, 43-46.

²⁹ Julian Budden. "Stage band (i)."

³⁰ These groups originated in Classical-era Germany and France as an "*Harmonie*," which was a noble estate's band. (This sort of music was also played by street performers.) Sometimes the *Don Giovanni* Orchestra I is referred to as the "*Harmoniemusik*" because it contains two oboes and two horns in addition to the strings. Anthony Baines and Stanley Sadie, "Harmonie." *The Oxford Companion to Music*. *Oxford Music Online*. Oxford University Press, accessed October 4, 2017, <http://www.oxfordmusiconline.com/subscriber/article/opr/t114/e3138>.

was to rehearse and coordinate the *banda* for performances.³¹ The bandmaster role evolved into the *Bühnenmusik* conductor in German operas in the mid-nineteenth century. Some Italian diegetic music, especially Verdi's, was scored for specific instruments in addition to the open-ended *banda* staves. The *Triumphal March* in the second act of *Aida* was such an instance, as it called for a *banda interna* as well as six "Egyptian trumpets."³² Additionally, some publishers of early editions disseminated fully orchestrated realizations of the *banda* staves to expedite the production process. (It is often unclear whether such an arrangement was written by the opera's composer, or simply orchestrated idiomatically by a bandmaster for the publisher.)³³ On occasion, however, composers wrote for preexisting military bands with more or less fixed instrumentation; such was the case for all of Verdi's operas from *Macbeth* (1847) onward.³⁴

Verdi began to view the *banda* as integral to the formal structure and "dramatic arguments" in his middle-period operas. Not only did individual *banda* passages become more harmonically elaborate, they presented multiple melodies in "long, freely continuous passages" of the sort for which Verdi later became known. Both these phenomena achieved "unconventional and even stirring dramatic solutions."³⁵ By using diegetic music to fulfill substantive theatrical and musical priorities, Verdi intensified the relationship between the stage and the orchestra in ways that inspired future opera composers.

³¹ Linda Tyler, "Striking Up the *Banda*: Verdi's Use of the Stage Band in his Middle Period Operas," *The Opera Journal* 23, 3.

³² Giuseppe Verdi, *Aida*, (Milan: Ricordi: 2001), Act II, 136-138, 144-145, 148-154, 158-163, 200, 203-206, 240-241, 250-257.

³³ Tyler, "Striking Up the *Banda*," 4.

³⁴ Julian Budden, *The Operas of Verdi*, vol. 1 (London: Cassell, 1973), 20.

³⁵ Tyler, "Striking Up the *Banda*," 22, 7-8.

III. Summary

This historical overview has served to give some context for the diegetic opera music traditions that Wagner, Berg, and Zimmermann drew upon. The trends I discuss in the following case-study chapters can be distilled into developments in the following five areas: 1) the formal, musical-dramatic significance of diegetic music; 2) the diegetic use of appropriated or manufactured vernacular musics; 3) the prioritization of timbre and instrumentation for allusive purposes; 4) the collage-like juxtaposition of multiple, interdependent sound sources; and 5) the complementary relationship between diegetic opera music and spatialization's reemergence as a generative musical parameter.

As a final point, the works mentioned above, and those discussed in subsequent chapters, are all traditionally performed in opera houses. Given this, it is important to acknowledge the standard physical relationship between the stage, orchestra pit, and audience. Since to an audience the orchestra pit is centrally fixed in space, any instrumental sound source from beyond its confines illuminates the spatial relationship between that source and the orchestra.³⁶ This physical separation makes diegetic sources easy to distinguish, as their sounds come from outside the homogenized aural field to which an audience has grown accustomed. Dramatically, this temporarily diverts the audience's focus, which is why utilitarian instances of diegetic music (such as fanfares) are often startling. Ongoing diegetic music, on the other hand, such as that played throughout an entire opera scene, retains its sonic identity not through mundane interjections or punctuations, but by way of harmonic, rhythmic, and timbral relationships with

³⁶ Music of the "concerted style" has made use of this principle, particularly in the Baroque concerto genre. Whether the use of diegetic music in opera implicitly sets up this sort of opposition seems dependent on the musical context. (This is to say that, for example, a solo stage instrument can be supported by the pit orchestra without the two sound sources being at odds.)

the orchestra pit music—all of which are enhanced because the music comes from a separate physical source. Those performing onstage have even starker perceptions of where diegetic sounds come from, because their greater proximity to different stage sound sources means they experience less distance-based homogenization. Ironically, orchestra pit and backstage conductors—the coordinators—occupy the least advantageous locations to perceive spatialized sound and adjust balances accordingly. (Fortunately, this now been somewhat remedied by technology.)

In this dissertation I examine the role and evolution of diegetic music as represented in the *Bühnenmusik* of four pivotal operas: Richard Wagner's *Tristan und Isolde* (1865); Alban Berg's *Wozzeck* (1924) and *Lulu* (1935); and Bernd Alois Zimmermann's *Die Soldaten* (1965). These operas were chosen not simply for their shared Teutonic origins, but because they are important parts of an ideological and aesthetic lineage that clearly shows how the relationship between music and drama was transformed through the use of *Bühnenmusik*. In addition to exploring the musical materials and meanings of diegetic music within these operas, I address the challenges and peculiarities of conducting *Bühnenmusik*, and the role that evolving technology has played in overcoming issues of coordination between the stage and the orchestra pit.

CHAPTER ONE
THE SHEPHERD'S PIPE

Each act of Wagner's *Tristan und Isolde* begins with diegetic music, as Linda and Michael Hutcheon point out.¹ In Act I, this is the singing of a sailor (“*Westwärts schweift der Blick; ostwärts streicht das Schiff*”), in Act II, the distant sound of hunting horns (offstage, *auf dem Theater*), and in Act III, the mournful “old tune” (“*Die alte Weise*”) of a shepherd's pipe. The Hutcheons describe these instances of *Bühnenmusik* as “phenomenal” music. Through the inclusion of diegetic music, “plot details...are doubled” as part of Wagner's “willed redundancy” in structuring the drama.² As much as the stage music establishes the atmosphere (“*Stimmung*”) of a particular act, however, it is not self-contained. On the contrary, a structural understanding of *Tristan und Isolde* reveals numerous harmonic and motivic elements in an act's diegetic music as having gestated in that act's prelude.³ The most striking use of diegetic material is the shepherd's pipe music in Act III, in which the instrument serves not only as a plot device while establishing atmosphere, but fulfills as well some of Wagner's philosophical-dramaturgical goals.

Much of Wagner's work was informed by Greek drama, though their precise relationship was cause for debate by philosophers in the nineteenth century. While Schopenhauer (who actually did not like Wagner's music for a variety of reasons, mostly sociological) maintained

¹ Linda Hutcheon and Michael Hutcheon, “Death Drive: Eros and Thanatos in Wagner's *Tristan und Isolde*,” *Cambridge Opera Journal* 11, no. 3 (November 1999): 272.

² *Ibid.*

³ These continuities are often motivic, which is why Wagner's harmonic recasting of materials does not erode the affective properties of a gesture (the most notable example of this being the ascending minor sixth leap, which appears in many harmonic contexts throughout the opera).

that the Greeks “had not yet reached the summit and goal of tragedy,” whose drama was eclipsed in intensity by “modern tragedy,”⁴ Nietzsche discerned a deep Apollonian-Dionysian conflict within Wagner’s operas. This conflict had fundamentally to do with the relationship between uninhibited sexual ecstasy and mortality,⁵ often in opposition to humanity’s capacity to reason. These conflicts are evident throughout *Tristan und Isolde*, most notably in the *Liebestod*, in which the dying Isolde, unable to reconcile her lover’s death, reaches a “*höchste Lust*” (“supreme delight”) in the opera’s last line.

In trying to confirm that “Greek music was melodic and that Wagner’s melodic music was Greek,” Nietzsche urged the composer to give the chorus greater priority within his operas.⁶ Wagner, however, resisted, and set out to abolish opera choruses altogether, referring to them as “nothing else but the stage machinery set into motion and song, the dumb pageant of the coulisses translated into nimble noise.”⁷ In the case of *Tristan und Isolde*—an opera pointedly lacking a traditional chorus—the orchestra takes on the role of an omniscient being, who alternately comments on the action and “doubles”⁸ the inner sexual and death drives of the characters (the “phenomena”). The orchestra thus has much in common with a Greek chorus, which Wagner acknowledged: “*The Chorus of Greek Tragedy* has bequeathed to us its emotional

⁴ Martine Prange, *Nietzsche, Wagner, Europe* (Berlin: Walter de Gruyter, 2013), 62.

⁵ Freud would later incorporate these first two elements into his definition of the “death drive.” Sigmund Freud, *Beyond the Pleasure Principle*, Ernest Jones, ed. (London: The International Psycho-Analytical Press, 1922), 48.

⁶ Prange, 128.

⁷ Richard Wagner, *Opera and Drama*, William Ashton Ellis, trans. (London: Kegan Paul, Trench, Trübner and Co., Ltd., 1893), 63.

⁸ “Doubling” refers, according to the Hutcheons, to the “compulsive” reinforcement of sentiments Wagner has already presented in the text and the music, both of which specifically recall the earlier drama on countless occasions. Tristan does this a final time in the text of his central soliloquy in Act III Scene 1. Hutcheon, 293.

significance for the drama *in the modern Orchestra alone*, and therein, free from any hampering, has evolved to an immeasurable wealth of utterance.”⁹

The shepherd’s pipe is also inherently Greek. First, is diegetic by both definitions of the term I laid out in the Introduction: it is performed outside of the pit, and it has narrative (*diēgēomaic*) qualities beyond its establishment of atmosphere. Furthermore, the Greek ancestor of the instrument is the *aulos*, which Plato associated with Dionysian cults,¹⁰ and shares the most similarities with the medieval shawm and the modern oboe and English horn.¹¹ This suggests that Wagner shared both philosophical and timbral affinities with aspects of Greek drama. In turn, he used them to promulgate his own *gesamtllich* views on music theatre.

I. Presentation and Recurrences

The shepherd’s pipe solo, typically played on an English horn, lasts from mm. 52-93 of Act III Scene 1, consists of three distinct thematic sections, two intervening developmental sections,¹² and a closing passage based on motives from the beginning of the solo. While the beginning and end of the passage belong aurally to the F minor tonality of the Act III *Vorspiel*, the inner parts are mercurial enough that Wagner obscures the tonality several measures at a time.

⁹ Emphases are Wagner’s own. Wagner, *Opera and Drama*, 336.

¹⁰ Maria E. Ginsberg-Klar, “The archaeology of musical instruments in Germany during the Roman period,” *World Archaeology* 12, no. 3 (1981): 316.

¹¹ Martin L. West, *Ancient Greek Music* (Oxford: Clarendon Press, 1991), 84.

¹² Norton Dudeque, *Music Theory and Analysis in the Writings of Arnold Schoenberg (1874-1951)* (London: Routledge, 2016), 168.

DRITTER AUFZUG.

Erste Scene.

Mässig langsam.
Lento moderato.

12 *molto lungo* 26 5 8

Der Vorhang geht auf.
The Curtain rises.

Viol. I.

A auf dem Theater.
on the Stage.

B

A'

Dev. I

B'

C

Dev. II

Closing

rall.

a tempo

poco rall. *molto rit.* *a tempo*

6

Figure 1.1. *Tristan und Isolde* Act III Scene 1 English horn solo with phrase labels (note that this is a transposing score)¹³

The expansiveness of the solo—particularly apparent because phrases are constructed additively rather than divisively—is formally congruent with the preceding measures of the orchestral *Vorspiel*, in which pulse is effaced, and the harmonic affiliation of melodic pitches is made ambiguous.¹⁴ Although there are several conventional antecedent-consequent relationships

¹³ Richard Wagner, *Tristan und Isolde* (New York: Dover Publications, Inc., 1973), Act III Scene 1, 466.

¹⁴ “Divisive” construction, a term I first came across while studying Renaissance polyphony, means that a preexisting metrical structure is successively divided and filled with materials. This is in contrast to “additive”

within the solo, as in the *Vorspiel*, they are diminished by Wagner's irregular note values in the construction of phrases.¹⁵ The prioritization of gestural continuity over uniform phrase lengths has the effect of making the solo sound more dialogical: short motives are traded between the diegetic and orchestra pit sources.¹⁶ Thus, each "development" of a motive within this dialogue comes across as a rhetorical fleshing out of a previously heard gesture. This reinforces the notion that the shepherd's pipe *music* is a character, and the orchestra, something of a Greek chorus.

The recurrences of the shepherd's pipe melody throughout the rest of the scene appear in large phrases or simply fragments. For example, the first repetition (mm. 144-152) uses a truncated statement of the "C" section, followed by what I have labeled as "Development II." In this case, the solo ends with a presentation of the "A" section and the first two measures of the "B" section. The dynamics are not replicated exactly, and the "*allmählich schwindend*" ("gradually dwindling") conveys the opposite of what occurred in the first two measures of "B" in the initial presentation (a *crescendo*). In this sense, both motivically and dynamically, the second iteration of the shepherd's pipe solo is almost a mirror image of the first, and seems to move in reverse. This is possible because of Wagner's economical use of the leaping gestures,

construction, in which a sequence of motives or durations determine the phrase (or measure) length. Wagner's rhyme schemes would, based simply on the text, suggest a divisive approach to text setting. However, to avoid the "sing-song" effect this has, Wagner protracts individual lines of the texts, so that the phrase lengths are not uniform. See the following footnote.

¹⁵ This is analogous to Wagner's use of text—while *Tristan und Isolde* was Wagner's last conventionally rhyming libretto, his metrical displacements eliminate the "sing-song" regularity of divisive meters. Eric Salzman and Thomas Desi describe this in relation to German verb placement in long sentences. Eric Salzman and Thomas Desi, *The New Music Theater: Seeing the Voice, Hearing the Body* (New York: Oxford University Press, 2008), 92.

¹⁶ This accords with Wagner's "developing variation" technique, a term first used by Schoenberg to describe the centuries-old compositional practice in which "each chord, line, and harmony results from the subtle alteration and recombination of musical ideas from earlier in the piece." Ethan Haimo, *Schoenberg's Serial Odyssey: The Evolution of his Twelve-Tone Method, 1914–1928* (Oxford: Clarendon Press, 1990), 73.

and the flexible harmonic relationships of the original theme's two developmental sections, in what comes across to listeners as an "endless melody."¹⁷

The second repetition set is more expansive (mm. 618-648, and 653-663), and the dynamics and the phrasing indications have been modified from those of the initial presentation of the melody. As the scene progresses, individual gestures are also recalled *within* the orchestra.



Figure 1.2. *Tristan und Isolde* Act III Scene 1, mm. 188-192



Figure 1.3. *Tristan und Isolde* Act III Scene 1, mm. 195-195

Sometimes the gestures are played dialogically between the orchestra and the stage, such as occurs between the English horn and the woodwinds in the pit.

¹⁷ Mark Berry, "Developing Variation: From Wagner to Boulez," *Boulezian*, 2015, accessed October 13, 2017, <http://boulezian.blogspot.com/2015/09/developing-variation-from-wagner-to.html>.

The image shows a page of a musical score for Wagner's *Tristan und Isolde*, Act III, Scene 1, measures 649-654. The score is arranged in six staves, labeled from top to bottom as: Hob. I., Klar. I in B., Hr. I in F., Fag. I., Baßkl. in B., and Engl. H. The music is in a key with two flats (B-flat major or D-flat minor) and a 3/4 time signature. The inner voices (Horn, Clarinet, and English Horn) play a significant role, with the English Horn part including the instruction '(auf dem Theater)'. Dynamic markings include *p* (piano), *sf* (sforzando), and *dim.* (diminuendo). There are also markings for *piu p* and *(zart)* (delicate). The score features a prominent ascending chromatic counterpoint in the inner voices, which is a key element of Wagner's musical language in this scene.

Figure 1.4. *Tristan und Isolde* Act III Scene 1, mm. 649-654

From mm. 666 to 681, however, Wagner’s choice to provide such an extensive recollection of the original shepherd’s pipe theme is extraordinary. Not only do the music and text work in tandem, living out the “traumatic compulsion to repeat and narrate,”¹⁸ but they do so within a thick orchestral texture. The inner voices play the *ascending* variation of the tetrachordal “yearning motive” while Tristan recalls—for the umpteenth time—the tragic events that have led to his impending death. In the fullest sense, Wagner integrates “absolute” musical elements (the ascending chromatic counterpoint of the opera’s seed motive) with the phenomenal (the shepherd’s pipe melody), and the dramatic (“repeated associative memories and their powerful emotions”).¹⁹

Yet there is more to this choice that concerns diegetic music. The orchestra in *Tristan und Isolde* “emerges as the medium through which the protagonists’ emotions are expressed,

¹⁸ Hutcheon, 270.

¹⁹ Ibid.

providing a subtext or psychological commentary on an action.”²⁰ If the pit orchestra is viewed in this way, as an omniscient figure whose acoustical source is centralized, then the English horn, because of its spatial separation, can be viewed (independent of the shepherd who plays it) as a unique character in the drama. While musicologist Peter Kivy describes the Wagnerian orchestra as a “representation of the physical gestures of the characters,” in which “the characters compose their own accompaniment,”²¹ *Tristan und Isolde* is considered Wagner’s most musically-deterministic opera, with abstract formal musical forces playing a much more significant role in the construction of the work than in his other operas.²²

Wagner’s efforts a decade later in Bayreuth to simultaneously homogenize and efface the orchestra acoustically, are significant insofar as they reflect a desire to merge music and drama.²³ The deep Bayreuth pit can work physically as a giant mixing board—sounds are “subject to a perspectival ‘filtering’ dependent on the different positions of the instrumental groups in relation to the pit’s opening.”²⁴ ²⁵ This abandonment of acoustic separation of sources, which had enabled intra-orchestral musical discourse in Baroque- and Classical-era music, provided diegetic

²⁰ Jürgen Maehder, “A Mantle of Sound for the Night,” in *Richard Wagner: “Tristan und Isolde,”* ed. Arthur Groos (Cambridge, 2011), 97.

²¹ Matt Baileyshea, “The Struggle for Orchestral Control: Power, Dialogue, and the Role of the Orchestra in Wagner’s *Ring*,” *19th-Century Music* 31, no. 1 (Summer 2007): 5.

²² “By then he had written *Tristan*, and he admitted the subjection of the drama to the superior power of the music.” Carl Dahlhaus, *Between Romanticism and Modernism*, Mary Whittall, trans. (Berkeley: University of California Press, 1980), 26.

²³ This later became an important waystation on Wagner’s journey toward the realization of what he termed “invisible theatre.” C.F. Glasenapp, *Das Leben Richard Wagners*, vol. 6 (Leipzig, 1911), 137.

²⁴ Maehder, 109.

²⁵ It is sometimes forgotten that *Tristan und Isolde* was not premiered in Bayreuth, but at the Nationaltheater in Munich, by the Bayerische Staatsoper. While conducting my research, I was fortunate to have had an opportunity to visit the Bayerische Staatsoper, to examine the backstage area where the offstage solos were played, and to spend a bit of time in the orchestra pit—all places which were impressive, but not part of an architectural anomaly of the sort the *Festspielhaus* is. Wagner’s principles of orchestration were not so divergent between his operas to make this a hugely significant issue for the purpose of this dissertation.

instruments timbral clarity in relation to the orchestra. This supports the notion expressed above that Wagner treated diegetic instruments as characters who should not be overshadowed by the orchestra.²⁶

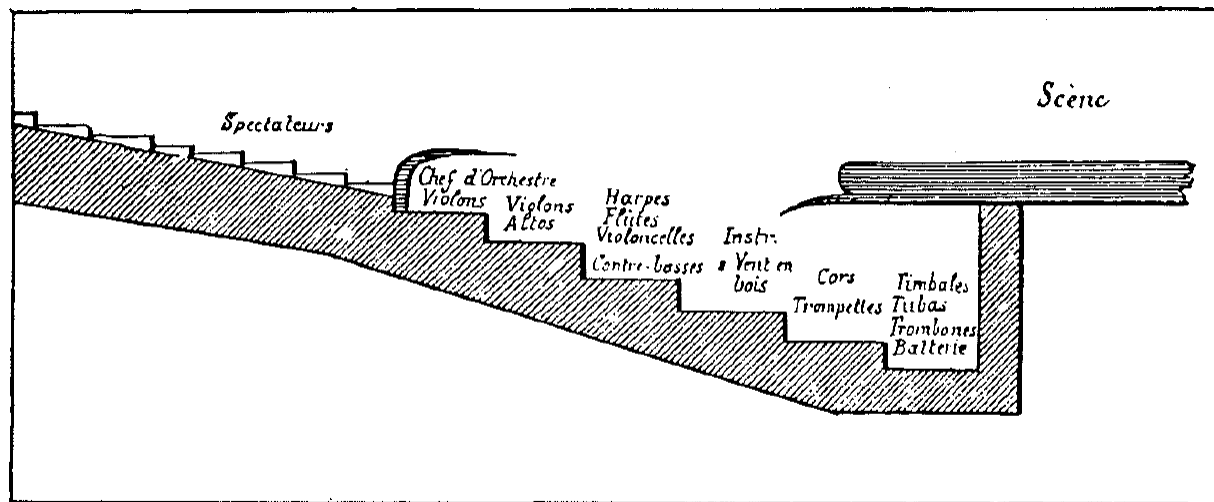


Figure 1.5. Orchestra pit of the Bayreuth *Festspielhaus*²⁷

II. Balance and Execution

A conductor who agrees with the above characterization of the shepherd's pipe solo must prioritize issues of balance within the rehearsal process. The most significant factor affecting these balances is staging: whether the shepherd's pipe is played onstage or from the wings.²⁸ Wagner's dynamics are, in the case of the solo writing (unlike the orchestral writing), relative,

²⁶ Marianne Tettlebaum poses a similar view of the flute's role in the eponymous Mozart opera. Marianne Tettlebaum, "Whose Magic Flute?" *Representations* 102, no. 1 (2008): 76-93.

²⁷ Daniel J. Koury, *Orchestral Performance Practices in the Nineteenth Century: Size, Proportions, and Seating* (Ann Arbor: University of Michigan Press, 1986), 270.

²⁸ There are no serious time constraints for the English horn player to take up a position outside the orchestra pit. The instrument is not played in the Act III *Vorspiel*, and Wagner provides considerable time for the performer to return to the pit after performing the final solo.

meaning that it is unlikely that, for example, a *f* played from backstage without amplification would actually measure as an orchestral *f*. Instead, the player *attempts* these dynamics; this causes important timbral changes, even if the volume envelope is comparatively small.²⁹ This suggests to me that, were these timbral changes unimportant to Wagner, the solo would not have been so rigorously marked with dynamics and articulations. These intricacies are all the more pronounced in the first presentation, because it is played without any orchestral accompaniment. In viewing the “*alte Weise*” in light of its recurrences, which are more dialogical because of the instrument’s motivic interactions with the orchestra, it is interesting to note that Wagner tends to mark higher dynamics. Phrasings are altered as well; this may have been to ensure that the affective contrasts between the recurrences would be audible regardless of the soloist’s placement.



Figure 1.6. *Tristan und Isolde* Act III Scene 1, English horn, mm. 617-622



Figure 1.7. *Tristan und Isolde* Act III Scene 1, English horn, mm. 84-85

²⁹ This is analogous to what Wagner achieved in the “Magic Fire Music” in *Die Walküre*, according to Richard Strauss—when the violins are expected to play an impossibly intricate figure, the result “creat[ed] such a wonderful, striking effect that one simply cannot imagine a better rendering of a blazing fire flickering with a thousand blended hues.” Maehder, 108.

The orchestral accompaniment during the recurrences of the shepherd's pipe material, except for the last one, consists of either slow padding, or thin, imitative figures. With string padding, such as occurs in mm. 618-648, the balance is fairly easy to assess from the pit; the English horn should simply be audible over the orchestra. In passages with direct motivic references played dialogically between the English horn and the orchestra, such as those in mm. 650-654, the conductor must decide which should be the primary voice. In these measures, for example, the triplet motive (an abbreviated phrase "B") is first presented within the orchestra in sequence by the first oboe, clarinet, and horn. Should the English horn's repetition of it beginning at m. 653 then be perceived as an echo? Or did the orchestral murmurings in mm. 650-652 serve as a quiet antecedent to something more prominent?³⁰ Similarly, when the first oboe presents the melody in mm. 666-679, should it match the character of the English horn, or should it be less ephemeral since it is *not* "phenomenal" (diegetic) music?

If a conductor continues to view the shepherd's pipe as a character, and accompanies it as if it were a singer, a number of coordination problems can be easily surmounted. This sort of accompaniment depends primarily on the English horn player's ability to hear the orchestra. While visual connection with the conductor's baton is optimal, it is unnecessary if tempos have been mapped out ahead of time.

³⁰ Since Wagner's dynamic markings of the solo are relative, and of greater timbre than volume significance, a conductor need not, for example, note the *sf* in the solo (m. 653) and decide that the passage should be loud based on that marking.



Figure 1.8. *Tristan und Isolde* Act III Scene 1, first English horn entrance, mm. 51-53

The very first entrance requires the soloist to hear the D-flat and B-flat dyad in the violins. Because this chord is tied into the next measure, the conductor should hover at the top of the fourth beat (m. 51), which allows the soloist to place the downbeat of m. 52. As much as possible, the conductor should meet the soloist there, but if the conductor is late, they can simply move through the first beat of m. 52 more swiftly. The conductor is responsible for providing a generous third beat to the violins, approximately as the soloist plays the written G-natural. (The conductor should not stop moving however, as the violin notes do not change on the third beat.) Signaling the fourth beat is important for placing the final eighth note of the measure, which is played by the first violins. When I conducted this in 2016 I found it advantageous to have the first violins separate their A-flat from the C-natural very slightly, not so the downbeat of m. 53 would be emphatic, but so that the English horn soloist could easily catch my tempo after the sustained string notes.³¹ The length of the final quarter note in the violins is at the conductor's discretion. I found it convincing to err on the longer side, because doing so allowed for a hint of a D-flat major triad, a sonority that (in relation to F minor) anticipated the series of mediant

³¹ After some experimentation, I placed the English horn soloist in a reverberant alcove to the right of the stage. A sightline was not possible.

relationships within the solo. Bringing the strings back in at m. 93 is simple if the English horn soloist separates the last two notes of m. 92. This provides the conductor the same courtesy afforded to the soloist in m. 52, making it easier to place the downbeat for the second violins and violas. Similar principles should be employed coordinating the solo mm. 144-155.

In the case of the solo that begins at m. 618, the conductor's challenge is less so one of managing the English horn, but of keeping the strings oriented within their many bars of *tremolando*. The notion of calling for measured *tremolo* in a passage like this is comical; not only would they be disastrous should the soloist slow down or speed up, even marginally, but they would undermine Wagner's orchestrational goals, keeping in mind his interest in "composite timbres" for the general orchestral sound.³² For this reason, the orchestra, in its omniscience, gently supports the shepherd's pipe's individual development.

III. Toward Berg

Though the 1865 premiere of *Tristan und Isolde* took place in Munich, Wagner had initially sought to hold it in Vienna.³³ This is significant not only because Wagner is rarely associated with Vienna, but because of the influence the opera had on the next several generations of Viennese composers and philosophers. Theodor Adorno, most recognized for his philosophical work, was also a composer, and moved to Vienna in 1925 to study with Alban Berg.³⁴ Adorno's late work, *In Search of Wagner*, though it frequently questions Wagner's musical sincerity, confirms the influence of *Tristan und Isolde* on a compositional level by

³² Maehder, 109.

³³ Alfred Orel and W. Oliver Strunk, "Richard Wagner in Vienna," *Musical Quarterly* 19, no. 1 (1933): 33.

³⁴ Based on their letter correspondence, which is well preserved, the two had a strong relationship from 1924 until Berg's death in 1935.

describing a “sort of far-reaching variations that the gestural motives resist and which are replaced by the Wagnerian principle of ‘psychological variation.’”³⁵ ³⁶ As *fin-de-siècle* panic mounted in 1890s Vienna, and figures such as Freud sought models for explaining fundamental human drives, the “omniscient orchestra” transformed into a more prominent orchestra, whose individual instruments regained their timbral identity within the orchestra pit. No longer was a homogenized, “overall synthetic sound” of “de-individualized instruments” sought, à la Wagner’s endeavors in Bayreuth.³⁷ With composers such as Schoenberg and Berg approaching orchestration in a non-homogenized way, diegetic instruments lost the relative individuality necessary to make them “characters” within the drama because the pit orchestra timbres themselves were so dynamic. Instead, *Bühnenmusik* came to be used in more complicated formal ways, whose relationships with the orchestra pit music were much more complex.

³⁵ Theodor W. Adorno, *In Search of Wagner* (London: Verso Books, 2005), 37.

³⁶ Such drawn-out “psychological variations” (developing variations) enabled Wagner’s long works. The lack of traditional formal strictures (aside from some antecedent-consequent relationships discussed earlier in this chapter) made long form works difficult to achieve for Second Viennese School composers, despite their psychological probing of—and phenomenological borrowings from—Wagner.

³⁷ Maehder, 109.

CHAPTER TWO

BÜHNENMUSIK IN *WOZZECK*

“Let us not deceive ourselves; the atonality of the music of this *Wozzeck* overpowers us; it is, I believe, the last beam of the light from the spirit of *Tristan* passed through Schönberg.”

—Adolf Weissman, *Berliner Zeitung am Mittag*¹

A Preface to Berg’s Operas

Alban Berg’s operas, *Wozzeck* (1924) and *Lulu* (1935), are staples of Modernist repertoire, and often considered in the Wagnerian lineage despite their formal conservatism. What seems to be rarely discussed in the context of this lineage, however, is an affinity shared by Berg and Wagner in their dramatic works for a magic-infused surrealism—a frequently occurring element in the Second Viennese School music. Mythological Wagnerian plots all require a certain suspension of disbelief from the outset. By contrast, Berg’s opera subjects address more approachable issues of class struggle and fragmentation of the human psyche. Yet in Berg, too, there are surreal, fantastical elements.^{2 3} Fantastical elements are presented bluntly in the text of

¹ Reproduced in Konrad Vogelsang, *Dokumentation zur Oper “Wozzeck” von Alban Berg* (Regensburg: Laaber Verlag, 1977), 24.

² Examples include rolling severed heads, unremitting scents, red moons, baptismal blood water, Masonic rites, winds blowing from the “South-North,” fires, glowing shapes in the sky, strange patterns of toadstools, and ethereal portraits.

³ Although the Symbolist Movement, for reasons of geography and ideals, did not significantly affect Wagner’s music, it had an enormous influence on Expressionism in Germany and Austria in the early twentieth century. The Hartleben translations of Giraud poetry used by Schoenberg in *Pierrot Lunaire* describe ethereal, grotesque phenomena of the sort upon which Symbolists dwelled—such as large black moths and sick moons. It is clear that Berg, too, valued French aesthetics of that period. This is exemplified in several Berg works, most notably his 1912 setting of Peter Altenberg poetry (the *Altenberg Lieder*). Altenberg was indebted not only to the Symbolists, but the

Berg's operas, but Berg's musical handling of these subjects is more sophisticated than Wagner's in *Tristan und Isolde*. Four examples illustrate the level to which fantastical elements are musically central to Berg's operas:

1. Berg gives Walter Schwarz's effervescent portrait of Lulu its own row (the "*Bild* Row"), which, like most pitch material in the opera, is a special permutation of the opera's master row.⁴
2. Wozzeck's "Hallucination" motive, originally from Act I Scene 2, is significant enough to fulfill George Perle's criteria for establishing a leitmotiv.⁵
3. Instrumentation and timbre choices signify and underscore surreal elements to the point that specific timbres have fixed associations throughout both operas.
4. Diegetic music—*Bühnenmusik*—almost always anticipates a fantastical event.

These four examples point to Berg's conviction that fantastical elements were not simply effects, but significant devices within the compositional genesis of his operas—revealing further affinities with Wagner. The most musically significant handling of surreal elements involves diegetic music. Unlike Wagner, whose diegetic music contributes to already fantastical scenarios, Berg employs *Bühnenmusik* to bridge symbolic, abstract musical statements, as well as text and stage actions, *for the purpose of achieving continuity between music and drama in a*

Impressionists and Naturalists. Barbara Z. Schoenberg, "The Influence of the French Prose Poem on Peter Altenberg," *Modern Austrian Literature* 22, no. 3/4 (1989): 16.

⁴ George Perle, *The Operas of Alban Berg, Volume 2: "Lulu"* (Berkeley: University of California Press, 1989), 110.

⁵ George Perle, *The Operas of Alban Berg, Volume 1: "Wozzeck"* (Berkeley: University of California Press, 1989), 100.

situation where reality seems malleable. Often used by Berg in contexts where drama reaches histrionic levels, diegetic music grounds characters and the audience by recalling a scene's place in an actual environment and time. Examples of this include the military band in Act I, the *Schrammelmusik* in Act II and the tavern piano in Act III of *Wozzeck*, and the onstage jazz combo in the third scene of *Lulu*. These provide a framework for reality, in counterpoint with *Wozzeck*'s "bloody water,"⁶ his "red, betraying moon,"⁷ and *Lulu*'s naming as a serpent "created to inflict disaster."⁸

In both operas, diegetic music serves a vehicle for conveying the composer's musical preferences and social-dramatic concerns.⁹ As discussed earlier, regardless of how mundane an opera subject, all audiences are required to suspend disbelief to overcome the circumstance that people are singing over the sound of a sunken orchestral ensemble. While this may seem to be merely an aesthetic, formal concern, or a question of dramaturgical efficacy, musical materials themselves are often responsible for guiding an opera audience to affirm or reject the "reality" of what happens on stage. Diegetic music's establishment of place, time, and circumstance often provides the only objectivity within a scene, as it is by nature something *performed*, rather than evoked. Yet a composer's orchestral music, however indirectly so, comments on this "objective music"—thus diegetic music cannot truly be neutral, nor can it be self-contained. In this vein, Berg's *Bühnenmusik* in *Wozzeck* and *Lulu* relates at the most fundamental levels to the orchestral

⁶ Alban Berg, *Wozzeck: Oper in drei Akten, 15 Szenen*, H. E. Apostel, ed. (Vienna: Universal Edition, rev. 1955), Act III Scene 4, mm. 282-283.

⁷ Berg, *Wozzeck* Act III Scene 2, mm. 98-99.

⁸ Alban Berg, *Lulu*, Cerha, ed. (Vienna: Universal Edition, rev. 1985), Prolog, mm. 46-55.

⁹ This is another element shared with Mozart, whose *Don Giovanni* ballroom music reflects Giovanni's hubris through its opulence and decadence.

underscore, and much of the *Bühnenmusik* in *Lulu* is produced by a composer consciously appropriating musical elements from outside his own cultural and intellectual traditions to fulfill formal and dramatic ends.

In *Wozzeck* and *Lulu*, coordination between sound sources from the stage and the orchestra pit requires a level of rhythmic precision beyond that required in *Tristan und Isolde*. This is not only due to the rhythmic complexity of the music itself, but because of the notational and juxtapositional choices made by Berg, which are reminiscent of Mozart's *Bühnenmusik* from *Don Giovanni*. Finally, although *Wozzeck* and *Lulu* were completed only a decade apart, *Lulu* represents a profound development in Berg's compositional techniques and aesthetics. For this reason, I will discuss the *Bühnenmusik* of the two operas separately, in different chapters.¹⁰

Wozzeck (1924)

While Berg (1885-1935) was deeply indebted to Wagner, he nonetheless came of age as a composer in a musical world that had developed considerably since Wagner's death in 1883. Wagner's "developing variation" technique had served his own music-drama well, and it was through this—and particularly its application to *leitmotives*—that Wagner achieved long and expansive operas. However, despite the progressivism of some of Wagner's harmonies, his operas were grounded in tonality: even if something like the "*Tristan* chord" took five hours to resolve, it did so. Berg recognized this when he set forth to write *Wozzeck*.

¹⁰ Unless otherwise specified in a footnote, all measure number indications refer to those of the particular act discussed, per Universal's numbering.

When seventeen years ago I decided to compose the opera *Wozzeck*, the situation in music was very peculiar. We of the Viennese School (with its leader, Arnold Schoenberg) had just moved beyond the beginnings of a musical movement that was called ‘atonal’ (falsely named, by the way). Composition in this style was at first limited to the creation of small forms...[or] to forms whose creation rested entirely on an underlying text or dramatic basis. This so-called atonal style lacked works of very large size: works having the classical four movements of normal extent, such as symphonies, or oratorios and large operas. The reason was that this style had renounced major and minor tonality and with it one of the strongest and most reliable means of creating small as well as quite extended forms.¹¹

Berg’s solution was to reconcile contemporary materials with older structures; he did so by using new musical techniques¹² to fulfill dramatic requirements within strict formal schema of his choosing. In *Wozzeck*, Berg realizes this through the employment of character pieces, symphonic forms, and inventions on musical parameters. Each major instance of diegetic music in *Wozzeck*

¹¹ Bryan Simms, *Pro Mundo–Pro Domo: The Writings of Alban Berg* (Oxford: Oxford University Press, 2014), 228.

¹² *Sprechstimme*, first used in Humperdinck’s 1897 melodrama *Königslieder*, and popularized by Schoenberg in the *Gurrelieder* (1900-1912) and *Pierrot Lunaire* (1912), became one such new technique for Berg. The expressive possibilities that semi-sung, “pitch-casting” served to make Berg’s setting of the Büchner all the more human, as through this technique, the text—not just the music—could be presented gesturally. For example, the wide declamatory vocal leaps facilitated by this technique mirrored the tessitura jumps of orchestral instruments. In this way, *Sprechstimme*, rather than spoken or sung dialogue, could add an element of surrealism to the overall aesthetic of a scene, because it is not quite sung and not quite spoken. Aidan Soder, “*Sprechstimme*” in *Arnold Schoenberg’s “Pierrot Lunaire”: a study of vocal performance practice* (Lewiston: Edwin Mellen Press, 2011), 5. Padmore refers to Schoenberg’s opera *Die Glückliche Hand*, where *Sprechstimme* “serves as an appropriately non-realistic mode of speech for the decidedly unreal creatures who use it.” Elaine Padmore, “German Expressionist Opera, 1910-1935,” *Proceedings of the Royal Musical Association*, 95th Sess. (1968-1969): 47.

begins a scene and, in doing so, becomes the first conveyor of the scene's musical plan, whether audible or not, in establishing the scene's atmosphere.¹³ Because of this, diegetic music bridges the absolute and the mundane, just as a technique such as *Sprechstimme* bridges the sung and the spoken.

There are three primary instances of *Bühnenmusik* in *Wozzeck*: those of the Drum Major's military band in Act I, the *Schrammelmusik* ensemble in the Act II *Wirtshaus* scene, and the tavern piano in Act III. Further instances include characters' quotations of folk songs, and orchestral allusions to music originally presented diegetically ("quasi-diegetic" music), such as Margret's song in the second tavern scene, and the reappearance of the Drum Major's music in the final interlude. Berg's approaches to it were novel, and arguably revolutionary.

I. The Drum Major's Military Band

This music plays an important role in the opera (and an important place in this dissertation) for the following reasons:

- 1) The musical source moves across the stage, rather than remaining static.
- 2) The music contains a recurring leitmotiv¹⁴ that returns numerous times in the orchestral underscore for the remainder of the opera.
- 3) Some of the musical content derives from an earlier Berg concert work, transforming "absolute" music into diegetic vernacular music.

¹³ Recalling that diegetic music begins each act of *Tristan und Isolde*, it is easy to see another Wagnerian parallel, despite Wagner's different approach to form.

¹⁴ Perle, *Wozzeck*, 99-100.

4) The passage obliges several performers¹⁵ to leave the orchestra pit in advance of the passage, which has posed difficulty for some opera companies.

5) The passage features several kinds of notation to provide both accuracy and flexibility in the musical responses of the singers onstage.

Given these issues, it makes the most analytical sense to proceed through the passage chronologically from both aesthetic and performance stances.

The orchestral interlude following Act I Scene 2 is appropriately rhapsodic and expansive.¹⁶ Near its culmination, the clarinet plays a descending fanfare figure, foreshadowing the military band music of the following scene.¹⁷ Although Scene 3 does not include a wealth of “fantastical” elements, this symbolic link between the “absolute” orchestral music and the forthcoming diegetic music reinforces Symbolist and Surrealist concepts of reality’s malleability—i.e., because clarinets play in the military band, a listener might wonder in retrospect if the fanfare figure they heard came from offstage to begin with. The military band enters in m. 326 over orchestral string chords. Because the strings sustain until m. 332, a

¹⁵ The *Wozzeck* orchestra is quite large for most orchestra pits (quadruple winds!), and there is an indication that several players exit the pit in order to perform with the military band (Act I Scene 2, m. 300). Berg, like Wagner, provides many measures for this travel, presumably the pit is very crowded, making this difficult. As discussed in Chapter 5, some of the larger opera houses employ fully-staffed *Bühnenmusik* orchestras; this passage from *Wozzeck* certainly justifies their use.

¹⁶ “Rhapsody” is Berg’s formal designation for the preceding scene; the first act is planned as a set of character variations.

¹⁷ Although Büchner’s *Woyzeck* fragments were assembled from two incomplete manuscript versions at the time of the playwright’s death, Büchner’s editor, Karl Emil Franzos, assembled a commonly accepted scene ordering from which Berg chose the fifteen tableaux. The first few scenes in *Wozzeck* are ordered identically to Landau’s assembly of *Woyzeck*, and the protagonist imagines distant drummers (m. 300) shortly before the connecting interlude. The 1928 preface by translator Geoffrey Dunlop refers to both the Franzos and Landau ordering of scenes; Dunlop’s translation includes each scene’s number in the Franzos and Landau editions, which sometimes differ. Geoffrey Dunlop, trans., *The Plays of Georg Büchner: “Woyzeck”* (New York: Viking Press, 1928), 219.

conductor's tempo must change (from a quarter note pulse at 60 beats-per-minute to an eighth note pulse at 108) in order to match the band's material. Furthermore, if the band starts backstage as indicated ("*Militärmusik hinter der Szene*"), the conductor must respond quickly because the downbeat of m. 326 is empty; the stage bass drum begins on the second eighth note of the measure.

It is not only a matter of the conductor changing from 60 to 108 beats-per-minute, however. Here, two measures of the 4/4 march fill one measure of the orchestral music, so if the conductor decides to remain in a "four" beat pattern, they must slow their pulse from the previous 60 beats-per-minute to 54 beats-per-minute *while* catching the band's pulse.

Marschtempo (ohne Rücksicht auf das Tempo des großen Orchesters)
 (♩ = ca 108)

326
327

Militärmusik hinter der Szene *)
Military band behind the scenes

*) Bemerkung zum Takt 300
 Diese Militärmusik von 20 Mann kann durch Verdopplung der Oboen und Klarinetten auch auf 24 Mann gebracht werden.

Im gleichen Tempo weiter, (also ohne Rücksicht auf die [beiläufig im doppelt so raschen Tempo] einsetzende Bühnenmusik)

325

Vorhang auf - - - - - 1
 Curtain rises - - - - - 1
dim. - - - - -

Figure 2.1. *Wozzeck* Act I Scene 13, mm. 325-329

A numbering discrepancy between the band and orchestra parts exists, since the dotted bar partitions align within the orchestra music, rather than the 2/4 stage music (which would be

equally confusing). The filigrees in the orchestral cellos and basses, notated in sixteenth and thirty second-note values, become difficult to coordinate in unison at a conducted pulse of 54 beats-per-minute. For these reasons, the conductor may end up conducting mm. 326-332 in eight, rather than four.

Next, Marie's rhythmic entrance in m. 330 ("*Tschin Bum, Tschin Bum*") must line up with the band's unison cymbals and bass drum. As in m. 326, the downbeat is empty, and these begin on the second eighth note of the measure.

330 *poco a poco cresc.*

1.2. Fl. $F^{\#} a^2$

1.2. Kl. in Es $F^{\#} a^2$

1.2. Fg. a^2

1.2. Hr. in F a^2

1 Baß Pos. pp

Trgl. pp

M.Tr.

Beck. u. gr. Tr.

3. Szene Mariens Stube (abends) / 3rd Scene Marie's room (Evening)

Marie (mit ihrem Kind am Arm beim Fenster, spricht:) Die Militärmusik nähert sich
(stands with her child on her arm, at the window, spoken:) The military band approaches

γ Tschin Bum, Tschin Bum, Bum, Bum, Bum! Hörst Bub? Da kommen sie!
Chin, boom, chin, boom, boom, boom, boom! Do you hear, boy? They're coming now!

Margret (auf der Straße)
(on the street)

330 *gänzlich verlöschen* *Dpf. ab*

2 Solo Vl. m. D. *gänzlich verlöschen* *Dpf. ab*

d. Lu. 2. Vl. *gänzlich verlöschen* *Dpf. ab*

1.2. Solo Vla m. D. *gänzlich verlöschen* *Dpf. ab*

Solo m. D. *gänzlich verlöschen* *Dpf. ab*

Vcl. *gänzlich verlöschen* *Dpf. ab*

d. Übrig. m. D. *ppp* *gänzlich verlöschen* *Dpf. ab*

Solo m. D. *ppp* *gänzlich verlöschen* *Dpf. ab*

Kb. *ppp* *gänzlich verlöschen* *Dpf. ab*

d. Übrig. m. D. *ppp* *gänzlich verlöschen* *Dpf. ab*

Figure 2.2. *Wozzeck* Act I Scene 13, mm. 330-333

If the conductor has been leading the preceding section in a slow 4/4, it is generally harder for Marie to read the beat clearly from the stage, given the slower speed of the conducted beats. Two

possible solutions arise: Marie can simply listen to the band for her tempo and entrance, or if she has a sightline to the Drum Major, watch *his* baton conveying the pulse. Yet if, in a particular staging, the band has begun distantly from backstage, it may be even more difficult for Marie to ascertain the pulse either aurally or visually.

Berg does offer some flexibility for Marie and Margret from mm. 335-344 and mm. 350-362, in that their exchanges are spoken and not rhythmically notated.¹⁸ Berg indicates the approximate pacing of the dialogue in the score via the spacing of the text, but ultimately leaves it up to the two characters to make sure the dialogue has been completed by m. 363, at which point Marie slams the window. The window slam is notated to coincide with the pit orchestra's entrance (on the offbeat), and the conductor must decide when to place the downbeat to coordinate this, as Berg instructs the military band to fade out as it leaves. Despite the coordination issues it might pose, the rhythmic window slam is an ingenious bit of orchestration: it is an interruption loud enough to cover up the cessation of the band's playing.¹⁹ (It also might be the first of several diegetic nods to *Don Giovanni*, as one of the orchestras in the Act I ballroom scene, located outside according to the score, plays until the window is closed.)²⁰

If the military band music must be performed from within the orchestra pit, the conductor must choose between conducting the strings (in a subdivided four pattern, while the band musicians treat each subdivision as a quarter note), *or* conducting the band music in a regular

¹⁸ Berg does this regularly in *Lulu*, where rhythmically notated dialogue is extremely rare.

¹⁹ The window slam and accompanying *ff* in the orchestra makes it easier for the military band to drop out, since its assumed diminuendo to *niente* is covered, allowing the performers to finish at an easier dynamic to produce. Berg writes only one and a quarter measures of the band music to “disappear,” (mm. 362-363), so this device is particularly valuable!

²⁰ Mozart marks this “*sopra il teatro, da lontano*” (over the theatre, from afar). *Don Giovanni* (Bärenreiter), 191, 197, 219.

four pattern (requiring the strings to treat each pulse as an eighth note within the partitioned measures). In this circumstance, conducting the orchestral strings seems a more pragmatic choice, and trusting the military band to execute its own part is ultimately easier.²¹ There is also the philosophical question of whether Berg sought to present the military band as a self-contained diegetic entity, or something of an outgrowth of the pit orchestra, given that the material is transformed later within the orchestral music.²²

These issues may have led many notable conductors and directors to choose to perform the band music from within the orchestra pit, or amplified from a fixed offstage point, rather than moving across the stage as a live ensemble.²³ This is unfortunate, because it ignores Berg's very clear wishes to convey musical movement on the horizontal axis within the scene. Berg was doubtless aware of similar music in Mahler's Third Symphony,²⁴ and this mobile stage band provides an opportunity to realize such music in a more lifelike manner than Mahler could achieve with relatively fixed symphonic seating.²⁵ Berg's military band material here is derived from the *Marsch* from his *Drei Orchesterstücke*. But, if rather than recycling materials directly,

²¹ "The first rule of opera conducting is 'never lose the pit!'" is an old, but not outdated maxim. Refer to the later discussion of proactive versus reactive roles of the orchestra pit conductor in coordinating *Bühnenmusik*.

²² Whereas in the Wagner selection, the English horn music is "returned" to the orchestra pit, the military band and presence of soldiers in *Wozzeck* continues to play an active thematic role in the drama.

²³ The recent Gran Teater del Liceu production and the late 1990s production in Frankfurt both handled it this way.

²⁴ Bernard Grun, trans., *Alban Berg: Letters to His Wife* (New York: St. Martin's Press, 1971), 298.

²⁵ The music of Charles Ives from almost the same period evokes converging, passing, and diverging military bands, creating something of a collage. It is worth mentioning that Zimmermann's music is sometimes viewed in light of what Ives popularized. Refer to Christian Utz, "Bernd Alois Zimmermann und Charles Ives: Schichtungsverfahren, Intertextualität, kulturelle Verortung," in *Musik-Konzepte Sonderband: Bernd Alois Zimmermann*, ed. Ulrich Tadday (Munich: Richard Boorberg Verlag, 2005), 121.

Berg, as an evolving composer, wanted to recast them; a moving source would be one way of doing this.

The last appearance of this music occurs briefly in the final orchestral interlude (the “Invention on a Tonality”), and retains much more of its vitality there if it is presented diegetically in Act I. This is to say that since the final interlude is essentially a highly-saturated tonal reconciliation of the opera’s preceding materials, an audience’s ability to identify this music within the interlude is crucial. Having heard the march localized onstage first may help a listener differentiate it from the other textures of the orchestral interlude.

II. *Schrammelmusik* in the Tavern Garden

A. From Schreker to Berg

Surrealism was not an isolated movement; it was an outgrowth of the Dadaist movement, which intended to be a “militant overthrow of all sacred [artistic] ideals,”²⁶ and emerged simultaneously with Expressionism as an “advanced stage of Romanticism.”²⁷ Many early twentieth-century Expressionist operas use Surrealist elements, and can be seen as outgrowths of Wagnerian excess—with fatalism and human sexuality as agents of the action. Franz Schreker, who wrote nine operas advocating the emancipation of sexual urges, exemplifies this. His music was well known to Berg, who prepared the 1911 piano score of Schreker’s *Der ferne Klang*, an opera containing an onstage orchestra.²⁸ Berg quite clearly found some short- and long-term inspiration from this for a variety of reasons.

²⁶ Brian Dennis, “Metamorphosis in Modern Culture: The Parallel Evolution of Music and Painting in the Twentieth Century,” *Tempo*, no. 78 (Autumn 1966): 16.

²⁷ Padmore, 42.

²⁸ Padmore, 43.

First, Schreker composes not only for an onstage orchestra, but an offstage orchestra as well. In the opening scene of Act II of *Der ferne Klang*, Schreker's diegetic music is marked to be played onstage ("*auf der Bühne*"), yet it also should paradoxically sound "very distant." Second, in the piano-vocal reduction, Berg includes a separate staff in which the mandolin music is written—it begins with strummed tremolos, and then simply doubles the piano transcription.²⁹ Despite the impossibility of a rehearsal pianist managing to play the notated tremolos in addition to the piano material, it is nonetheless included as part of the "*Venetianische Musik*" and explicitly indicated as "*Mandolin*."³⁰ These particular tremolos, written for the mandolin in the full score, are doubled by the flute, clarinet, and the *tremolando* stage strings, so the somewhat unnecessary "mandolin" label, given such a full orchestration, seems to reflect Berg's growing interest in "exotic" instrumentation—an interest that clearly remains in *Der Wein* and later, *Lulu*.³¹

Third, Schreker also avails himself of an onstage cimbalom in a later Act II passage, describing this new consort as "*Zigeunermusik*" (Gypsy music). This *Bühnenmusik* should be considered in comparison to the passage that begins Act III of *Der ferne Klang*, which is played by an offstage ensemble with a more traditional orchestration. This ensemble plays again shortly thereafter, having moved to the back of the auditorium ("*aus dem Theaterhaus*"), as the "distant

²⁹ Franz Schreker, *Der ferne Klang* (Klavieraussung), Alban Berg, ed. (Vienna: Universal Edition, 1911), Act II Scene 1, mm. 3-6 of Rehearsal 4.

³⁰ Although it is standard in some piano-vocal scores to indicate which instrument plays a particular line, it is rare, especially when material is essentially doubled, to add a third staff.

³¹ Perhaps the most exposed early mandolin writing amongst Second Viennese School composers occurs in Webern's *5 Stücke für Orchester*, Op. 10, a 1911 piece whose 17-instrument orchestration includes mandolin, guitar, and harmonium.

music” the protagonist longs to compose.³² It makes sense, then, to recognize these as two different sorts of diegetic music: one that provides “objectivity” in terms of time and setting, and one that is an intangible dramatic object. While both musics are Schreker’s, the latter is clearly of a higher, more absolute nature—it is not popular music for a group’s consumption in conjunction with other activities (such as dancing and drinking), but is an intimate music a character perceives as being performed *within the scene*, even if that character is the only one to hear it. This recalls the important possibility of some music being simultaneously diegetic and non-diegetic. Unlike the orchestra’s reclaiming of the English horn material as “absolute” in *Tristan und Isolde*, Schreker’s orchestral use of the diegetic material serves a singular dramatic purpose (the composer character Fritz’s realization of this “distant” music).

B. A History of *Schrammelmusik*, Its Use in Viennese Music, and Its Instrumentation

While it may be argued that Berg’s military band primarily serves plot purposes, Berg’s diegetic music in Act II Scene 4 simultaneously serves several complex objectives. *Schrammelmusik* is a nineteenth-century fusion of folk and academic musics played in a chamber setting. The name comes from its first practitioners, Viennese brothers Johann and Joseph Schrammel, who assembled a trio (two fiddles and a contraguitar), and later expanded to include clarinet and accordion.³³ The instrumentation provided some inspiration to composers of popular

³² Schreker, Act III Scene 1, mm. 1-3 of Rehearsal 6. Realizing this elusive music serves as the composer Fritz’s objective through the opera.

³³ A contraguitar is a double-necked guitar, with one set of strings used primarily to play bass pitches, freeing the other to play denser chords. Józef Powroźniak and Barbara Chmara-Żackiewicz. "Sokołowski, Marek Konrad." *Grove Music Online. Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/26123>.

waltzes, such as Johann Strauss, Jr., as well as progressives such as Schoenberg.³⁴ Berg, who according to Reich was enthused by cafe orchestras, experienced these colors firsthand in the coffeehouses and wine taverns of Vienna. (By Reich’s account, Berg frequently moved close to the ensembles to hear them better.)³⁵ Notably, Berg arranged Strauss’ *Wine, Women, and Song* for string quartet, harmonium, and piano—essentially a modified *Schrammelmusik* consort—in 1921, contemporaneous with his final work on *Wozzeck*.³⁶ Influenced as he was by Schreker to use an onstage folk ensemble, though, he managed to compose the Act II Scene 4 *Bühnenmusik* to fulfill much more robust formal schema and complicated dramatic purposes than Schreker set out to in *Der ferne Klang*. (Act II of *Wozzeck* is specifically conceived of as a “Symphony in Five Movements,” and Scene 4 is a series of scherzos with character designations.)³⁷ The stage music material alternates between *Ländler* and waltz music, a choice reflecting not only various genres *Schrammelmusik* consorts play, but the dichotomy of “high” and “low” music (and activities) that fascinated Berg.³⁸

Diegetic music was not simply an “effect” in *Wozzeck*, but an element that carried formal weight and required careful preplanning. In devising the precise instrumentation for his onstage

³⁴ Schoenberg’s circle also showed an interest in the use of the harmonium, which was used both in student reductions of larger pieces, and serious new works, such as Schoenberg’s *Herzgewächse* and Webern’s Op. 10. Reinbert de Leuw’s reduction of Berg’s orchestrated *Sieben frühe Lieder*, which I conducted at Eastman in 2010, employed a harmonium to augment the small wind and string section.

³⁵ *Music on 2: Alban Berg*. Documentary film, Barrie Gavin, dir., 1977, <https://www.youtube.com/watch?v=oCHEwV0BnJM>.

³⁶ Wagner had also arranged this; his 1875 version was, not unsurprisingly, scored for large orchestra.

³⁷ Perle, *Wozzeck*, 69.

³⁸ In an interview in the controversial BBC/RM Arts documentary “The Secret Life of Alban Berg,” (dir. Kriš Rusmanis, 1997), scholar Douglas Jarman attests that Berg, like Brahms, had a fascination with the underworld. Berg allegedly took night trips to the Prater area, which at that time was populated by brothels and other seedy enterprises, in addition to the Ferris wheel and circus that may have inspired the *Lulu* prologue. Whether Berg directly engaged with these institutions is difficult to determine.

group, Berg made several crucial choices. First was his choice of nomenclature: in a 1921 letter to his wife, Helene, he describes this consort as “a kind of *Heurigenmusik*,³⁹ which should be very amusing. [The ensemble] consists of a high-tuned fiddle, a clarinet, accordion, guitar, and bass tuba (bombardon).”⁴⁰ (The fact that Berg took it upon himself to explain his particular instrumentation to Helene—who was also raised in Vienna, and for whom exposure to *Schrammelmusik* would likely have been unavoidable—suggests to me that Berg found his own instrumentation choices novel, even though *Schrammelmusik* instrumentation was inherently flexible.)

Berg goes on to explain that he needs to “find out how far [he] can go with a modern accordion... to get to know all the possibilities,” and therefore planned to visit an accordion manufacturer in the Neubau district that afternoon.⁴¹ It seems strange at first that Berg was most preoccupied with the accordion, a mainstay of *Schrammelmusik* ensembles, while his guitar choice (to use one or several regular guitars, rather than a traditional contraguitar) was more unorthodox. Yet Berg likely took this trip not only to better understand the technical possibilities of the instrument, but to gather a greater understanding of the varieties of accordions available. (Despite some regional conventions, there were and still are many sizes, reed types, button and/or key layouts in common practice.) To learn the possibilities of “a modern accordion,” his eventual meeting with the manufacturer likely also concerned the question of which systems performers were most accustomed to. In the final, published *Wozzeck* instrumentation, Berg calls

³⁹ “*Heurigenmusik*,” or “music of the era,” is essentially another name for *Schrammelmusik*, although Bernard Grun specifies the former as specifically being used for “entertaining the guests at country inns.” In this dissertation, I refer to the onstage consort in Act II Scene 4 alternately as *Schrammelmusik* (a more common term than *Heurigenmusik*), and *Bühnenmusik*, depending on the context.

⁴⁰ Grun, 280.

⁴¹ *Ibid.*

for a *Ziehharmonika*, (literally, a “pull-harmonica” or, more prosaically, an accordion). In addition to labeling this instrument in the most generic way possible, Berg’s rather conservative writing for the accordion would certainly not have hindered future performances of the opera.⁴² Berg’s attention to these sorts of details suggests again that the diegetic music in the opera was not merely an “effect,” but carried formal, even germinal, weight.

C. Analysis

In the scene that precedes, Act II Scene 3, Berg writes for a subgroup of instruments within the pit, calling this assembly a *Kammerorchester* as an allusion to the instrumentation of Schoenberg’s *Kammersymphonie No. 1*, a work Berg revered. The scene—which serves as the slow movement of Berg’s operatic “Symphony in Five Movements”—is designated “Largo,” and the chamber orchestra plays alone as well as in tandem with the full orchestra.

Berg’s instrumentation instructions call for this chamber orchestra to be made up of *further* instrumentalists, physically separated from the full orchestra if possible.^{43 44} The fact that this subdivision occurs *within the orchestra pit* and does not employ an onstage group, implies that Berg’s homage to Schoenberg is more syntactical than phenomenological: the subgroup,

⁴² This awareness likely had a reward in the short term as well: correspondence from 1925 suggests the first accordionist hired for the premiere, likely a Berlin local, was replaced by an American virtuoso. This is discussed briefly at the conclusion of this chapter.

⁴³ From the frontmatter, bracketing the secondary instrumentation: “*Wömmöglich abgesondert vom grossen Orchester... ein Kammerorchester*” (“if possible, isolated [with]in the large orchestra, a chamber orchestra”).

⁴⁴ The full instrumentation, not including the chamber orchestra subgroup, consists of 30 winds and brass players, several percussionists, celesta, harp, and a string section of 50-60 players. It is likely that, because of the opera’s performance history in houses with pits too small to accommodate these numbers, many early productions did not employ separate musicians for the chamber orchestra subgroup, and used players already within the orchestra pit. Berg also specified that all of the *Bühnenmusik* personnel could be drawn from the orchestra pit, in case further instrumentalists could not be engaged. “*Alle diese Ensembles können aus den Musikern des großen Orchesters gebildet werden*” (“all of these ensembles can be filled by musicians from the large [main] orchestra”). *Wozzeck* frontmatter, viii.

based on its physical source and its musical material, comes across audibly as a *thinning* of the pit instrumentation, rather than an *augmentation* of it, and its use does not make much difference in respect to an audience's sense of sonic spatialization.⁴⁵ Accordingly, the chamber orchestra poses no additional coordination issues due to its location.

The short interlude bridging Act II Scenes 3 and 4 foreshadows the diegetic music of Scene 4 in a way Berg had not yet done in *Wozzeck*. The interlude is cast as a *Ländler*, and anticipates the next scene not only stylistically but substantively: Berg consciously employs harmonies and motivic transformations that appear in the following scene.⁴⁶ Orchestration choices in this interlude also foreshadow the *Schrammelmusik* (for example, the garish portamento between mm. 420 and 421, the “boom-chuck-chuck” material in the orchestra mm. 416-429, and the use of a solo orchestral violin to play the melody mm. 430-442). Not surprisingly, given the extent and detail of the interlude's foreshadowing, the *Bühnenmusik* episodes of Act II Scene 4 are the most complex in the opera to execute, and also constitute the most sophisticated compositional relationships between diegetic and non-diegetic material. The following table shows the entrance points and durations of the *Bühnenmusik* entrances within the scene.⁴⁷

⁴⁵ The acoustics of most orchestra pits tend to homogenize the source of the sound; a group of instruments located on one side of a sunken orchestra pit will still sound much more “central” than if it is placed on one side of the stage itself.

⁴⁶ The isorhythmic motive (mm. 412-413) is a derivation of the Apprentices' drinking song played by the *Schrammelmusik* group at the beginning of Act II Scene 4. The choice to use G minor for the interlude is also an example of foreshadowing the diegetic material. The choice for this key may also play into Berg's (veiled) Straussian use of mediant relationships: Schoenberg's *Kammersymphonie No. 1* has an E-natural locus, and the later *idée fixe* following Marie's murder is a repeated B-natural.

⁴⁷ Perle provides an extensive analysis of this scene's formal elements in his “Text and Formal Design” chapter. For the purposes of this dissertation, however, the chart refers to the *Bühnenmusik* entrances and juxtapositions with the orchestra music. Berg's 1929 lecture on *Wozzeck*, which Reich refers to on numerous occasions, elucidates Berg's formal planning in ways that are not labeled in the score (the designations “Scherzo I” and “Scherzo II” are

<u>Measure</u>	<u>Ensemble(s)</u>	<u>Formal Designation</u>	<u>Tempo (Quarter Note, in B.P.M.)</u>	<u>Additional Comments</u>
439-447	<i>Bühnenmusik</i> ; Orchestra out at 443	<i>Ländler</i>	100	Drinking song; 4 measure introduction
447-480	Orchestra	Transition from <i>Ländler</i> , followed by 4/4 <i>Mäßig[e]</i> passage	100, 54, 80	Numerous <i>accelerandi</i> and <i>ritardandi</i>
481-516	<i>Bühnenmusik</i>	<i>Waltzer</i>	132	
495-528	<i>Bühnenmusik</i> ; Orchestra joins on several brief occasions	<i>Waltzer</i>	132	Numerous <i>accelerandi</i> and <i>ritardandi</i>
529-560	<i>Bühnenmusik</i> ; Orchestra joins only 556-560	<i>Waltzer, Feuriger Waltzer</i>	132, 200	
561-576	Hunting Song Fragment (Chorus of Soldiers)	<i>Frisch</i>	132	
577-580	Folk Song Fragment	<i>Nicht schleppen</i>	ca. 80-88	Andres takes a guitar from the band and accompanies himself.
581-589	Hunting and Folk Song Fragments juxtaposed	<i>Frisch</i>	132	
589-592	Orchestra	<i>Mäßig</i>	100	
592-599	<i>Bühnenmusik</i> and Orchestra	<i>Ländler</i>	100	

prime examples of this). Perle acknowledges his broad reliance on the Reich and Berg writings and lectures throughout his volume.

599-604	<i>Bühnenmusik</i> and Orchestra	<i>Ländler</i>	100	Accordion <i>ostinato</i> overlay
605-635	<i>Bühnenmusik</i> ; Orchestra joins m. 634	<i>Melodram</i>	75, 112.5, 62.5, 75, 100	Numerous <i>accelerandi</i> and <i>ritardandi</i>
633-634	<i>Bühnenmusik</i>	<i>Ländler</i>	100	False recapitulation of opening drinking song
634-651	Orchestra	<i>Allegro</i>	100, 132, 88, 100	
649-664	<i>Bühnenmusik</i>	Re-tuning (<i>Ganz langsames Waltzertempo, jedoch sehr frei und nicht tanzmäßig</i>)	Somewhat free, below 100	
665-669	Wozzeck/Idiot	<i>Rubato</i> (<i>Bedeutend langsamer und ganz frei</i>)	Free	
670-685	<i>Bühnenmusik</i> and Orchestra	Waltzer	ca. 100	Orchestra hits and <i>Bühnenmusik</i> waltz juxtaposed

Figure 2.3. *Wozzeck* Act II Scene 4, mm. 439-685

The scene is remarkable for the extent of its interactions between the *Schrammelmusik* ensemble, the orchestra, and the characters on stage. While at times the orchestral music subsumes the stage music, those on stage still clearly hear the band diegetically, *even when it is marked “tacet” in the score*. (The characters make this evident, as they continue to dance and sing throughout the scene in the same tempo and ternary meter the stage ensemble has provided, which the pit orchestra adopts.) The *Schrammelmusik* players have a significant dramatic presence, conveyed through Berg’s musical depictions of the ensemble as a “drunken pub-band,”

as well as the ensuing tonic-dominant confusion and later re-tuning sequence. The fact that Andres takes a guitar from the ensemble to accompany himself in his folk refrain (mm. 577-588) has significance as well, because this requires dramatic interaction between the stage musicians and a character.

The entrance of the *Schrammelmusik* ensemble occurs at m. 439, four measures from the end of the interlude. The bombardon (a bass tuba)⁴⁸ outlines G major and C major chords; the *Ziehharmonika* enters to reinforce the latter harmony, and is followed shortly by the guitars. This cannot be anything but an explicit reference to the *Bühnenmusik* of the Act I finale of *Don Giovanni*.

MENUETTO (sopra il teatro)
406

ob.

Cori (in Sol)
Corni in G

Orchestra I
V. I.
V. II.
Va.
B.

Figure 2.4. *Don Giovanni* Act I Finale, mm. 406-413

⁴⁸ See the following chapter for an amusing cultural gaffe in Berg's nomenclature for "tuba"-like instruments.

whereas Berg uses this (which I've simplified somewhat):

| I | | I | | IV | | "IV" | | V | | i i_V | | "I7" "i64" | | bVI°_I "ii6" "i" "V" | | I |

(Subscripts refer to superimpositions, rather than functionality.)

While both Mozart's and Berg's harmonic progressions share a basic form—an established tonic, a departure from it, and a return (either functional or representative) via a prolonged dominant—Berg's is more complex, and comes across as polytonal. This seems to be the case for two reasons: 1) Berg seeks to obfuscate literal functional relationships via superimpositions of conflicting chords, and 2) Berg's notoriously wry humor prompts one of several ensuing communication mistakes between the "continuo" instruments of his *Schrammelmusik* ensemble. In his 1929 *Wozzeck* lecture to composition students, Berg elucidated this:

“This obvious dissonance springing from poly-tonality is intentional, of course, but it is not indiscriminate; it springs not only from the dramatic situation but also from musical logic. An example: the antecedent phrase of a Landler in G minor can, according to the rules of form, lead either to the dominant (D major) or back to the tonic. It is the fact that both happen together here (and who could blame a drunken pub-band for it!) that causes the confusion here: Since one part of the band that has modulated to the dominant now returns, according to the rules, to the tonic, G minor, while, at the same time, the other, equally correctly,

modulates to the relative major, the confusion continues. It is a miracle that they all find themselves back together again at the end of the *Ländler*.”⁴⁹

Berg’s “musical logic” works in tandem with the dramatic purpose of the passage, all within the bounds of multi-part scherzo form used for the scene. This case, yet another in which diegetic music opens a scene and conveys a structural priority, further reveals the importance to which Berg holds *Bühnenmusik* in his operas. It represents an outgrowth of Wagner’s diegetic preferences, since the orchestra music not only has a two-directional, dialogical relationship with the diegetic music, but an obvious formal one as well.

Following this near musical disaster, the two fiddles, whose steel strings have been tuned up by a whole step, enter thereafter, doubled by a C-clarinet.⁵⁰ This entrance itself is not difficult, but the *poco rallentando* in mm. 446 may be difficult to execute if the bombardon quarter notes are not prominent or emphatic enough. This first instance of *Schrammelmusik* poses the fewest coordination issues of those in the scene, especially as the orchestral interlude has already established the pulse and *Affekt* of this passage.

⁴⁹ Appears in alternate translation in Simms, 249-250; Hans Redlich and Prof. Larry Solomon (Pima College) editions are represented above. <http://solomonsmusic.net/WozzeckLecture.htm>.

⁵⁰ The earliest *Schrammelmusik* ensembles included the now-unusual G-clarinet. While clarinets in C are rare, they are nevertheless more common than those pitched in G. Hellmut Federhofer, et al. “Austria.” *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed October 13, 2017, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/40022>.

In m. 480, Berg indicates a *calando* for the orchestra, followed by a *ritardando* on the last beat.⁵¹ This change of pace and volume would normally be difficult at the entrance of a stage music ensemble, but the fiddle pickups to the waltz at m. 481 come out of near-silence and rhythmic stasis from the orchestra pit. (There is only really the typographical question of whether the *ritardando* is truly meant for the orchestra, or to “schmaltzify” the fiddle pickups; either way, Berg’s audacity in marking the trombones *pppp* provides, at most, some textural padding for the fiddles.) In this waltz section (the first in the scene, and the first time Berg uses the 132 beats-per-minute tempo indication), the stage music ensemble plays by itself with only a few frantic entrances from the pit orchestra. A conductor should mark these bars, following the stage music ensemble, and conduct actively only at the orchestral entrances (m. 495, for example). Marie’s “*Immer zu, Immer zu!*” figure at m. 504 is the first vocal entrance in the section, but the acceleration in the last beat of m. 503 provides some assistance, given that the first fiddle is audible. Wozzeck’s repetition of this text several measures later is easy to coordinate. The only question is whether the characters, based on choreography or the music director’s preference, pick up these sorts of entrances visually from the conductor, or aurally from the stage music. As the tempos of the waltz increase, Berg reaches a 160 beats-per-minute *Sehr schwungvoll* (“very powerful”) marking, at which point conductors might find themselves tempted to beat in one. This works well for the *accelerando* mm. 517-519, but makes the small *ritardando* on the final beat of m. 519 difficult to coordinate without some rehearsing. Furthermore, the protracted *poco a poco rit.* mm. 523-528 requires, for the sake of the singers and orchestral contrabasses, some indication of inner beats. At m. 529, the *Schrammelmusik* consort once again plays by itself. The

⁵¹ In addition to the *calando*, the orchestral strings are given the *verlöschend* indication as well as a hairpin. While this may seem redundant, the latter term means “extinguishing,” which resonates with Adorno’s views of Berg as an ultimately self-effacing composer.

Feurig indication at m. 539 is, in tandem with the speed increase to 200 beats-per-minute, an indicator of *Affekt*, and is undoubtedly a direct reference to *Wozzeck*'s preceding text ("*Das Weib ist heiß! Ist heiß!*"). This suggests that the stage band *itself* may be listening to and reacting to the characters. Because this level of reactivity is unlikely in reality, the reciprocity between the band and characters reinforces the surreal nature of the scene.

If one views the latter level of interaction as simply abstract, one cannot avoid recognizing that Andres' guitar music is phenomenological. During the second chorus refrain, Berg calls for Andres to seize the guitar, and to play the part of a chorus conductor to the drunken soldiers, "so that he can come in with the last chord of the chorus as it dies away."⁵² ⁵³ This seems excessive, since the chorus music ends with a long chord (marked *p*), that holds through the following diminuendo and extends past Andres' singing entrance. Thus, if the purpose of Andres' "conducting" is one of coordination, as Berg's note suggests, the cutoff he would need to provide the chorus would be in the middle of a word and on a weak beat—something virtually impossible to cue with a guitar neck or even a nod. If Berg had provided instructions and reasoning within the score for coordinating other stage music entrances, these indications might be seen as requisite; however, the specificity in this case seems on one hand unnecessary, and on the other, impossible to faithfully execute based on contradictory elements in the music itself.

⁵² Berg, *Wozzeck* Act II Scene 4, m. 572.

⁵³ While Berg wrote Andres' "*O Tochter, liebe Tochter*" refrain to Büchner's text, the hunting song text comes from an eighteenth-century song from the southwest of Germany. The melody is entirely Berg's own, however. Büchner has modified several words, dropping consonants and changing vowels, presumably to aid the soldiers in conveying their drunkenness. Tobias Widmaier, "Ein Jäger aus Kurpfalz," *Populäre und traditionelle Lieder. Historisch-kritisches Liederlexikon*. http://www.liederlexikon.de/lieder/ein_jaeger_aus_kurpfal. This may also be a reference to Don Giovanni's mandolin self-accompaniment ("*Deh vieni alla finestra*").

The next issue brings to mind a frequent question audiences ask about diegetic music, whether on stage or in film: Is the actor actually playing the instrument? Much of the guitar writing is within the capability of a reasonably experienced player. The first two measures, for example, require only slight modifications to the open strings (and in each case, by only a step or half step); Berg's symmetrical [0257] is voiced in stacked fourths to be reminiscent of several plucked open strings of a (detuned) guitar.⁵⁴ In m. 579 and m. 580 the writing becomes slightly more complicated—not because of the chord shape required on the fretboard, but because of the arpeggios in the right hand. The shift requires that the lower five strings are each stopped a tritone above their open pitch; this can be done by laying two or three fingers diagonally across the fretboard. Further chord changes require uniform shifts of a perfect fifth, a major third, and a minor third. The second verse of the hunting song interrupts Andres, but the character continues to strum and sing for several more measures, and finishes with the chorus in m. 589, at which time Berg instructs him to return the guitar to the *Schrammelmusik* players.⁵⁵ With some practice, most actors singing the role of Andres could probably play the guitar part themselves. Alternatively, because Berg specifies that two, three, or four guitarists could be in the stage ensemble, Andres's playing could be mimed. This could be distracting and far less effective, however. Again, the characters in the scene (stage musicians included) are inebriated; in this instance, performance accuracy is likely of secondary importance to dramatic conviction.

Whereas in previous *Bühnenmusik* entrances Berg simply provides a tempo indication, or, as in the case of the waltz at m. 481, a reminder of where that tempo came from (“1. Takt

⁵⁴ There is, from this, a relationship with the fiddles, whose *scordatura* writing requires their open strings be adjusted by a major second. The top note of Andres' first guitar chord is an F-sharp, which sounds as an open string by the *Schrammelmusik* ensemble during its “re-tuning” sequence later in the scene.

⁵⁵ Berg does not call for Andres to provide a cutoff this time. However, the *verlöschend* indication remains as per earlier.

439”), he provides additional information at m. 592: “*Takteil von Takt 592, dirigiert anfangs.*” The measure itself is written in 5/4, and partitioned into a group of two and three beats. Thus “*Takteil von Takt 592*” is not completely redundant, but signifies there should be no tempo change mid-bar when the *Ländler* resumes. To achieve this, the *Schrammelmusik* ensemble should be, according to the above instruction, “conducted at the beginning.” Two possibilities arise from this indication. The first is that these instrumentalists have had a way, since the very beginning of the scene, to receive visual information from the orchestra conductor, in which case it is odd that this is the first indication in the published score for them to receive a cue from the pit. The second possibility is that the musicians rely on Andres’ “*Elf Uhr!*” declamation (in quarter notes) for their cue, in which case extra sensitivity and score knowledge from the stage musicians is required. In this scenario, the conductor manages the orchestra and both Andres and Wozzeck from the pit, keeping in mind that there may need to be some accompanimental flexibility in the last three beats of m. 592 in case of any inadvertent delay from the *Schrammelmusik* ensemble.

1.2.3. Trp. in F o.D. 590 591 592 nehmen Dpf.

1.2.3. Pos. o. D. *mi - nu - endo - ppp* nehmen Dpf.

p *verlöschen*

Ländler (♩ = 100)
3. Taktteil von Takt 592
dirigiert anfangs

B Ü H N E N M U S I K
(1. Takt 439)

Fiedeln *arco*

Klarinette in C *p*

Ziehharmonika *f* *führend*

Gitarre *f* *klingt 1 Oktave tiefer*

Bombardon in F

Gitarre dem Spieler von der Bühnenmusik zurück und wendet sich zum Wozzeck
the Guitar back to the player in the band and then turns to - - - Wozzeck.

Andr. *Elf Uhr!*
E - lev - en.

Wozz. *Wie viel Uhr?*
What's the time? *So? Ich meint...*
EH? I thought...

1.Vl. m.D. *m. Dpf.* 590 591 592 *pp* *p*

2.Vl. m.D. *arco* *m. Dpf.* *pp* *p*

Vla. m.D. *arco* *m. Dpf.* *pp* *p*

Vcl. *mf* *mf*

Figure 2.7. Wozzeck Act II Scene 4, mm. 590-592

Beginning at its entrance on beat three in m. 592, the stage ensemble playing the *Ländler* is written in 3/4, as usual, while the orchestra's music continues to be written in 5/4.⁵⁶ Berg clearly struggled to find the best way to notate this, as reflected in his sketches.



Figure 2.8. *Wozzeck* Sketchbook No. 1, working out of 5/4 transition ca. m. 592⁵⁷

⁵⁶ At points the divisions of the orchestra music measures reverse, so there is some alternation between three- and two- and two-three groupings, which are indicated well in the score.

⁵⁷ Scan from the Musiksammlung of the Österreichische Nationalbibliothek. F21.Berg.13/VI Mus; <http://data.onb.ac.at/rec/AL00542238>.

The presence of multiple simultaneous metrical structures is reminiscent of the ballroom scene in *Don Giovanni*, although the low common denominator of Mozart's measures of two and three groupings, for example, means that those ensembles become realigned in only six measures. In this case, Berg writes twelve measures of the *Ländler*, which fill eight measures of orchestral music in 5/4 (the *Ländler* begins two beats into m. 592, and ends two beats early in m. 599). At this point the accordion player is instructed to play (in the *Ländler* tempo) six measures of 3/4, which fit with the orchestral music in such a way that the clarinet pickup circa m. "603" occurs on the orchestral *downbeat* of m. 603. Berg uses arrows to indicate this simultaneity, but in turn instructs the stage clarinet to continue to *Ländler* on its own, "lead[ing] over to the *Melodram*."

Das übr. Orchester
1. 2. 3. 4. Hr.
in F o. D.
1.
Pos.
m. D.
2. 3.

rit. 602 603 604

BÜHNENMUSIK
1. Fied.
Kl. in C
Zieh. h.
Git.
Bomb. in F

Händlertempo
Solo Kl. den Ländler auf eigene Faust fortsetzend und damit überleitend zum -
the Solo Clarinet continues the Ländler on its own leads over to the Melodram -
Schluß des Tanzes
Choral
p (ev. m. Dpf.)

Hier endet der Tanz. Die Burschen und Soldaten verlassen den Tanzboden und wenden sich zum Handwerksburschen.
The dance stops. The party leaves the dance floor and turns to the apprentices

Andres ist gelangweilt, und mit den Gedanken schon mehr beim Tanz, wendet sich von Wozzeck ab
Andres is bored. He whistles to himself and, thinking more of dancing, he turns away from Wozzeck.

Andr.
Bist be - sof - fen?... (pfiffend - - - - -)
Are you drunk man? (whistles)

Wozz.
wieder allein auf der Bank
remains alone on the seat
lieg' ich dann noch bes.ser - Nein, lei - der, bring's nit z'sam.
will I lie still bet.ter - Me drunk, man? No such luck!

1. Handwerksbursche, der indessen aufgewacht ist, steigt auf einen Tisch und beginnt -
Meanwhile, the First Apprentice has roused again, climbs on the table and begins to preach, to the accompaniment of the band

D. übr. Orch.
Vlc. m. D.
Kb.

rit. 602 603 604
m. Dpf. *espress.*
gliss.
mp p

Figure 2.9. *Wozzeck* Act II Scene 4, mm. 602-604

Thus, it is assumed that the clarinetist does in fact receive its entrance from the conductor, though the conductor is unlikely to help the 3/4 accordion music in mm. 599-602 due to being

occupied with leading the 5/4 orchestral and vocal music in these measures. To add further complexity, both the *Schrammelmusik* ensemble and the orchestra play a *ritardando* in mm. 603-604; this is presumably led by the stage clarinet, but Wozzeck's vocal doubling, and Andres's whistle doubling of the clarinet, suggests that the conductor should take a somewhat active role in this (thereby leading the clarinetist in a sense, *in contradiction to Berg's instruction in the score*). The simplest solution is to re-bar mm. 602-604, so that the conductor can beat in 3/4 with the stage clarinetist and singers. Note that with these changes, the agogic identity of the *Ländler* will be preserved, and all the musicians will be able, if necessary, to follow the orchestra conductor.

Das übr. Orchester
1. 2. 3. 4. Hr.
in F o. D.

1.
Pos.
m. D.

2. 3.

602 603 604

rit.

dim. pp

1. Fied. der 2. Viol-Spieler kann ev. dirigieren

Solo Kl. den Ländler auf eigene Faust fortsetzend und damit überleitend zum -
the Solo Clarinet continues the Ländler on its own leads over to the Melodram

Kl. in C

Ländlertempo pp p mp

Zieh. Schluß des Tanzes

Git.

Bomb. in F H Choral p (ev. m. Dpf.)

Hier enden sie! The da. 3/4 irschen und Soldaten verlassen den Tanzboden und wenschen.
Andres is bored. He whistles to himself and, thinking more of dancing, he turns away from Wozzeck.

Andr. Bist be-sof-fen? Are you drunk man? (pfeifend whistles)

Wozz. wieder allein auf der Bank remains alone on the seat

Lieg' ich dann noch bes-ser- Nein, lei-der, bring's nit z'sam.
will I lie still bet-ter- Me drunk, man? No such luck!

1. Handwerksbursche, der indessen aufgewacht ist, steigt auf einen Tisch und beginnt, begleitet von der Bühnenmusik, zu predigen
Meanwhile the First Apprentice has revived again, climbs on the table and begins to preach, to the accompaniment of the band

D. übr. Orch.
Vcl. m. D. rit. m. Dpf. espress. 602 603 604

Kb. mf mp p

Figure 2.10. *Wozzeck* Act II Scene 4, mm. 602-604, rebarred

The *Melodram* incorporates prolonged motives from the preceding section, but casts them in such a way that they turn a rather innocuous text into sanctimony. The instruments devolve according to the text, to sustained block chords with stepwise voiceleading, which is reminiscent of Lutheran chorale writing, and entirely appropriate given the text of the

Apprentice’s mock-sermon. At the same time, however, the trills and tremolos by which the chords are sustained bring the requisite anemia to the scene. This works in tandem with the Apprentice’s declamatory *Sprechstimme* and falsetto, and pays near explicit homage to Schoenberg’s *Pierrot Lunaire* and *Die glückliche Hand*.^{58 59} The *Melodram* music requires tempo changes every two to four measures, with occasional fermatas, lifts, and pauses. The issues discussed in the previous *Schrammelmusik* examples apply here, but individual performers must know each other’s parts to a much greater extent. The Apprentice’s text rhythm alone makes this an incredibly difficult passage to execute, particularly without a conductor’s leadership.

Figure 2.11. *Wozzeck* Act II Scene 4, mm. 609-611

⁵⁸ Rudolf Stephan, “Zur jüngsten Geschichte des Melodrams,” *Archiv für Musikwissenschaft* 17, vol. 2/3 (1960): 189-190.

⁵⁹ Zimmermann also includes a “sermon” amongst soldiers in Act II Scene 1 of *Die Soldaten*, which shares enough elements with the *Wozzeck* scene to suggest it is a deliberate reference.

625 subito largo (♩ = 62½) rit. - - -

arco gewöhnl. am Frosch arco

pizz. pp Flag.

fff (Echoton)

pp poco

sffz gerissen pp Flag.

sffz (klingt wie notiert)

pp poco

sffz pp pp

plötzlich gestopft, indem der 2. Handwb. pp

etwas (den Dämpfer) in das Bomb. stößt bis zum Schluss

mit etwas Singstimme - - - - - **625** subito largo (♩ = 62½) rit. - - -

partly singing p

wenn Er ihn nicht mit dem Be-dürf-nis des Tot - schie - Bens und der Feuch-tig-keit aus-ge-rü-stet hät-te?

live, if God hadn't given man the need to shoot and kill people, and if parch-ing thirst were not always our lot?

Figure 2.12. *Wozzeck* Act II Scene 4, mm. 624-626

The last major dramatic action in the scene, the Idiot’s iconic prophecy of “red mist” and “blood,” is perhaps more surreal than frightening. Berg again uses *Bühnenmusik* as a harbinger of fantastical events, while grounding the action in reality, however malleable it is. He does so by composing a “re-tuning” passage for the *Schrammelmusik* ensemble that occurs mm. 649-664. The stage clarinet begins this process with an arpeggio of three ascending [0157] sets, which ends on an E-natural.⁶⁰ At this point, the accordion picks up the E-natural, rolls an E minor chord, and the fiddles “tune.” Despite Berg’s indication of this section as a slow waltz, the re-tuning is to be free and “un-dancelike.”⁶¹ The *scordatura* instructions for the two fiddles are such

⁶⁰ Note that the stage clarinet is doubled by the orchestral celesta, a timbral symbol of fantastical elements in *Wozzeck*; which implies that the orchestra conductor should lead mm. 649-651 at the very least.

⁶¹ “...jedoch sehr frei und nicht tanzmäßig.” Berg, *Wozzeck* Act II Scene 4, m. 651.

that each string has been raised by a whole step, but to create the tuning effect, Berg specifies the first fiddle's E string now be adjusted to an F-natural, not an F-sharp. The second fiddle's A string is accordingly indicated to play an A-sharp, rather than a B-natural. Thus between the fiddles, symmetrical "detuned" clusters are heard and subsequently resolve to the previous, also symmetrical, *scordatura*. (These are the [0156] sets in m. 654, and the re-tuning of these to [0257] in m. 655.) Berg calls for two quarter tone "steps" in the re-tuning, which make the direction of each fiddle's re-tuning aurally apparent.⁶² At the same time, the accordion alternates between E-minor and D-minor triads. This is humorous as the latter chord is traditionally provided for strings against which to tune, but these fiddles sound a whole step higher, so the drunk accordionist is presumably unsure which to give. The bombardon player catches on in m. 656, and plays an E minor version of the bassline that opens the scene. The guitar follows, but, unlike the fiddles, its highest string is tuned *down*. (The guitarist overshoots the desired E-natural in m. 659, and finds it by m. 660.) The accordion continues to alternate between E minor and D minor chords, both fiddles "check" their open strings individually and in pairs, and the clarinet plays its [0157] motive in reverse—normally (the slurred version in mm. 660-661), dogmatically (the *pesante* version in m. 662), and equivocally (the glissando version in m. 663). Berg dismisses the bombardon player in m. 662 just before the tuning ends to return to the orchestra pit (and pick up the tuba).⁶³

⁶² The fiddle parts are juxtaposed in such a way that without hearing the "movement" of the two aforementioned strings, it would be difficult to distinguish one fiddle from another.

⁶³ Berg urges the player to move quickly, as the player's next entrance is in m. 713.

660

pizz.

sich quasi einspielen.

gliss. 7

Ende des Stimmens

Vierteltöne
zwischen dis - e - - - - f u e

f

pp

f

660

begibt sich rasch ins gr. Orch. und nimmt Baßtuba
(1. Takt 713)

sehr frei, jedoch in Phrasierung und Geste mit Anlehnung an den Walzerrhythmus
very free, but in imitation of waltz

Narr
Idiot

Lu - stig, lu - stig,
Joy - ful, joy - ful,

Wozzeck beachtet den Narren anfangs nicht
Wozzeck does not notice him at first

Wozz.

B Ü H N E N M U S I K

Figure 2.13. *Wozzeck* Act II Scene 4, mm. 658-664

There is another level of humor within the passage, which relates to the structure of the scene. Since diegetic music provides “objectivity” by grounding a scene in a time and place, there is the question of why the *Schrammelmusik* ensemble is tuning at *this* late point, having played so much throughout the scene. And indeed because the ensemble has re-tuned, one expects more stage music to come—yet the orchestra soon takes over during the change of scene music, so it is bewildering that nearly the last thing the “alcoholic band of beer fiddlers” do is

tune their instruments!⁶⁴ Aside from comedic ends, there is no straightforward dramatic explanation of this, so it seems reasonable to assume the placement of this passage has further meaning. Recognizing the “tuning” sequence as an example of Berg using *Bühnenmusik* to anticipate fantastical, surreal elements, one may view the tuning as a representation of a malleable reality. Thus, the unexpected changes—the absence of the pit orchestra, the textural sparseness, the slow tempo, and the actual bending of pitches—bring the scene, once mercurial, to a halt. The stasis brought about by the *Schrammelmusik* ensemble’s re-tuning is thus an element of dramatic structure that is not preempted by the Büchner text, and is Berg’s creation alone. Not only does this sort of “gap” separate the Idiot’s prophecy from the hubbub of the scene, but it provides a formal caesura before the Scherzo’s coda. In this sense, the stasis actually reinforces Berg’s syntax just as much as it provides a change that propels the drama.

The final *Schrammelmusik* entrance in the scene follows the interchange between the Idiot and Wozzeck, and is a *subito* return to the waltz theme. It is subsumed, however, by angular hits in the pit orchestra, which, though also written in 3/4, occur every two beats (this process that recalls the isorhythmic motives of the opening *Ländler*). The *ritard* on the third beat of m. 670 helps the stage fiddles cut through the wall of sound, as this extension provides more time for the orchestral brass to diminuendo (*fp*). This allows the fiddles’ eighth note upbeat to m. 671 to be more audible, and theoretically allows the *Schrammelmusik* ensemble to set the tempo for the waltz. Beyond this, there is only one change of tempo while the stage musicians play (an *accelerando* mm. 682-684), and the passage poses no significant coordination challenges. The orchestral strings and woodwinds pick up the waltz starting in m. 680, and the ensuing interlude

⁶⁴ Translations of Berg’s lecture on *Wozzeck* differ, but the Redlich translation used by Perle has the most colorful description of the *Schrammelmusik* players.

includes both waltz and *Ländler* materials from the previous scene. The orchestra's reclamation of diegetic music becomes a dramatic action in of itself, as the *Schrammelmusik*'s initial "objectivity" is compromised by its use in the interlude. There is also the sense that the music has aurally moved to another realm (which it literally has, its source changing from the stage to the pit), and that the stasis the re-tuning episode brought simply delayed the inevitable and fantastical.

III. The Tavern Piano

Like the two other examples from *Wozzeck*, Act III Scene 3 begins with a diegetic source that emerges from an interlude. The entire act is cast as a series of inventions on specific musical parameters. The second scene ("Invention on a Pitch"), in which Marie is killed, progresses to Berg's "Invention on a Rhythm," which is a series of canonical permutations of a *Hauptrhythmus* (rhythmic cell). The diegetic music of the latter scene is anticipated in the orchestral interlude following Marie's death, and played by the bass drum (mm. 114-115) before the final B-natural crescendo. The tavern piano, the only voice for the first four measures of the new scene, presents this rhythmic subject, which is now set as a "*Schnellpolka*" (fast polka). Berg indicates that the piano should be played "roughly and always *ff*," which, in conjunction with its metrical divisiveness, presents the *Hauptrhythmus* very clearly. This indication also takes into account the physical location of the instrument, in that the instructions call for rather percussive attacks. (Also, the piano's exact placement on the stage is likely more subject to a stage director's vision than a conductor's preference—in which case the *ff* attempts to guarantee its audibility.) Its intermittent entrances serve to ground the scene in the tavern location; its relentlessness recalls the frenzied dances of the Act II Scene 4 *Schrammelmusik*, which also took

place in a tavern.⁶⁵ It functions on another level, however, serving as a “substitute” for the pit orchestra: is the sole accompanist for the first nineteen measures of the scene, and for Margret’s song (mm. 168-179). Thus, the tavern piano is not only diegetic, but at times *quasi*-diegetic, a paradigm Berg explores more deeply in *Lulu*. Finally, the piano may, as needed, double the chorus parts later in the scene, illustrating that *Bühnenmusik* can function to aid the musical efficacy of a production, rather than simply pose coordination difficulties.

Berg’s short *Hauptrhythmus* allows the motive to be recognizably augmented and diminished, often in canon throughout the scene, without losing its aural identity.

Schnellpolka von einem Burschen ungemein roh und *sempreff* gespielt
Fast Polka played very coarsely and sempreff by one of the young men

122 (♩ = 160) 125

Ein verstimmtes
Pianino
auf der Bühne

Wozzeck an einem der Tische
is seated at one of the tables

Dirnen u. Margret
Girls and Margret

tanzen eine wilde „Schnellpolka“ / *are dancing a wild and rapid Polka*

Burschen
Apprentices

tanzen eine wilde „Schnellpolka“ / *are dancing a wild and rapid Polka*

*) ♯ bedeutet in dieser Szene Hauptrhythmus (siehe Takt 114-115)

Figure 2.14. *Wozzeck* Act III Scene 3, mm. 122-125, *Hauptrhythmus* in piano right hand

⁶⁵ There is some ambiguity as to whether the drinking establishments in Act II Scene 4 and Act III Scene 3 are the same ones. The former is described as the garden of a “*Wirtshaus*” (tavern or inn) in the score, and the latter, a “*Schenke*” (low tavern).

The regularity of the left hand pulse, and the heavy articulations in the right hand, clarify the tavern piano's presentation of the subject (mm. 122-125). Because rhythm is perceived *in relation* to fixed tacti, the dogmatic oscillations (of the [015] set in eighth notes) provide a consistent pulse so that the subject, differentiated in register and declamation, is unmistakable. The repetition (mm. 126-129) only serves to reinforce this. It is significant that Wozzeck's entrance ("*Tanzt Alle, tanzt nur zu*") is marked *f*, while the piano part receives another *Hauptstimme* indication. This practical decision to emphasize the rhythmic subject underpins the diegetic music's structural importance within the passage. Wozzeck's lines become more formally important (indicated via *Hauptstimme*) in m. 130, when he, watching Margret and the *Dirnen* (tavern women) dance, orders them to "leap, sweat, and reek!—for one day the devil will take [them]."⁶⁶ Wozzeck's line is presented as an augmentation of the subject (2:1). The timpani enter at m. 141, a metrically displaced iteration of the subject (1:1), followed by the rest of the orchestra at m. 145 (2:1).

The next entrance of the piano occurs as a pickup to m. 149. Here, the subject is now augmented and displaced. The dramatic, rather than formal, consequence of this is that the piano serves to punctuate Wozzeck's phrases, sometimes providing a downbeat that clarifies syncopations in the vocal writing. (This is another case in which a diegetic instrument aids a singer.) Texturally, the piano also provides the only low-register music in this section (the sustained octaves in mm. 152-154). Berg calls for the sustain pedal to be depressed. The effect is that the F-sharps (mm. 148-151) blur into the F-natural octave in the following measures. Berg raises the pedal for the *a tempo* restatement of the original subject as the low brass enters, and

⁶⁶ Berg, *Wozzeck* Act III Scene 3, mm. 130-141.

the piano reclaims its former sonic identity as an instrument whose rhythmic qualities are of greater compositional concern than its coloristic ones.

421

etwas ruhiger (♩ = 70) 150

1. 2. Kl. in B
3. 4.

1. 2. Hr. in F
o. D.
3. 4.

Trgl.

Hfe.
p immer gebrochen

gleichsam versuchend, eine Begleitung für das Lied Wozzecks zu finden

Das Pianino
a. d. Bühne

149 150

p dolce

Wozz.

kehr-ten sie ein. Mein Wein... ist gut, mein Bier... ist klar, Mein Töch - ter - lein
taste of her wine. My wine... is good, my ale... is clear, my daugh - ter dear

etwas ruhiger (♩ = 70) 150

1. 2. Solo
1. VI.
3. 4. Solo
1. VI.
4. Übrig
2. VI.
Vla.
Vlc.

Figure 2.15. *Wozzeck* Act III Scene 3, mm. 148-151

Margret sings the final stanza of the German folk song “*Auf dieser Welt hab(e) ich keine Freud(e)*” (“From This World I Have No Joy”). The earliest edition of the song appears in an 1885 anthology (*Deutsche Volkslieder aus Oberhessen*), and the song is thought to have been written sometime in the 1700s.⁶⁷ Berg drops letters from words and makes a mess of the text’s prosody (presumably to convey intoxication, as he did with the hunting song in Act II Scene 4). This is not only a dramatic choice, but a formal one—Berg assigns fragments of the *Hauptrhythmus* to Margret, which is responsible for the strange prosody. The piano accompanies her in simple quarter and half notes in a gentle, polytonal language,⁶⁸ using an arpeggiating bass while the right hand plays an interval cycle common in Berg’s orchestral music.⁶⁹ Margret’s melodic contours are derived from “*Auf dieser Welt...*” and retain some of the pitch relationships of the original song. Rather than writing specific pedal markings for the piano, Berg’s indications (a general “*mit Pedal*,” the excessive use of slurs, and subtle *rallentandi*) make the setting come across as almost laconic, rather than emphatic per the text (“I do not like Swabia; I won’t wear long dresses; long dresses and pointed shoes are not for servant girls to wear!”). This opposition between form and material is particularly Bergian, as is the humor injected when the pianist (presumed also to be inebriated) is forced to cross hands (m. 179). Although the scene is an “Invention on a Rhythm,” Berg refers to the F-sharp vs. F-natural clash in that the left hand moves from outlining D-flat major arpeggios to C major ones (mm. 169-173, and mm. 174-179,

⁶⁷ Otto Böckel, ed., *Deutsche Volkslieder aus Oberheßen* (Marburg: N. G. Elwert, 1885). The verse Margret actually sings seems to be omitted from modern notated editions of “*Auf dieser Welt habe ich keine Fruede*,” but appears in the Böckel, which simply contains the texts.

⁶⁸ In Berg’s 1929 *Wozzeck* lecture, he also describes some of the earlier polytonal incidences, such as those that occur in the antecedent phrase of the Act II Scene 4 *Ländler*, as deliberately humorous.

⁶⁹ A striking instance of the same progression occurs at the beginning of the second movement of Berg’s Violin Concerto.

respectively),⁷⁰ which is certainly a reference to the melodramatic half step clash Berg used before. Finally, the stanza Margret sings anticipates the further alienation Wozzeck experiences by virtue of it being part of such a nihilistic song. It is difficult to know with certainty whether 1920s audiences would have realized this connection, given how rarely the stanza Margret sings actually appears in anthologies, but there again, *diegetic music foreshadows the fantastical* (in this case, anticipating the circumstances and imagery of Wozzeck's death in the following scene).

From m. 202 until the end of the scene, Berg uses the *Bühnenmusik* piano in an ingenious, rather uncommon fashion. As chorus members begin to see the blood on Wozzeck's clothes, their reactions consist of insistent questions with angular contours and harsh articulations. Berg doubles these lines (at pitch) on the tavern piano, but without dynamics or articulations, and labels it as a "*Chorauszug*" (choir reduction). Its purpose is to supply pitches to these singers, and Berg is emphatic that the piano should not be otherwise audible.⁷¹ This sort of reasoning seems to assume the worst in regard to the chorus' abilities, but it is potentially very helpful to have this option given not only as a footnote in the score, but in the piano part itself. To what extent the piano doubling is necessary with singers who are dexterous enough to produce these notes is unclear. But this choice reveals Berg's realistic concerns with stage matters, and his conviction, like Wagner's, that music and drama are reciprocal elements in service of a greater artistic experience.

⁷⁰ Furthermore, the F-sharp appears in the right hand within a B major triad whose "resolution" to the suspended fourth over a C major triad may also be an attempt at humor over the harmonic connotations of octave displacement.

⁷¹ "If the [musical] entrances of the tavern goers encounter insurmountable intonation difficulties, they can be aided by the stage pianist, but [the piano is] only audible to the singers." Berg, *Wozzeck* Act III Scene 3 instructions, m. 202.

Conclusion

Berg, unlike Wagner, did not ostensibly set out to change opera history, or to revolutionize the relationship between music and drama. In his brief essay, “A Word About *Wozzeck*,” he addresses the issue of musical and dramatic reciprocity:

I simply wanted to compose good music; to develop musically the contents of Georg Büchner’s immortal drama; to translate his poetic language into music. Other than that, when I decided to write an opera, my only intention, as related to the technique of composition, was to give the theatre what belongs to the theatre... The function of a composer is to solve the problems of an ideal stage director. On the other hand this objective should not prejudice the development of the music as an entity, absolute, and purely musical. No externals should interfere with its individual existence.⁷²

This explains something about the way Berg approached composing the piece, and also speaks to the challenge he overcame—to create substantial works despite the dissolution of long forms that were traditionally driven by tonality.⁷³ Yet Berg, in engaging directly with this, fulfills the *most* conservative of “tonal forms” with contemporary materials. The formal divisions Berg uses not only enable the exploration of multi-movement, long-form works (such as Act II, a “Symphony in Five Movements”), but sets each scene as a self-contained system.⁷⁴ Self-containment is a

⁷² Douglas Jarman, *The Music of Alban Berg* (Berkeley: University of California Press, 1985), 152.

⁷³ Berg’s 1929 lecture, which appears in full in Bryan Simms, *Pro Mundo–Pro Domo: The Writings of Alban Berg* (Oxford: Oxford University Press, 2014).

⁷⁴ This is not to say that materials are not shared between scenes—quite the contrary, not least due to the importance of leitmotivic transformation across the opera. Containment and continuity are not at odds in Berg’s

crucial property of the opera's diegetic music, and it is clear through Berg's sketchbooks that material, such as the *Schrammelmusik* in Act II Scene 4, was initially developed independent of the orchestral music.⁷⁵



Figure 2.16. *Wozzeck* Sketchbook No. 1, working out of clarinet melody sung and whistled by Andres, resembling ca. mm. 603-604⁷⁶

music, and it is in fact the uncanny ability to achieve large-scale continuity while maintaining local formal rigor for which Berg deserves the most credit.

⁷⁵ The military band music is another such example of this, if one considers its appearances in the *Marsch* movement of Berg's earlier *Drei Orchesterstücke*. The tavern piano accompaniment of Margret's song was likely written separate of the scene, but this is speculation based on the fact that it is such a technically involved adaptation of the folk song in regard to Berg's rhythmic schema.

⁷⁶ Scan from the Musiksammlung of the Österreichische Nationalbibliothek. F21.Berg.13/VI Mus; <http://data.onb.ac.at/rec/AL00542238>.

The independent completion of these elements—in particular the pre-composition of the *Ländler* and waltz material—is substantiated by the sketches, since, according to David Fanning’s analysis, “the whole point of the sketch is to combine passages which may have been worked out individually in some detail beforehand.”⁷⁷ This enabled Berg to “appropriate” his own materials for use within the opera, and therefore when the (very much stratified) layers of *Bühnenmusik* and orchestral music are bridged—as happens when motives are passed between them within a passage, et cetera—the layers became co-operating, inter-dependent musics.⁷⁸ This in turn expressed ideas Büchner’s text could not alone. While the exchange of diegetic leitmotives between the stage and pit does occur in *Tristan und Isolde*, these relationships have been shown here to be far less complex than those in *Wozzeck*. Accordingly, the execution of Berg’s *Bühnenmusik* is much more challenging.

Postlude

We know something about how the *Bühnenmusik* rehearsals in *Wozzeck* progressed in preparation for its first performance from letters to his wife, Helene, which were written during the final weeks of the rehearsals for the premiere. In the letters, Berg expressed excitement not only with conductor Erich Kleiber’s interpretation of the music, but how successful he ultimately was in getting the musicians to play accurately, both musically and dramatically. This appreciation extends to the work that went into the *Bühnenmusik* execution, particularly of the

⁷⁷ Fanning, David. “Berg’s Sketches for *Wozzeck*: A Commentary and Inventory,” 282.

⁷⁸ See John Roeder, “Co-operating Continuities in the Music of Thomas Adès,” *Music Analysis* 25, no. 1/2 (2006): 121-54.

Act II Scene 4 *Schrammelmusik*, which proved to be—unsurprisingly—the most difficult to manage. From Berg’s letters, it seems that not only were there significant coordination difficulties, but also struggles in the performance of the *Schrammelmusik* itself. Below are excerpts from a sequence of letters written to Helene just days before the premiere.

Berlin, December 1, 1925, at 12:30am:

There are not many more orchestral rehearsals... Not excessive to my mind!
Tomorrow, Wednesday, I’m having stage rehearsals... also Thursday and Friday, when I hope to get the singers absolutely perfect. Especially the music in the Inn Scene, which is quite impossible so far and gives me real headaches... Say to [Erwin Stein] it’s going to be a tough nut to crack but that we’ll manage it... I rehearse till 1.30, find somewhere for lunch 2 to 3, at 3.30 rehearsal of the Inn Scene band, 6.30 to 8 rehearsal with the singers... So between 3.30 and 6.30, instead of having a rest, I’ve got to rush around for three hours...⁷⁹

December 2, afternoon:

So if Kleiber succeeds, as he will, in getting the last bit out of the orchestra, we shall have a really remarkable production. Today I feel once more that it will be something absolutely fantastic... This afternoon there’s a very important rehearsal with guitar and accordion players, and clarinetists [sic], so I hope the stage band

⁷⁹ Grun, 347-348.

will be good too. All this in great haste, just to counteract my pessimistic letter of this morning. More tonight.⁸⁰

December 2, 12:30am:

Meanwhile I have got Kleiber to put on another orchestra rehearsal for clearing up odd mistakes. He is all-powerful at the moment, so I can prevail on him to do almost anything... Stage rehearsal till two, and directly after it a rehearsal for the Inn Scene band. Everything with the musicians: successful!... [Regarding the reception of Kleiber], I don't notice any sort of friction in the company or the orchestra—far from it.⁸¹

December 3, at night:

Stage rehearsal pretty successful again... The last Inn Scene also very good, but the big Inn Scene isn't quite satisfactory yet, although the staging is all right and full of brilliant touches. But I am afraid the musical side gets a bit lost because of all the production and acting details. Besides which, the stage band is still bad, my biggest problem child, despite all the extra rehearsals. 'What is going to happen?' says Wozzeck.⁸²

⁸⁰ Grun, 349.

⁸¹ Grun, 349-350.

⁸² Grun, 351.

December 5, 1am:

Today I'm more optimistic again about *Wozzeck*. A magnificent accordion player, an American virtuoso. So the biggest danger is eliminated.⁸³

December 6, 1:30am:

Today there was a rehearsal for the Inn Scene band, which went quite well; but the orchestral rehearsal with the complete stage 'effects' was really chaotic, [and] I really don't know how everything's going to work in a week's time. My only comfort is that Kleiber himself is a perfectionist.⁸⁴

These passages are the only documented accounts of the *Bühnenmusik* rehearsals leading up to the premiere of *Wozzeck*. They reveal the noteworthiness of the coordination problems, and demonstrate the two primary ways in which they were solved: by adding rehearsals, and by changing personnel. Berg's 1929 lecture (four years of successful *Wozzeck* performances later) waxes an idealism that, understandably, Berg did not always retain in rehearsals, but which was affirmed by Kleiber's leadership and meticulousness. Certainly, to instrumentalists and conductors working today, adding an additional 180-minute rehearsal for a *Bühnenmusik* ensemble seems extreme—particularly if the group is rehearsing *by itself* rather than onstage in coordination with the pit orchestra, where the true difficulties lie. The mentions of these rehearsals in the letters subtly convey a backstage drama, at whose conclusion the “biggest

⁸³ This was referred to in the section on *Schrammelmusik* instrumentation, and Berg's visit to the accordion manufacturer. Grun, 352.

⁸⁴ Grun, 353.

danger is eliminated” and replaced by a competent accordionist, thus saving Berg’s “problem child.”

CHAPTER THREE
THE JAZZBAND IN *LULU*

“*Wie jene andern—unten im Parterre...*”

“Like those others—down in the orchestra pit...”

—Animal Tamer, Prologue to Berg’s *Lulu*

Lulu (1935)

While *Wozzeck*’s vernacular music stylistically originated in Berg’s homeland, *Lulu*’s did not. Of the major uses of diegetic music in *Lulu*, the most significant is the theatre “Jazzband” in Act I Scene 3, which performs from backstage two whitewashed, Weimar-esque adaptations of American jazz styles. Berg’s relationship with this kind of music is worth addressing not only for compositional, rhythmic, and timbral reasons, but for spatial concerns in the execution of *Bühnenmusik* in *Lulu*. Because of its dramatic and musical content, *Lulu* is the more cosmopolitan of the two operas, and draws more heavily on “exotic” vernacular musics. While much of *Wozzeck* was planned before the outbreak of World War I, *Lulu* was composed entirely in the middle Weimar Republic years, a period in which a fascination with the “exotic” served as a sophisticated front for cultural appropriation. The Wedekind text testifies to this—*Lulu* becomes a “menagerie” replete with “lesbians,” “harems,” and “negroes”—and Berg’s score is understandably more syncretic than his score to *Wozzeck*.¹ To witnesses of the New Objectivity movement, jazz music “[occupied] a privileged position... as mechanized processes and precise executions of a rhythmic blueprint,” while “former staples, such as waltzes, polkas, mazurkas,

¹ Derek R. Strykowski, “The Diegetic Music of Berg’s *Lulu*: When Opera and Serialism Collide,” *Journal of Musicological Research* 35, no. 1 (2016): 10.

folk songs, and military marches gave way increasingly to the foxtrot and to jazz rhythms.”² This observation also describes one of the compositional shifts Berg went through at this time: whereas *Wozzeck* contains nearly all of the “former staples,” *Lulu*’s popular musical elements are entirely of the new Weimar dance hall sort.³ The other major shift Berg went through in these years was his very individualized, and well known adoption of Schoenberg’s twelve tone method.

In *Lulu*, Berg retains certain elements from the older, “free-[a]tonality” style that produced *Wozzeck*. Among these are concerns with the “irrational, the absurd, and the grotesque,” as well as the “primitive male-female love struggle,”⁴ and the “inexorable pattern of suffering for the innocent.”⁵ Musically, Berg depicts these through the tension between his formal, fixed structures, and the hyper-emotional content of his materials, which is also common to *Wozzeck*. Indeed, Berg uses diegetic music in both operas (particularly the tavern music in *Wozzeck* discussed above, and the *Jazzband* in *Lulu*) within the bounds of strict formal structures and tonal hierarchies to create a “nightmarish image... whose insistent rhythms propel the dancers onwards to an inescapable fate.”⁶

In discussing the diegetic music of *Lulu*, it is important to view the opera as emerging from a very different period of social consciousness in Vienna. The “New Objectivity” movement attempted to represent the grotesque aspects of life in a realistic manner, and though

² Cornelius Partsch, “That Weimar Jazz,” *New England Review* 23, no. 4 (2002): 180-182.

³ It might be fair to attribute some of these differences to the fact that Büchner’s *Woyzeck* was originally set in the nineteenth century.

⁴ Homosexual love plays a role in *Lulu*, although Countess Geschwitz is characterized in a way that calls nearly carnivalesque attention to her more androgynous traits. In this sense, Padmore’s “primitive male-female love struggle” label may be relevant to the Geschwitz-Lulu relationship, too.

⁵ Padmore, 48, 46.

⁶ Padmore, 45.

Berg outwardly repudiated the movement,⁷ his aesthetics were influenced by it. Accordingly, there is less surreal imagery, and *Lulu*, even more so than *Wozzeck*, is a series of tableaux. For this reason, diegetic music in the opera is spatially fixed.

I. Historical and Spatial Concerns

Spatial concerns in the performance of jazz are significant in that, unlike a marching military band—such as the Drum Major’s cohort in Act I of *Wozzeck*—dance hall jazz performers are essentially fixed in space, and rely on aural and visual cues from one another within a static setup to achieve musical cohesion.⁸ It bears repeating that “jazz” in Germany and Austria was markedly different from the American “legitimate jazz”⁹ of the same period—in particular it was less dialogical. As it happened, Berg found little idiomatic comfort in jazz, whether American or Weimar. His compositional guide when approaching jazz idioms was Alfred Baresel’s *Das Neue Jazz-Buch*,¹⁰ a brief volume that describes possibilities for piano ornamentation and syncopation, that could be described as a cursory Weimar approach to ragtime. Instrumentation and broader aesthetics are only mentioned in a short concluding essay.¹¹

⁷ Expressed in a letter to Schoenberg from 1925. Simms, 198.

⁸ This was not the case for choreographed jazz acts in Weimar culture, such as performances by the popular Tiller Girls, who “appear to roll straight from the assembly line onto the stage.” Partsch, 183.

⁹ A term used by J. Bradford Robinson in his critique of Adorno’s series of controversial writing on jazz, to refer to the still broad definition “used by historians today, i.e. the tradition extending from the New Orleans trumpet kings to the Free Jazz of the 1960s and 1970s.” J. Bradford Robinson, “The Jazz Essays of Theodor Adorno: Some Thoughts on Jazz Reception in Weimar Germany,” *Popular Music* 13, no. 1 (1994): 22.

¹⁰ Patricia Hall, *A View of Berg’s “Lulu” Through the Autograph Sources* (Berkeley: University of California Press, 1996), 39.

¹¹ At least two copies of the Baresel are currently housed in the Musiksammlung of the Osterreichische Nationalbibliothek. One is in general collections, and Berg’s own copy of this book is also stored here. Berg’s notations in the Baresel are minimal, but suggest he relied on the book for rhythmic guidance (for example, Berg has bracketed a musical passage and marked it “Foxtrott”).

Because Berg relied so heavily on Baresel's manual, we can assume that Berg's assimilation of aspects of Weimar jazz was overwhelmingly due to cultural exposure, rather than formal training in or substantive musical engagement with jazz.

Berg's use of strings¹² in the *Jazzband* may be attributed in part to figures such as Paul Whiteman, a violist-turned-bandleader from the United States, who received a warm welcome upon relocating to Vienna in the 1920s. Whiteman, in his book *Jazz*, implicitly (and outrageously) attributes jazz's origins to whites, and was an early proponent of integrating popular songs, jazz, and "perennial selections from the classical repertoire" into something later referred to as "symphonic jazz."¹³ George Gershwin's own association with Berg, and unattainable plans to study with him in Vienna, may have provided additional impetus to Berg to experiment with the integration of jazz into his language.¹⁴ The 1929 concert aria, *Der Wein*—a work that shortly preceded *Lulu*—was Berg's most overt experimentation with jazz colors and sonorities, and specific popular idioms, such as tango (*Der Wein* mm. 39-63). *Der Wein* is seen by scholars (including Berg's authorized biographer, Willi Reich) as a forerunner to Berg's use of Weimar jazz idioms in *Lulu*. Berg's engagement with some jazz idioms in *Der Wein*, however, should not suggest that such elements in *Lulu* had their genesis in authentic jazz. Rather, they reflect expansions of Berg's new use of timbre and spatialization to further musical-dramatic purposes within the twelve tone language Berg had adopted by this point. In this sense, the music has jazz associations but not historical or cultural authenticity.

¹² The score calls for three violins, each "mit Jazz-Trichter." These are violins with horns attached, reminiscent of phonograph bells, whose sound thereby lacks some of the lower and higher partials. In the upcoming Wiener Staatsoper production (December 2017), the violinists will purportedly use amplified regular violins.

¹³ Robinson, 6.

¹⁴ Whiteman commissioned and premiered Gershwin's *Rhapsody in Blue* in 1924. Ibid.

The *Jazzband* itself is used in *Lulu* as a separate, diegetic element, despite its formal congruence with the orchestra music. This partial integration could be viewed as equivocation—another instance of Berg’s “impulse toward self-effacement, toward self-obliteration”¹⁵—since superficially, the *Jazzband* material is performed by a stage group to establish a dramatic atmosphere, while the orchestral music is the “absolute.” However, there is an engineered congruence between the stage and orchestra music: Berg’s *Jazzband* is systematized within his twelve tone processes, and the materials are integral realizations of Berg’s compositional schema. This congruence—between *exotic* (rather than fantastical) phenomena and the fulfillment of formal plans—certainly resonates more with aspects of “New Objectivity” than Expressionism (the latter which, by 1929, was seen in some Viennese circles as exhausted, though it remains the movement with which much of Berg’s music is associated).

Berg’s choice to put the *Jazzband* offstage certainly depicts Weimer jazz as “nightmarish,” mechanical music: not only is it relentless, but its musicians are physically intangible to the characters within the scene. Act I Scene 3 comes across as particularly intimate because of this; the “play-within-the-play” phenomenon makes the action of Berg’s scene, set in Lulu’s backstage dressing room, genuine—at least in comparison to the contrivances of whatever might be unfolding on Lulu’s (offstage) “stage.” Unlike the *Wozzeck* military band, *Schrammelmusik* ensemble, or tavern piano, the *Jazzband* inflicts itself on the scene from a distance—a “New Objectivity”—devoid of any human contact with the characters, leaving Lulu and Alwa to their own realities.

¹⁵ Theodor W. Adorno, *Alban Berg: Master of the Smallest Link* (Cambridge: Cambridge University Press, 1994), 8.

II. Coordination

The first entrance of the *Jazzband* (“Rag-time” music) immediately follows the Scene 2 interlude. Berg specifies that the ensemble be played from offstage, rather than the pit, if possible,¹⁶ but suggests that the “*Jazz-Schlagwerk*” (percussion) remain in the orchestra pit.¹⁷ This seems to be helpful in that duplicate instruments are not needed, but it creates coordination difficulties because of the distance between the offstage area and the pit, and the likelihood of visual barriers. Because there are several *ritardandi* in the ragtime music, it is necessary for two conductors to be used if a backstage video monitor is unavailable. Berg sets a tempo equivalency in m. 992, so that the new eighth note pulse (120) equals a single eighth note triplet from the preceding interlude (marked in quarter note pulses at 40 beats-per-minute).

¹⁶ “*Die Jazzband soll, falls keine eigene auf der Bühne vorhanden ist, die Aufstellung am rechten Eck des großen Orchesters (beim Blech, Schlagwerk, Klavier und Vibraphon) nehmen, so daß sich dorthin also nur mehr die 3 Klar. Und 3 Viol. (der 2. Viol.) zu begeben haben.*” “The jazz band must, if it is not possible to place it offstage, be [positioned] in the right corner of the orchestra pit (by the brass, percussion, piano, and vibraphone), so that the three clarinets and violins go there.” Berg, *Lulu*, 239.

¹⁷ “*Jazz-Schlagwerk...das jedenfalls im Orchester verbleibt.*” Score instruction, 240.

992 Rag-time (♩ = 120)^{*)} **995**

1.2. Kl.(F)

Alt-Sax.(Es)

Ten-Sax.(B)

1. Jazz-Trp.(C)
m. D.
2.

1. Jazz-Pos.
m. Dpf.
2.

Sousaphon

**) Schl.gwk
2/4 kl. Tr.
2/4 gr. Tr.

Banjo

Klav.

1.2.3. Vl.
m. Jazz-Trichter

Kb.

*) ev. hinter der Szene

Verhang - - auf

3. Szene Garderobe im Theater Links hinten die Tür, rechts hinten eine spanische Wand. In der Mitte, mit der Schmalseite gegen die Zuschauer, ein langer Tisch, auf dem Tanzkostüme liegen. Rechts und links vom Tisch je ein Sessel. Links vorn ein Tischchen mit Sessel. Rechts vorn ein hoher Spiegel, daneben ein hoher, sehr breiter, altmodischer Armisessel. Vor dem Spiegel ein Hocker, Schminkschale etc. – An der Hinterwand ein großes Plakat, das trotz Aufschrift etc. als Kopie des Porträts Lulus aus der vorigen Szene zu erkennen ist.

Alwa links vorne, füllt zwei Gläser mit Champagner

Seit ich für die Bühne arbeite, habe ich kein Publikum so außer Rand und Band gesehen.

Verwandlung des alten Tempo (♩ = 40) [wonach Triolen - ♩ = 120 = Neus]

Klav.

992

1.2. Fg. *dim.* 2. 3. 4. nehmen Dpf.

Hr.(F) o. D. 2. 3. 4. nimmt Dpf.

3. Pos. o. D. *pp* nimmt Dpf.

Pk. *pp* nimmt Dpf.

Vlc. *pp* nimmt Dpf.

Kb. *pp* nimmt Dpf.

*) siehe Anmerkung auf voriger Seite

**) Jazz Schlagwerk, bestehend aus: gr. u. kl. Trom. und Beck (freihängend), gr. u. kl. Tempelblock und Stahlbecken, Vibr., das jedenfalls im Orch. verbleibt

Figure 3.1. *Lulu* Act I Scene III “Rag-time” entrance, mm. 992-996

Because the pit orchestra (except for the jazz keyboards and percussion) is marked *tacet* during this music, there are no particular difficulties for the conductor(s) beyond making sure that the

offstage music doesn't fall behind. Lulu and Alwa engage in some spoken dialogue, which is proportionally (not rhythmically) notated in the score by phrase.¹⁸ When the full orchestra reenters in m. 120 (*Andante*), it is written in 4/4 with a quarter note pulse of 60 beats-per-minute. Should the conductor have been conducting the ragtime music in 2/4, rather than 4/8, this requires no change of pulse. It is more likely, however, that, in order to manage the *ritardandi*, the ragtime was conducted in four. Thus, the conductor should subdivide the first measure or so of the *Andante*.

¹⁸ Berg handles this identically to the dialogue between Marie and Margret in Act I Scene 3 of *Wozzeck*, which offers the singers some flexibility.

J A Z Z B A N D

1.2. Kl. (H) **1020** **1020^a**

All. Sax. (Es.) *mf dim. . . ppp*

Ten. Sax. (B) *mf dim. . . ppp*

1. Jaz. Typ. (F) m. 11. *f mf dim. . . ppp*

1.2. Jaz. Pos. m. D. *mf dim. . . ppp*

Neusephon *mf dim. . . ppp*

Beck. *poco f dim. . . ppp*

Schlgwk. kl. Tr. *mf dim. . . ppp*

gr. Tr. *mf dim. . . ppp*

Benjo *mf dim. . . ppp*

Klav. *f mf dim. . . ppp*

1.2.3. Vi. *mf dim. . . ppp*

Kb. *mf mp*

1020
Andante (♩ = 60)
vibr. senza vibr.

Vibr. *pp*

Lulu *tritt im Ballettkleid hinter der spanischen Wand hervor*

Alwa *greift sich - von ihrem Anblick fast schmerz- lich geblendet - ans Herz*

Nach Afrika...

1020
Andante (♩ = 60)

1. Vi. m. Dpf. *H*

m. D. *pp cresc.*

2. Vi. m. Dpf. *gel. pp*

m. D. *pp*

Vla. m. Dpf. *gel. pp*

m. D. *pp*

Vic. m. Dpf. *pp*

m. D. *pp*

Figure 3.2. *Lulu* Act I Scene III “Rag-time” to *Andante* transition, mm. 1018-1021

The second entrance of the *Jazzband* employs two separate iterations of m. 1040 (“1040” and “1040a”), because the combo begins halfway through a measure of orchestral music. This in itself is not problematic, and the tempo relationship of the combo to the orchestra is 2:1. The orchestral overlap lasts merely two more beats, to complete the measure indicated “1040”; this is also straightforward, and Berg’s inclusion of dotted sub-barlines within the score make this easily discernible.

Three additional pieces of information raise questions, however. The first is an indication that the *Jazzband* parts are notated entirely in 3/4—rather than 3/8, as is the case in the conductor’s score. (The conductor’s score transitions from 3/8 to 3/4 with a tempo equivalency such that the pulse does not change between mm. 1043 and 1044.) This simpler notation for the *Bühnenorchester*, without the metric modulation, is presumably for the sake of simplicity, but it is conceivable that this well-intentioned discrepancy could cause some confusion in rehearsal. Furthermore, the dialogue between Lulu and Alwa, indicated spatially in relation to the barlines, does not seem to reflect this pulse equivalence: paradoxically, *fewer* words are assigned to the 3/4 measures, which makes for a discontinuity in declamation if performed faithfully in regard to the spacing. The second difficulty with this passage is Berg’s addition of a small staff marked *Tempoverwandlung* that, aligning with the dotted barlines of the *Jazzband*, consists of three eighth notes per bar from mm. 1040a through 1043. This would seem to be helpful, except that the term *Tempoverwandlung* literally means a *change of speed*, not of metrical grouping (in such a case, a metrical modulation). If the score is read literally, the metrical equivalencies established, both in m. 1040a and between m. 1043 and m. 1044, seem to be in fact negated by this term. The third potentially problematic element is a footnote notation in m1040a (“*in den Stimmen der Jazzband ist schon von hier an 3/4 notiert*”), which signifies that the *Jazzband*

instrumental parts are notated in 3/4, rather than the 3/8 as expressed in the score before the equivalency at m. 1044. A clearer option would be to notate m. 1040a in 3/4 with a quarter note tempo of 120 beats-per-minute, while doubling the note values in the pit orchestra in that measure. This would avoid the confusion of the *Tempoverwandlung* notation, as well as the metrical discrepancy between the *Jazzband* parts and the orchestral score.¹⁹

¹⁹ This issue is virtually identical to that of the meter and measure number discrepancies in the military band in *Wozzeck* Act I Scene III, and the three orchestras in the *Don Giovanni* ballroom scene.

English-Waltz
(♩ = ♩) = 120
1040^a

ev. statt 1. Trp.

1. 2. Kl. (B)

Alt-Sax (E♭)

Ten.-Sax (B)

1. 2. Jazz-Trp (D)
m. 1.

1. 2. Jazz-Pbs.
m. 1.

Sousaphon

Schlgwk
3
8
Stahlbesen
3
8
g7, Tr.
klingt immer eine Oktave tiefer

Banjo

Klav.

1. 2.
Vi.
o. 11.
3.

Kb.

m. Jazz-Trichter
o. Dpf. a2
o. Dpf.
Schlagbaß p

*) In den Stimmen der Jazzband
ist schon von hier an 1/4 notiert

sempre piazz.

1040 **1040^a** halt Alwa ihr Glas hin

Lulu: Noch etwas, bitte. Ihr Vater soll an meinen Erfolg glauben lernen! Er hat

Alwa: ihr einschenkend

Sie trinken zuviel.

Tempoverwandlung

2. Fl. (morendo)

1. Ob. (morendo) Dpf. ab

1. Vi. (morendo) Dpf. ab

Vi. a. D. (morendo) dim. (morendo) Dpf. ab

Vi. a. D. (morendo)

J A Z Z B A N D

Figure 3.3. *Lulu* Act I Scene III “English-Waltz” entrance, mm. 1040-1044

The choice—Berg’s, or perhaps Universal’s—to notate the “English-Waltz” beginning in 3/8 may well have further significance. English waltzes were often notated in 3/4, rather than 3/8, and one may recall that the music of court dance suites was often written in meters with higher denominators at *slower* speeds. Since Berg’s fascination with earlier forms, including Baroque dance suites, evident throughout both *Lulu* and *Wozzeck*, it conceivable that the 3/8 meter choice is a sort of wry statement because “English-Waltz” has been used interchangeably with “Waltz” and “Slow Waltz” since the nineteenth century.²⁰ Formally, it is neither a Baroque court dance nor a *Ländler*, and the *Jazzband*’s orchestration (which includes a banjo, for instance) is more reminiscent of American dance hall music of the period than British aristocratic music.²¹

III. Quasi-diegetic Music and Berg’s Role

By hiding the *Jazzband* from the audience, Berg accomplishes more than conveying the freneticism of Weimar jazz: he blurs the line between diegetic and nondiegetic music. The audience comes to realize quickly, probably aurally, that the offstage music is diegetic. (We gather later that it has been written by the character Alwa, Lulu’s composer lover, whom Berg may have modeled on himself.) But because the ensemble is invisible to the audience, and may,

²⁰ ISTD International Standard Ballroom Dance Syllabus. Accessed August 15, 2017, <http://www.wright-house.com/dance/istd-international-standard-syllabus-ballroom-dance.html>.

²¹ Sebastian Krause and Hannes Vereecke, “Eduard Kruspe’s ‘Prof. Weschke’ Model Trombone,” *Historic Brass Society Journal* 27 (2015): 41-55.

Of the “*Jazz-Posaunen*,” Berg allegedly confided that although he called for alto trombones in the *Wozzeck* orchestra, he did not want something that sounded bright and tinny, like an “American jazz trombone,” so it seems paradoxical that he labeled this “jazz” music as an English-Waltz. Another source of amusement is Berg’s frequent misspellings of “Sousaphone” throughout the sketchbook, the first several of which he corrected in pencil, before writing “Sousaphone = tuba” and ultimately, probably in exasperation, switching to “tuba.” ONB, F21.Berg, Mus. ms. 17489.

in some productions, need to be played entirely, or in part, from one side of the orchestra pit, Berg hybridizes diegetic and non-diegetic music.²² “Quasi-diegetic” is a term used to describe music of this sort. Like “diegetic,” the term is most frequently used in film theory, to describe the rare phenomenon of an underscore and a diegetic source being indistinguishable.²³ Blurring these boundaries is not brand new to opera, but never had it been done within such a rigorous formal framework, and through such a marginalization of a sound source. Berg’s diegetic music can be seen not only as a bridge between the harmonic and rhythmic concerns represented within *Tristan und Isolde* and *Die Soldaten*, but indeed as a way of reconciling phenomena with form. Furthermore, the performance challenges that Berg’s diegetic music introduced were novel, and the frequency of *Wozzeck* and *Lulu* productions has made it essential for conductors to learn how to manage *Bühnenmusik* of this complexity.

²² “This marginal importance may be reflected in the positioning of the source of the music in the background, in a corner, or even entirely out of sight of the audience.” Van Der Lek, *Diegetic Music in Opera and Film: A Similarity Between Two Genres of Drama Analysed in Works by Erich Wolfgang Korngold (1897-1957)* (Amsterdam: Rodopi, 1991), 38.

²³ Derek Strykowski’s 2016 article “The Diegetic Music of *Lulu*: When Opera and Serialism Collide” contains a fascinating analysis of the “signal motive” (doorbell), positing that it is most significant as a quasi-diegetic phenomenon.

CHAPTER FOUR

DIE SOLDATEN

Wagner's music, much of which was written during the period of German Unification, and Berg's, from the years of the failing Weimar Republic, transcended the body politic, despite the sociopolitical happenings of their times. They did this through a common fixation on characters' "inner [psychological] space,"¹ in what were attempts to find meaning in a range of human behaviors and situations.² The numbing, dissociative effects of the Second World War on subsequent generations of composers, however, cannot be overstated. The Darmstadt School ("*Kranichsteiner/Darmstädter Ferienkursen für Neue Musik*") was established shortly following the war, and became an important center for composers such as Boulez, Nono, Berio, and Stockhausen. These composers, in particular, exerted control over musical materials through systems of integral serialism that extended to parameters beyond harmony, which had been Schoenberg's main focus.

¹ Salzman and Thomas, 44.

² This lineage is expressed particularly well in Salzman's and Thomas's chapter on text: "This principle is dependent on the continuous stream of music that issues forth, from both Wagnerian singers and the Wagner orchestra, a stream that itself is dependent on the avoidance or long postponement of resolution. This basic idea, if not its actual musical realization, was carried forward by Schoenberg and Berg and became the stock-in-trade of modernist opera even long after keys, tonality, expectation, resolution, and nonresolution ceased to be important. It is found, enlarged to monumental proportions of size, complexity, and difficulty, in Bernd Alois Zimmermann's *Die Soldaten*." 92.

I. Genesis and Significance

Bernd Alois Zimmermann studied briefly at Darmstadt, but it is clear that, he, as Berg had, and in contrast to figures such as Boulez,³ viewed contemporary opera as a relevant mode of expressing the human condition. Zimmermann's predilection for antiquated forms is a second such similarity to Berg. *Die Soldaten* ("The Soldiers"), which premiered in Cologne in 1965, is a four-act setting of a play by Reinhold Lenz and Jakob Michael.⁴ The story bears striking similarities to Wedekind's *Lulu* plays, and the female protagonist shares the name of Büchner's ill-fated Marie in *Woyzeck*. Further dramatic similarities exist, including a mock sermon, recurring sexual assaults, class conflicts, apocalyptic fears, several murders, overt Freudian father-daughter issues, "jazz mania," and the continuous military subjugation of citizens.

Zimmermann's and Berg's musical affinities also align, reinforcing the notion that these operas come from the same lineage. The preceding case-studies reveal the evolution of many elements over this narrative: the increasing structural importance of *Bühnenmusik*; the role a series of timbral innovations have had on this; a growing trend of appropriating or manufacturing vernacular diegetic music; the reemergence of spatialization as a generative musical-dramatic parameter; and the difficulties of coordinating these successively complex operas' stage music with the orchestra pit. Zimmermann brings these elements to new heights, and *Die Soldaten* reifies them in what many consider to be the most visceral, overpowering achievement of music-drama in the latter part of the twentieth century.

³ Pierre Boulez, *Notes of an Apprenticeship*, Herbert Weinstock, trans. (New York: Alfred A. Knopf, 1968), 268-275.

⁴ Bernd Alois Zimmermann, *Die Soldaten: Oper in vier Akten nach dem gleichnamigen Schauspiel von Jakob Michael and Reinhold Lenz*, Studien-Partitür, (Mainz: B. Schott's Söhne, 1965), frontmatter (unnumbered).

The implausibility of mounting the opera, in part because of the difficulty of integrating so many production elements, understandably deterred opera companies from performing it. After viewing sketches of the work in progress, conductor Wolfgang Sawallisch told Zimmermann the work was simply unplayable. Zimmermann retaliated, buoyed by support from his friends, by releasing a *Die Soldaten* Vocal Symphony in 1963, which was performed very successfully.⁵ (This forty-minute work has antecedents in Berg's Three Fragments from *Wozzeck* and the *Lulu* Suite, both of which were published and performed prior to those operas' premieres.) The performance possibilities Zimmermann proved from this stunt notwithstanding, the opera calls for a nearly prohibitive array of simultaneous elements: singers, dancers, acrobats, electronic tape music, film projection, loudspeaker amplification and live signal processing, an orchestra of nearly one hundred musicians, and several *Bühnenmusik* ensembles including one formed by soldiers "playing" tabletops with cutlery, mugs, and glassware.

Spatialized sound plays a significant role in the opera, and its reemergence as a generative compositional parameter emerged as a product of post-war innovations in electroacoustic music, particularly at centers such as Darmstadt, Köln, IRCAM (Paris), Princeton University, and Mills College (California). Composers gained the ability to mechanically superimpose and manipulate sounds as concrete objects, regardless of whether they were generated by oscillators, or captured from acoustic sources. Multichannel technology allowed for sophisticated three-dimensional soundscapes, virtually impossible in traditional instrumental contexts. Live performer constraints were moot, since an electronic piece's ultimate presentation was usually on a fixed tape medium, and thereby a consistently "accurate" representation of the

⁵ Ilana Walder-Biesanz, "Die Soldaten in Munich is uncomfortable, ugly, violent... and perfect," *Bachtrack*, November 1, 2014, accessed August 13, 2017, <https://bachtrack.com/review-soldaten-hannigan-petrenko-munich-october-2014>.

composer's choices. Technology thus enabled composers to exert complete deterministic control over all sonic parameters, bringing a new level of fidelity to the realization of process-music.

Furthermore, these innovations achieved something new in the diegetic realm. Whereas earlier opera composers such as Mozart and Berg conveyed sophisticated, interdependent relationships between *Bühnenmusik* ensembles, the orchestra pit, and the singers, these relationships relied on a traditional means for their coordination (a shared pulse of some sort, sensitivity to balance, some visual connection, et cetera). The advent of tape music allowed such interdependent relationships to be forged in the studio, not actuated only by live performers in real-time. The possibilities this opened were vast, and Zimmermann applied this technology to several of his works, including parts of *Die Soldaten*, an opera whose acoustic music alone requires enormous skill to execute. Accordingly, conductors, instrumentalists, singers, and sound designers sought new means for coordinating these musics.

II. *Bühnenmusik* Instrumentation

Zimmermann's music, like Berg's, is syncretic—it reconciles the available phenomena of folk music and other vernacular idioms⁶ through subjecting them to rigorous formal processes. Unlike Berg, Zimmermann's chief way of presenting these musics is vertical; this is to say that his music is often a collage, which makes it ostensibly more difficult for a conductor to coordinate. While it is simple to juxtapose elements on a fixed medium (such as recorded sound), it much more challenging to do so when *some* sources are *unfixed* (performed live by

⁶ Desi and Thomas go so far as to wonder whether Zimmermann's use of vernacular music was a "response to the out-of-tune piano and simple-minded polka in Berg's *Wozzeck*." 144.

instrumentalists and singers). Parts of *Die Soldaten*, such as the final scene, are difficult to execute for this reason.⁷

The frontmatter of Zimmermann's score contains a daunting list of *Bühnenmusik* instruments following the large orchestral instrumentation, reproduced in its entirety:

Bühnenmusik

I

3 Triangel (verschiedene Größen, hohes Register)
 2 Crotales (hoch/sehr hoch)
 2 Becken (verschiedene Größen, hohes Register)
 1 Gong (klein)
 1 Tamtam (klein)
 1 Kleine Trommel
 1 Militärtrommel
 2 Bongos
 1 Rührtrommel
 1 Große Trommel (mit Becken)
 3 Pauken
 1 Cow-bell (hoch)
 2 Röhrglocken
 Maracas
 1 Tempelblock (hoch)

II

3 Triangel (verschiedene Größen, mittleres Register)
 1 Crotales (mittel)
 2 Becken (verschiedene Größen, mittleres Register)
 2 Gongs (mittel/groß)
 1 Kleine Trommel
 2 Tom-toms
 1 Rührtrommel
 3 Pauken
 1 Cow-bell (mittel)
 6 Röhrglocken
 Maracas
 1 Tempelblock (mittel)

III

3 Triangel (verschiedene Größen, tiefes Register)
 1 Crotales (tief)
 2 Becken (verschiedene Größen, tiefes Register)
 1 Gong (groß)
 2 Tamtams (klein/groß)
 1 Kleine Trommel
 1 Tom-tom (tief)
 1 Rührtrommel
 3 Pauken
 1 Cow-bell (tief)
 4 Röhrglocken
 Maracas
 3 Tempelblöcke (verschiedene Größen, tief)

Jazz-Combo

1 Klarinette in B
 1 Trompete in B
 1 Gitarre
 1 Kontrabaß (mit elektrischem Verstärker)

Sollte sich der Orchestergaben für die Aufnahme aller Instrumente als zu klein erweisen, so kann das gesamte Schlagzeug (mit Ausnahme des Paukenspielers) sowie Klavier, Cembalo und Celesta im Probenraum des Orchesters untergebracht werden: akustische Übertragung durch Lautsprecher-Gruppen links und rechts des Bühnenportals in den Zuschauerraum; Fernseh-Verbindung mit dem Dirigenten; Leitung im Probenraum durch einen assistierenden Dirigenten.

Lautsprecher-Übertragung der Bühnenmusik und lokale Disposition siehe Seite 458. Am zweckmäßigsten wird die Bühnenmusik, wenn sie nicht wie vorgesehen placiert werden kann, an drei verschiedenen Stellen hinter der Bühne aufgestellt: Fernseh- und Mikrophon-Verbindung entsprechend wie bereits vorher erwähnt.

Figure 4.1. *Die Soldaten* frontmatter: *Bühnenmusik* instrumentation

⁷ When conducting my research in Munich, I had the opportunity to discuss some of the *Bühnenmusik* challenges *Die Soldaten* poses, particularly in regard to the 2014 production at the Bayerische Staatsoper, with Richard Whilds, a member of the music staff. His insights into these complex issues and the way they can be handled were very helpful from aesthetic and practical standpoints.

Following the instrumentation list, Zimmermann acknowledges the difficulties of trying to contain the massive orchestra within the pit, and suggests, if necessary, that several of the non-*Bühnenmusik* keyboard and percussion instruments be “transferred to the orchestra’s rehearsal room,” and amplified through loudspeakers within theatre. The coordination in this case should take place under “the responsibility of an assistant conductor,” who is in “television communication with the conductor.”⁸ In the New York City Opera production of 1991, this work fell to Joseph Colaneri of the Metropolitan Opera, who was Christopher Keene’s assistant at the time. The City Opera’s setup was virtually identical to the one Zimmermann described:

The pit contained all the strings, winds, brass and timpani. We put all the percussion, plucked instruments and keyboards in a room one floor below the pit and had everything miked into the theater... We worked extensively with a sound designer to get the right level for every instrument and I conducted from a special podium that had the conductor monitor directly in front of me so there was no chance that coordination would get off in any way.⁹

The level of specificity Zimmermann has in describing other production elements does not extend to the *Bühnenmusik* layout. (“The *Bühnenmusik* is invisible, played from directly between or behind the scenes, [but] sound transmission is required!” is Zimmermann’s only caveat.) This would seem to allow stage directors and conductors some flexibility, but the intricacy and size of

⁸ Zimmermann, *Die Soldaten*, frontmatter.

⁹ Email correspondence with Joseph Colaneri, September 12, 2017.

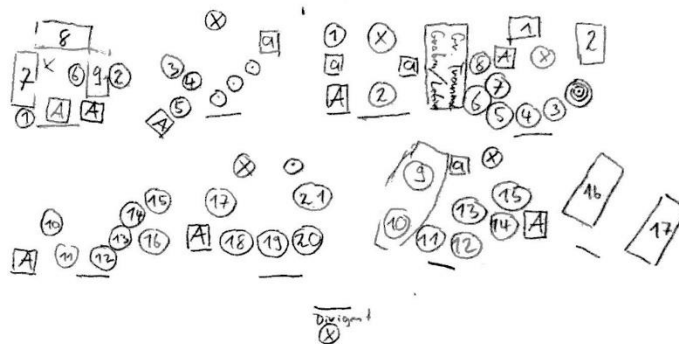
the stage percussion setups make it virtually impossible for these instruments to be performed on the stage, or even in the wings.¹⁰ (It is supremely ironic that instruments *meant* to be played diegetically must literally be sent out of the theatre!) The jazz combo, on the other hand, is compact enough that it can be placed almost anywhere that sightlines allow.¹¹ I have reproduced the *Bühnenmusik* percussion setup diagram from the recent Bayerische Staatsoper production to provide a sense of scale:

¹⁰ Edward Rothstein, “Madness, Lust, and Militarism in *Die Soldaten*,” *New York Times*, October 10, 1991, accessed August 6, 2017, <http://www.nytimes.com/1991/10/10/arts/review-city-opera-madness-lust-and-militarism-in-die-soldaten.html>.

¹¹ This was done to great effect, for example, in the Munich production of 2014, in which the jazz combo members were stylized as the Beatles, and occupied one of several elevated “cells” along the back wall of the stage. The jazz combo also appears onstage in the 2006 Sloane/Pountney production (Bochum), but directly on the stage, as part of the café scene. Bernd Alois Zimmermann, *Die Soldaten*, Bochumer Symphoniker und Chor. Steven Sloane and David Pountney. Recorded 2006, DVD.

- Alles auf Teppich!
- = kleine Ablage
 - A = große Ablage
 - = Stuhl/Bank
 - ⊙ = 3-fach Stuhl/Bank
 - = Pult
 - x = Stuhl
 - ⊗ = Schlägerstuhl

Soldaten Proben beim Schlagzeug



- | | | | |
|-------------------------------------------------------------|--------------------------------------------------|---------------------------------------------|---------------------------------------------|
| 1 = Kleinglocken | 10 = 2 Holztrummeln
30/33 cm | 1 = Lötlingsroll | 1 = Lear D Tam |
| 2 = Große Tommel
auf alten Tamständer hoch | 11 = Röhrt. Pearl Platharmonie
niedr. Ständer | 2 = Gyros | 2 = Lear B + 50 Tam
Überrunden |
| 3 = Beckenablage schwarz | 12 = viele Triangel (5) | > 1/5 = Kongs | 4 = Bongos |
| 4 = 5 Kuhglocken | 13 = Gyros | 6 = Röhrt. Schwarz Gestell | 7 = Snare hoch
Pearl Platharmonie Silber |
| 5 = Crotals G, F, C, E, dis | 14 = Snare Black Swan
Ständer hoch | 7 = Snare hoch
Pearl Platharmonie Silber | 8 = Beckenablage Schwarz |
| 6 = 2 alte Ablagen als Instrument
1 groß 1 klein in blau | 15 = Röhrt. Black Swan
St. hoch | 9 = T 18 auf Colle Podest | 16 = Terra F Platinglocken |
| 7 = PBI 1 Gong | 16 = Fußböcken | 10 = T 16 " " " | 17 = 2 Platinglocken
G/d |
| 8 = PBI 2 " | 17 = 4 Cowbells | 11 = T 15 | |
| 9 = PBI 3 " | 18 = Snare Black Swan hellbraun
St. hoch | 12 = T 13 | |
| | | 13 = Röhrt. Green Hell
niedr. St. | |
| | | 14 = T 8 | |
| | | 15 = Mini Snare hoch | |

Figure 4.2. *Die Soldaten* percussion “*Bühnenmusik*” setup from the 2014 Petrenko production provided by the music staff of the Bayerische Staatsoper, courtesy of Richard Whilds

III. *Tischmusik* in *Armentières*

There are two distinct types of *Bühnenmusik* in *Die Soldaten*. The first is the group of three percussionists, whose instruments are listed above. The second consists of the jazz quartet, and the tabletop-playing soldiers employed in the Act II and Act IV coffeehouse scenes. The latter music (“*Tischmusik*”) requires the most rehearsing, and the Bayerische Staatsoper found it most efficient to hire percussionists to wear costumes and perform this, rather than using chorus

members. According to Whilds, Kirill Petrenko rehearsed these passages meticulously himself. They were also run in full before each performance.^{12 13}

The difficulty of the *Tischmusik* lies mainly its rhythmic execution in a rather brusque tempo. Because it is so well integrated with the rest of the concurrent music, there is no margin for error. Furthermore, there is the issue of ensemble playing, and the question to what extent should these musicians rely on each other, versus watching for cues from a very preoccupied conductor. An accurate performance of this music comes across as an active collage of sound. This is not simply because of the *Tischmusik*'s physical separation from the orchestra pit, but because Zimmermann's rhythmic process often results in empty downbeats, which is the equivalent of simply cutting and pasting sound on a fixed medium. This aesthetic—when rendered through metered, acoustical means in a live performance—is striking, despite the amount of rehearsal necessitated.

¹² Discussion with Richard Whilds in Munich, April 25, 2017.

¹³ February 2015 discussion with Joseph Colaneri, who rehearsed the *Tischmusik* for the New York City Opera production in 1991.

1. Szene (Toccatà II)

In Armentières: Das Kaffeehaus

Eisenhardt, Pirzel, Obrist, der junge Graf, Stolzius, drei junge Offiziere, Mary, Haudy, drei Hauptleute, der betrunkene Offizier, Madame Roux, Andalusierin, drei junge Fähnriche

Empore links, im Hintergrund und rechts. Zwei Treppen führen links und rechts zu der Empore im Hintergrund.
 Unter dieser Empore das Büffet, zwei Türen, je eine weitere links und rechts.

Sprechstimmen und Schlaggeschirr

Tisch Ia	Auf der rechten Empore	Drei Fähnriche, Kaffee trinkend Kaffeetasse gefüllt · Kaffeetasse leer (mit Kaffeelöffel geschlagen)
Tisch IIa	Unter der mittleren Empore, links vom Büffet	Drei Offiziere, Tee trinkend Glas gefüllt · Glas leer (mit Teelöffel geschlagen)
Tisch IIIa	Unter der mittleren Empore, rechts vom Büffet	Drei Offiziere, Kaffee trinkend Kaffeekanne, Griff · Kaffeekanne, Rand (mit Kaffeelöffel geschlagen)
Tisch Ib	Auf der mittleren Empore, links	Drei Offiziere, rauchend und sich langweilend Stuhl, Lehne · Stuhl, Sitz (mit der flachen Hand geschlagen)
Tisch IIb	Auf der mittleren Empore, rechts	Drei Offiziere, Skat spielend Tischplatte (ohne Tischdecke), Gläser und Tassen Schlag mit Fingerknöcheln · Schlag mit flacher Hand Schlag mit Faust
Tisch IIIb	Auf der linken Empore	Drei Offiziere, Zeitung lesend Serviertablett (Metall), voll · Serviertablett, leer (mit Tischmesser geschlagen)
Tisch c	Unter der rechten Empore	Obrist, Mary, der junge Graf
Tisch d	In der Mitte, ganz vorn	Pirzel, Eisenhardt
Tisch e	Unter der linken Empore	Drei Hauptleute (Sprechstimmen)
Tisch f	Vor dem Büffet	Drei junge Offiziere
Tisch g	Auf der mittleren Empore, Mitte	Der junge Fähnrich (Sprechstimme), Drei junge Fähnriche (Tänzer)

Notierung der Sprechstimmen



Mit Ausnahme der drei Skat spielenden Offiziere ist, bis zum Eintritt von Stolzius, alles in einer ständig fast choreographischen Bewegung. Die oben vorgeschlagene lokale Disposition der Tische sollte möglichst eingehalten werden. Der Tisch d wird bei dem Tanz der drei Fähnriche beiseite gestellt.

Figure 4.3. *Die Soldaten* Act II Scene 1 *Tischmusik* key

Figure 4.4. *Die Soldaten* Act II Scene 1 *Tischmusik* example, Rehearsal E

IV. Tape Music in the Final Scene

Coordinating live music with prerecorded audio requires a different sort of leadership from the conductor.¹⁴ In the final scene, which follows Stolzius's death, Zimmermann writes a *Pater Noster*, delivered by Padre Eisenhardt over the loudspeaker. Conjoined with this is minimally processed tape music containing a polyphony of merging and diverging moans. (These voices are realized in the score on three stereo speaker groups, which are labeled "Death," "Birth," and "Love.") Later these voices become stark military commands in different languages, and finally, the sounds of bombs, rockets, and tanks. As Zimmermann thins the texture a final time, he leaves the audience with a D-natural, reminiscent, according to Alex

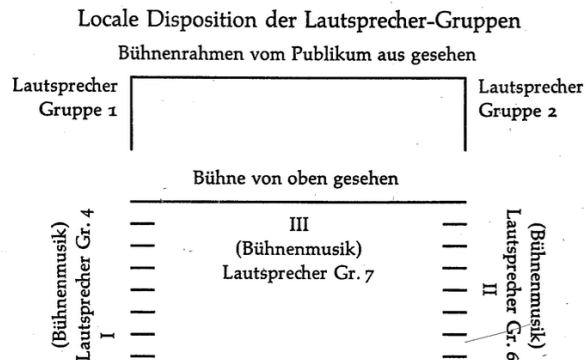
¹⁴ Walder-Biesanz review.

Ross, of Mozart's "loud, bone-chilling chord of D minor in the first bars of *Don Giovanni*."¹⁵ It also may recall Berg's B-natural *idée fixe* following Marie's murder in Act III of *Wozzeck*, as Zimmermann also modulates the timbre and dynamic envelope of this sustained pitch over a long period (albeit with some electronic aid). To achieve these effects, Zimmermann includes a speaker diagram in the score preceding the final scene:

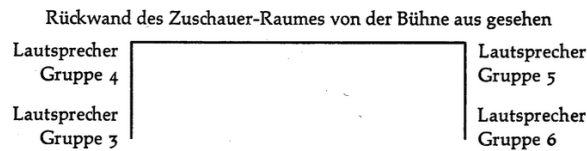
¹⁵ Alex Ross, "Infernal Opera," *The New Yorker*, June 18, 2017, accessed October 13, 2017, <https://www.newyorker.com/magazine/2008/07/21/infernal-opera>.

3. Szene (Nocturno III)

Am Ufer der Lys



Die Bühnenmusik-Gruppen sind mit Mikrofonen ausgestattet, welche auf die Lautsprecher Gruppe 4, 6 und 7 (s. o.) übertragen. (Siehe Bemerkung über Bühnenmusik des weiteren I, 5 u. f.)



- Lautsprecher Gruppe 7 befindet sich an der Decke (Mitte).
- Lautsprecher Gruppe 8 befindet sich zwischen Decke und Publikum, jedoch so hoch, daß auch ggf. die Logen beschallt werden können (möglichst Lautsprecher-Ampel).
- Lautsprecher Gruppe 9 befindet sich in der Mitte der linken Seitenwand (von der Bühne aus gesehen); in halber Höhe.
- Lautsprecher Gruppe 10 befindet sich in der Mitte der rechten Seitenwand (von der Bühne aus gesehen); in halber Höhe.

Die Einspielbänder mit konkreter Musik werden von folgenden Lautsprecher-Gruppen übertragen:

- Einspielband I = Lautsprecher Gruppe 9
- Einspielband II = Lautsprecher Gruppe 10
- Einspielband III = Lautsprecher Gruppe 3
- Einspielband IV = Lautsprecher Gruppe 5
- Einspielband V = Lautsprecher Gruppe 8

Die Lautsprecher müssen mit zahlreichen Verstärkersätzen ausgestattet sein, damit eine maximale Lautstärke bei maximaler Qualität der Tonwiedergabe (ohne Übersteuerung) gewährleistet ist.

Figure 4.5. *Die Soldaten* Act IV Scene 3 loudspeaker diagram, 456

The orchestra and *Bühnenmusik* percussionists also play, and Marie and Wesener sing at various points. At the end of the piece, field drums beat out a relentless figure, and three overlapping tapes join in, creating a slowly-building primordial scream, per Zimmermann's footnote

describing the final aesthetic as that of an atomic bomb detonation.¹⁶ The coordination problems in this scene are apparent, and the conductor almost needs to view it as a separate drama. Because there are so many variables, the conductor is best suited to adhering to the one that is least mutable. In this case, that element is the prerecorded tape. For the 2014 Munich production, the Bayerische Staatsoper re-rendered the tape music for the entire scene, choosing to sample new sources and process them with modern technology.¹⁷ Doing this digitally not only allowed the technical staff to have more spatialization choices, but gave the music staff an opportunity to easily overcome the most difficult of the synchronization issues: by creating measures whose meters and tempos matched those in Zimmermann's score, they, with Petrenko's approval, were able to generate a conductor click track for the scene.¹⁸ ¹⁹The amount of rehearsal time and stress this circumvented was enormous, and Petrenko was able to focus on musical matters rather than keeping up with a rather ambient and potentially inaudible tape. It is ironic, though, that an opera so damning of the sort of mechanical relentlessness and dehumanization that led to the Second World War, would need to employ a click track, the most mechanical of musical devices, for the sake of cohesion.²⁰

¹⁶ Zimmermann, Bernd Alois, *Die Soldaten* Act IV Scene III, 466.

¹⁷ An entirely new rendering is not always pursued; the Metzmacher production in Salzburg featured Eisenhardt reciting the *Pater Noster* dry from the stage. Bernd Alois Zimmermann, *Die Soldaten*, Wiener Staatsoper, Salzburg Festival, Ingo Metzmacher. Recorded 2013, DVD.

¹⁸ Email correspondence with Richard Whilds (April 2017).

¹⁹ In the 2006 production in Bochum, conductor Steven Sloane appears to be adhering to a visual (rather than aural) clicktrack, which can be seen pulsing on a display behind his podium.

²⁰ The complexity of the *Bühnenmusik* in *Die Soldaten* makes one wonder what sorts of other diegetic sources could be used in the future. To me, this is an issue of syntax; diegetic music within opera loses its valuable relationship with the orchestra pit the more fixed it becomes.

Vibraf.
 Kl.Tr.
 3 R.tr.
 Lautspr.-Gruppen:
 Panzer-Kanon
 Raketen
 Bomben
 Eisenh.
 Stimme

con tutta forza
3 Rührtr. uniritmico
f in ritmo ferreo, sempre lo stesso tempo
con tutta forza
Loco

sed li-be-ra nos a ma - lo!

Vcl. 1. & 2.
 Kb. 1. & 2.

Die Rührtrommeln spielen ununterbrochen bis zum dynam. Höhepunkt aller Lautspr. Gruppen und reißen, wie diese, ab. (64^{te} nach Start von Einspielband III, startet Einspielband IV, 58^{te} nach letzterem Start folgt Einspiel. Bd. V, 30^{te} später (auf dem dynamisch. Höhepunkt aller Lautspr. Gruppen) plötzliche Stille, welche 7^{te} dauert: nunmehr totale Finsternis. Nach der eben totalen Stille von 7^{te} erklingt von allen Bläsern und Streichern attacca)
 (Während Marie wie vernichtet am Boden liegt, geht Mesener unendlich langsam, im ununterbrochenen Zuge der Gefallenen, dem Hintergrund zu, der sich allmählich, wie ebenfalls die Bühne auch, bis zur völligen Finsternis verdunkelt)
 (Keine Oktavierungen!!! Kein Schlagzeug!!!)
 con tutta forza - dann kontinuierliches dim. mit gleichzeitigem Abbau^o der Instr. Kb. tba. - 4. Pos. - 3. Pos. - 2. Pos. - 1. Pos. etc. auf Zeichen (jeweils von den tiefen Instr. zu den nächsthöheren via Blech, Holz bis zu den Streichern gehend) bis zur Stille.
 Während des dim. wird auf der Bühne die langsam sich herabsenkende Atomwolke sichtbar. Gleichzeitig mit dem diminuendo wird ein über alle Lautspr. Gr. umlaufender „Schrei-Klang“ von der größten Lautstärke bis zum völligen Erlöschen abgebaut. Bei Erreichung der völligen Stille schließt sich der Vorhang.
 *) Es darf keinesfalls der „Atomplitz“ gezeigt werden: lediglich die Wolke des Atomplitzes.

Fine

Figure 4.6. Die Soldaten Act IV Scene 3 final measures and instructions

CHAPTER FIVE

TECHNIQUES AND TECHNOLOGY

Bühnenmusik has evolved significantly throughout musical history, and its relationship with concurrent orchestral music in opera has become much more complex in formal, dramatic, and practical measures. This has been discussed in the preceding case-studies, and in each I have alluded to common remedies for the situations presented. I have also suggested that the increasingly complex relationship between *Bühnenmusik* and orchestra pit music has enabled composers to view spatialization as a generative parameter, rather than as an incidental property of performance, or simply an “effect.” The following chapter contains an overview of general conducting techniques unique to working with *Bühnenmusik*, and a discussion of the historical and present technological methods for overcoming coordination difficulties.

There is virtually no discussion of the intricacies of handling stage music in the standard conducting texts, regardless of whether their bent is technical or aesthetic.¹ The most helpful and extensive such writing comes from Gustav Meier, whose book *The Score, the Orchestra, and the Conductor* contains a paragraph on the matter of conducting ensembles physically separated from the main orchestra:

When conducting offstage instrumentalists and/or singers, a backstage conductor watches and follows the main conductor on a monitor and pushes tempos ahead so to accommodate time delays created by the distance between the orchestra and

¹ Mark Gibson suggests that a future conducting textbook ought to include “a chapter on conducting a tricky offstage *banda*.” Mark Gibson, *The Beat Stops Here: Lessons On and Off the Podium for Today’s Conductor* (London: Oxford University Press, 2017), 48.

the offstage musicians. The backstage conductor leads when the orchestra is accompanying or when the passages performed backstage are technically demanding and musically dominating... Some passages with a steady rhythm can be conducted directly by the main conductor. Earphones and small loudspeakers that transmit the music from the main stage or pit to the backstage musicians are additional tools for improving collaboration.²

This succinctly touches on the issues discussed in this chapter, namely:

1) Coordination difficulties, the most common of which is latency, are inevitably caused by spatial properties;

2) Technology is employed as an attempt to bridge this physical divide;

3) The *Bühnenmusik* conductor's main role is to overcome the acoustic challenges of distance by continually reacting to the primary conductor and the response of the pit orchestra;

4) At times it is in the performance's best interest for the primary conductor to "accompany" the *Bühnenmusik* rather than to try to micromanage it from within the pit.

In discussing these issues, I will at times draw upon my research at the Wiener Staatsoper and the Bayerische Staatsoper.

I. Acoustics within the Orchestra Pit

While it is not the goal of this dissertation to probe deeply into the acoustics and historical development of opera venues, it is important to understand that the evolution of

² Gustav Meier, *The Score, the Orchestra, and the Conductor* (Oxford: Oxford University Press, 2009), 336.

performance spaces is intrinsically related to the development of western music. With the notable exception of the *Festspielhaus* in Bayreuth, designed by Wagner to serve as a laboratory for his philosophical and creative work, opera orchestra pits across the world are virtually identical in this fundamental sense: sounds are produced within a sunken polyhedron (usually in the shape of a crescent or rectangular prism), reflected to various degrees by the space's surfaces, and released out the open top, which is flush with the stage. Many pits can be raised and lowered, and some may be extended laterally if there are passages into the substage. Adjusting the physical volume of the pit changes the timbral and dynamic properties of the ensemble within. This is most often done to alter the balance within the orchestra, as well as adjust the balance between the pit orchestra and the singers onstage.³

The “rail”—the partition between the audience and the orchestra pit—is usually made of metal and draped with some sort of heavy fabric or backed by a low wall. Fabric absorbs not only some of the fundamental frequencies played within the orchestra, but also acts as a low pass filter, which attenuates high frequencies. The high frequencies affected tend to be overtones, so fabric has a muting effect. Other, more reflective materials have less of an impact on this, but a fabric lining on either the rail and/or back and sides of the pit is often chosen to prevent the phenomena of standing waves and audible phasing.⁴ The walls and rail have another effect, however. Whereas a traditional orchestral concert on a stage allows for instruments to project from separate spaces, the confines of the pit homogenize the sound sources to such an extent that

³ Sometimes orchestra pit levels are adjusted simply based on a particular conductor's height and visual needs. In Munich, for example, Wolfgang Sawallisch, Music Director of the Bayerische Staatsoper from 1971-1992, decreed that the pit be fixed in perpetuity at the level he preferred to use (Richard Whilds conversation).

⁴ “Standing waves” are the result of the collision of two waves moving in opposite directions. This causes undesirable interference, and either amplifies the sound (if the waves are in phase) or cancels it (if the waves are inverted). Encyclopædia Britannica, "Standing Wave," Encyclopædia Britannica, October 24, 2016, accessed October 13, 2017, <https://www.britannica.com/science/standing-wave-physics>.

what the audience hears of the orchestra is essentially monophonic. For this reason, *Bühnenmusik*, in contrast, serves as a stark aural reminder that sound sources exist, moving or fixed, in three dimensions.

II. Distance-based Latency

The distance between the orchestra pit and a *Bühnenmusik* source depends on the dramatic nature of the stage music, the physical size and architecture of the theatre, and, typically, a director's concept. Sound travels at approximately 340 meters per second (at sea level, at room temperature, and in an environment with low humidity).⁵ To get a sense of the delay as it relates to musical performance, the following illustration assumes a one-way distance of 10 meters (such as could be the case between a conductor and the horn section in a medium-sized symphony orchestra).

Time for Sound to Travel 10 meters: ca. 0.029 seconds

Note value length of delay if Quarter Note is at 60 beats-per-minute: ca. 128th note

Note value length of delay if Quarter Note is at 120 beats-per-minute: ca. 64th note

If one now imagines a large opera stage, such as that of the Metropolitan Opera in New York,⁶ with an approximate distance of 30 meters from the podium to the back of the stage, the following numbers are produced:

⁵ "Calculation of the Speed of Sound in Air and the Effective Temperature," interactive online resource, accessed August 10, 2017, <http://www.sengpielaudio.com/calculator-speedsound.htm>.

⁶ Graham Roberts, "Inside the Metropolitan's Stage," *New York Times Magazine*, March 21, 2013, accessed July 25, 2017, <http://www.nytimes.com/interactive/2013/03/21/magazine/metropolitan-opera-stage.html>.

Time for Sound to Travel 30 meters: ca. 0.088 seconds

Note value length of delay if Quarter Note is at 60 beats-per-minute: ca. dotted 64th note

Note value length of delay if Quarter Note is at 120 beats-per-minute: ca. dotted 32nd note

This latter set of values clearly poses some challenges if a conductor is coordinating the pit with a *Bühnenmusik* source at this distance (whether the group is onstage or offstage). The faster the tempo of a passage that needs to be synchronized, the longer the latency is in relation to the pulse; thus, while it may be relatively easy in chorale-type music to ask for the stage musicians to anticipate the orchestra slightly, a rhythmically involved passage is far riskier. (Examples of this from the case-studies are the *Tristan* shepherd's pipe solo and the offstage percussion groups in *Die Soldaten*.) Furthermore, if the stage musicians do not have any sightlines, and are listening to the pit orchestra for their cues, the latency values double—the orchestra's sound must reach the *Bühnenmusik* performers, and then the latter group's sound returns to the orchestra and conductor. If a conductor were to slow their beat to match a delay in the *Bühnenmusik*, this would cause a negative feedback loop, slowing the tempo down progressively as both sets of musicians adjust to each other. It is clear that, regardless of the mechanism(s) used to address latency, this delay must be minimized.

III. Technology

A. Origins and Early Attempts

Hector Berlioz recognized the problem of latency in his treatise, *The Conductor: The*

Theory of His Art, in which he rather colorfully discusses the issues an orchestra conductor faces in reducing opera chorus and *Bühnenmusik* delays.

There is another traditional barbarism which it is the business of the intelligent and energetic conductor to destroy. If a chorus or an instrumental piece has to be executed behind the scenes without the participation of the principal orchestra, another conductor is absolutely necessary to conduct it. If the orchestra accompanies this group, the first conductor, who hears the music from afar, is bound to *leave it to be conducted by the second*, and to follow the movements *by ear*. But if, as is often the case in modern music, the sonority of the chief orchestra prevents the chief conductor from hearing what is going on at a distance, the introduction of a special mechanical conductor of the rhythm become indispensable, in order to establish an instantaneous communication between him and the distant performers.⁷

Berlioz recognizes the issue, but while he describes what the orchestra pit conductor must contend with, he does address the offstage conductor's visual or aural contact with the pit conductor. This omission is unexpected, given the emphatic—at times dogmatic—tone of his treatise. The “mechanical device” to which Berlioz refers is an “electric metronome,” which was essentially a telegraph system from the orchestra pit to the backstage area. A brass button resembling a piano key was attached to the conductor's stand, which triggered an electrical reaction in a container of mercury, sending electricity through a copper wire to a “baton”

⁷ Berlioz, *The Art of the Conductor*, 42-43.

backstage, which moves up and falls when the key is pressed.⁸ He suggested nothing about an offstage conductor, however, and instead, “the executants grouped behind the scenes, with their eyes fixed on the electric metronome, are directly under the control of the chief.”⁹ (Berlioz alludes to this later when he refers to “those dangerous auxiliaries who are called directors of choirs.”)¹⁰ This ingenuity solved sightline issues, but because the “baton” only jerked when it received the signal, it would have been difficult for offstage performers to anticipate the conductor’s tempo based on the conductor’s physical motion through the beats. The latency from the offstage group would also remain, so the orchestra pit conductor would have had their own coordination challenge of pressing their key slightly in advance of giving the pit orchestra’s beat with their right hand. (Perhaps this necessary rhythmic independence of hands is why such a conductor would have needed to be “intelligent and energetic!”) Nevertheless, by his own account, Berlioz’s method was effective for him.

B. Audio Amplification of Diegetic Sources

Audio amplification attempts to solve balance problems based on the volumes attenuation *Bühnenmusik* faces due to the distance it travels through the air—so it eliminates latency going *both* directions. Amplification is most commonly used to support offstage ensembles, which allows such an ensemble to be housed either far enough backstage to avoid congestion at the wings, or in a separate facility altogether. The levels and equalization are controlled by a

⁸ Berlioz, 43-44.

⁹ Berlioz, 44.

¹⁰ Berlioz, 46.

*Tonmeister*¹¹ in the control booth, and the processed signal is typically sent to speakers within the opera house. In some cases it makes sense for the orchestra pit conductor to have an audio monitor, too. The advantage of amplification is that the latency of the *Bühnenmusik* is significantly reduced. In the days of analogue microphones and mixers, there was virtually no amplification delay, since sound signals move through wires almost instantaneously.

If a digital intermediary, such as a computer or digital mixer is used, there is an inevitable latency as a computer or mixer processes sends the audio. The amount of latency is subject to the speed of the computer—the higher the latency, the less likely one is to run into artifacts¹² in the sound. Fast processors and minimal additional digital processing (i.e. without added reverberation, shelves, gates, et cetera) allow for near instantaneous amplification. Typical processing latency is in the low hundreds of milliseconds, but these numbers continue to drop with the development of faster processors.¹³

When using audio amplification, the orchestra pit is also amplified and sent to the *Bühnenmusik* conductor offstage, who is able, through either a headset or an audio monitor, to hear the orchestra and the *Bühnenmusik* simultaneously. This is crucial for passages in which an offstage group must match the orchestra pit tempos closely, either for reasons of rhythmic precision within the passages or in the case of sections with frequent *rubati*. One drawback to amplification, however, is that, unless a director or conductor specifies that the *Bühnenmusik*

¹¹ A *Tonmeister* (literally a “sound master”) is a musically-trained audio engineer. The term is used to describe both live sound mixers and electroacoustic sound programmers. Notable examples of this are the composer apprenticeship programs at Darmstadt and IRCAM in which luminaries such as Kaija Saariaho received their early electroacoustic training.

¹² “Artifacts” are audible distortions due to a variety of reasons, the most common being “clipping,” in which the signal amplitude exceeds amplifier’s electrical capacity and makes the sound overdriven.

¹³ This information was accrued over the course of my own apprenticeship at the Eastman Computer Music Center.

should be panned to only one side of the stage, the sound can be homogenized and lose its spatial separation. This makes the case for very deliberate panning choices, or even for nonamplified offstage music. Panning, however, particularly with a multichannel speaker system, such as Zimmermann requested in *Die Soldaten*, allows offstage music, like tape music, to be sent “anywhere” in the auditorium, and even to “move.”

C. Video Monitors

Closed circuit television (CCTV) systems, so named because signals are transmitted through wires to hubs and receivers—and not broadcast through the air—have become a mainstay of opera houses and theatres. The technology was allegedly invented in Nazi Germany to remotely monitor V-2 rocket launches during the Second World War.¹⁴ In the United States, CCTV systems were first manufactured in 1949 by an obscure company, Vericon, which boasted a product that “operates entirely on wires and requires no government permit.” Early American uses of this technology were both educational (bringing “demonstrations and surgical operations to large groups of students”), and domestic (for home security).¹⁵

¹⁴ Walter Doemberger, *V-2* (New York: Ballantine Books, 1954), 14.

¹⁵ *Popular Science*, February 1949, 179.

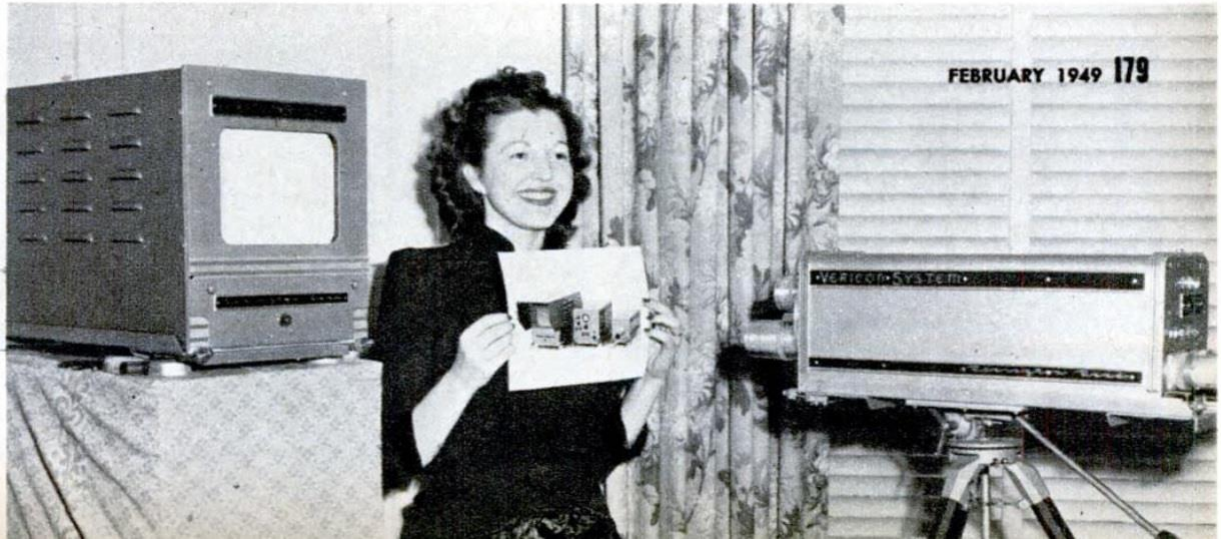


Figure 5.1. Advertisement for Vericon, the first CCTV system sold in the United States¹⁶

Widespread adoption of CCTV technology in opera houses have allowed conductors and directors to coordinate *Bühnenmusik* very efficiently. By mounting a video camera somewhere within the pit, or from under the lip of the stage, and transmitting that signal through coaxial cable¹⁷ to one or multiple monitors, it becomes possible to place an amplified offstage group anywhere in the opera house's facilities. Historically, *Bühnenmusik* conductors, in order to follow the orchestra pit conductor, required sightlines, sometimes while disguised behind set pieces, which inevitably restricted a stage director's vision in terms of where sets and singers could be placed.

High definition systems (which I will refer to generically as "HDTV") have become popular in recent years due to their superior picture quality. This has posed problems for *Bühnenmusik* coordination, though, because these digital signals must be processed.

¹⁶ Ibid.

¹⁷ Coaxial cables are used for analogue transmission of video because their robust construction minimizes signal loss over the course of a long wire.

Furthermore, the comparatively low voltage used in HDMI cables requires signal boosters at regular intervals to ensure signal loss does not occur. Wired HDTV transmission occurs, unlike analogue transmission, with a sort of “handoff”—the receiver must acknowledge the sender’s incoming data. This creates significant latencies. Because of this, the recent implementation of HDTV systems for backstage monitors is frustrating to conductors and stage directors.¹⁸ The argument for HDTV, from well-meaning technical supervisors, is that the picture is superior. Flatscreen monitors are also easy to hide onstage. Yet the latency drawback really makes it an inferior technology for live wired transmission. A black and white CCTV signal with high contrast is vastly preferable to musicians.

CCTV

camera → coaxial cable → signal booster (optional) → receiver

HDTV

camera → onboard encoder → HDMI cable → signal booster with processor → HDMI cable → onboard translator → receiver; then, receiver → onboard encoder → HDMI cable → signal booster with processor → HDMI cable → onboard translator → camera

Figure 5.2. Comparison of CCTV monitor versus HDTV monitor routing (simplified)

In the 2006 production of *Die Soldaten* in Bochum, the immersive staging concept required the use of many video monitors. These were clearly HDTV devices, many of which

¹⁸ Correspondence in person with Witolf Werner (April 28, 2017), and via email with Peter Kazaras (August 2, 2017).

were visible in the DVD. The following frame captures illustrate the digital latency conductor Steven Sloane experienced between his physical gesture, and two monitors with different latencies:





Figure 5.3. Frame capture from the final scene of *Die Soldaten*, revealing the discrepancy between the conductor's actual movements in real-time, and two HDTV monitor outputs, which are behind at different rates¹⁹

Note that Sloane's baton hand is only slightly lower than his left in "real-time," as he has reached the bottom of the beat and is rebounding. The first HDTV monitor, however, displays his baton hand *significantly* lower than his left, as it is still traveling downward toward the beat-plane. The second places them closer together, but not in synchronization with the real-time capture.

¹⁹ Zimmermann, *Die Soldaten*, Sloane.

D. The *Bühnenmusik* System at the Wiener Staatsoper²⁰

At the Wiener Staatsoper, I was fortunate to shadow conductor Witolf Werner, the resident *Bühnenmusik* Conductor, during several performances in which stage music had a critical role. The Staatsoper is likely the largest company, and one of the only ones, that employs a fulltime *Bühnenmusik* orchestra.^{21 22} My account of the procedures involved in facilitating *Bühnenmusik* at the Staatsoper is based on firsthand backstage observations, as well as interactions with some of the musicians of the Vienna Philharmonic.

Because of the orchestra's rotating personnel, almost all *Bühnenmusik* is rehearsed approximately an hour before its occurrence in each performance.²³ In this rehearsal, the *Bühnenmusik* conductor, who is a member of the music staff assigned to this role on a seasonal basis, having reviewed audio recordings of the previous performance (sometimes in consultation with the primary conductor) not only focuses on interpretive issues in the passages as needed, but is able to characterize and remedy any synchronization issues in advance of that night's performance.²⁴ The Staatsoper's *Bühnenmusik* scores and instrumental parts are marked in a unique way. Both contain, before each entrance, a penciled-in number, which signifies the

²⁰ "Wiener Staatsoper" technically refers to the opera house itself, but is regularly used to refer to the opera branch of the Vienna Philharmonic.

²¹ Conversation with Thomas Lausmann, Head of Music at the Staatsoper. Some orchestra members electively specialize in *Bühnenmusik* (such as violinist Gregory Rogers, who moved to Vienna in 1982, and discussed some of the challenges and rewards such players find).

²² The *Bühnenmusik* orchestra roster is prominently featured on the personnel page, which is another rarity for opera companies. The rosters, adjusted as appropriate, are accessible online. <https://www.wiener-staatsoper.at/ensemble-gaeste/orchester>.

²³ The Philharmonic is structured as a consortium of performers, rather than a single fixed ensemble; salaried members rotate between the Staatsoper, Musikverein, and the touring Philharmonic.

²⁴ This was often humorous—one of the messages passed along to the Shostakovich *Lady Macbeth of the Mtsensk District* was an amicable reproach from the principal conductor, who noted that the stage brass ensemble had played slightly behind in the previous performance.

number of countoff beats the offstage conductor provides before their passage begins. These numbers are checked for accuracy at this short rehearsal too. Musicians are reminded of the approximate backstage location to which they will report, and are called to be in place approximately fifteen minutes before they are to play.

The Staatsoper employs approximately 1000 people, many of whom are stagehands and technical personnel. The backstage area of the opera house is enormous (approximately four times the area of the mainstage!), and is reminiscent of a busy, but efficiently handled, city intersection. Technical personnel are responsible for setting up microphones for *Bühnenmusik* amplification; these are wired as separate channels via snake to the control booth. In my experience, two to four wide-diaphragm condenser microphones were used, which was dependent on the disposition of the ensemble. Just prior to the entrance, the *Tonmeister* raises the levels on these microphones, and, while these volumes and equalization settings have been marked in rehearsal, the *Tonmeister* must still pay close attention to them during the passage to maintain the correct balance and ensure that clipping does not occur.

To me, the single most intriguing piece of technology at the Staatsoper is a wheeled cart that somewhat resembles a hospital vital signs monitor. An HDTV screen is mounted at the top, and resting on the shelf below, are two headsets. One headset is wireless, should the conductor need to move somewhere else quickly, such as a narrow space behind a flat (as happened in *Un ballo in maschera*). The cart is plugged into an HDMI hub backstage for the video, and the audio source comes from microphones mounted in the orchestra pit. Through this setup, the *Bühnenmusik* conductor can watch the orchestra pit conductor (with a slight latency, unfortunately), and hear the orchestra (with essentially no latency). I was fortunate to be given one of the headsets and could watch Werner, the video monitor, and hear both the orchestra pit

and the musicians next to me. This provided an exceptional opportunity to see these musical and technical issues as they occurred in real time.

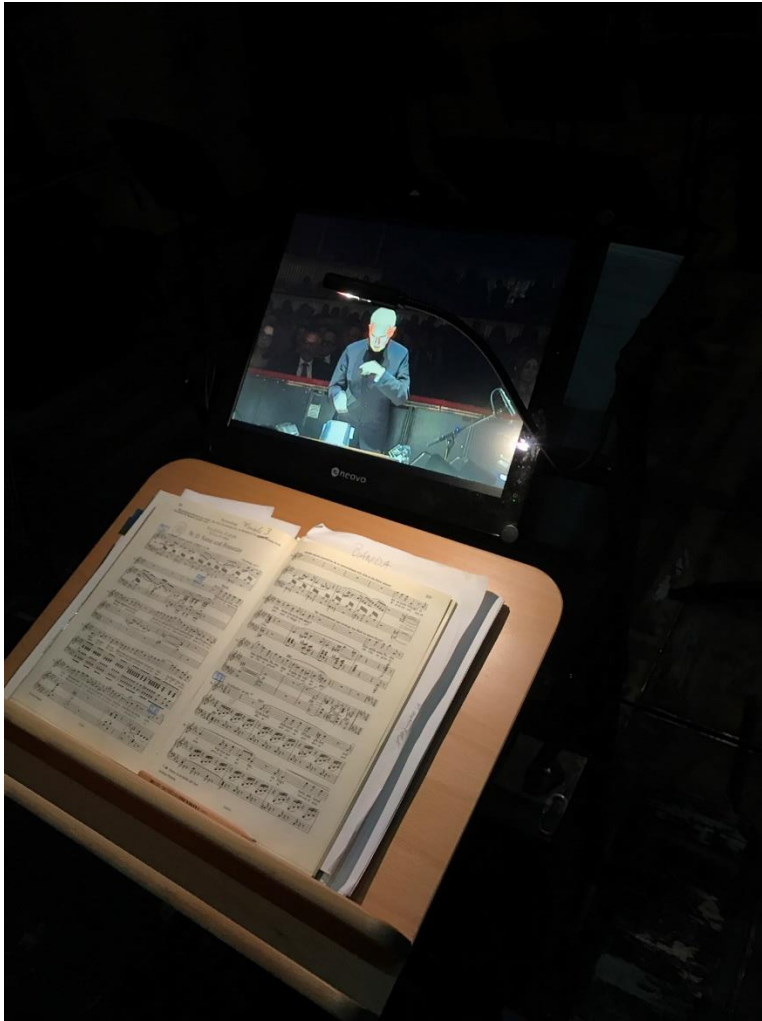


Figure 5.4. *B\u00fchnenmusik* cart at the Wiener Staatsoper, April 23, 2017; headsets are stored below the monitor

Musicians are called to the offstage area approximately fifteen minutes in advance of their playing. The *B\u00fchnenmusik* cart and microphones are already set. The conductor is in position with their score, following the orchestra music well in advance. Because the backstage

lighting is low when the main curtain is up, the conductor uses a small flashlight as a baton.²⁵ Clicking on the “baton” signals the offstage musicians to be quiet and attentive. The conductor then marks along with the pit orchestra with the right hand. At the appropriate time, the left hand fingers show a count-up to the number of countoff beats penciled into the parts. The conductor is very attentive to the orchestra at its initial entrance, but quickly returns their focus to the monitor to ensure synchronization. Because the pit orchestra of the Wiener Staatsoper plays with a delay (the extent of which depends on the type of music and an individual conductor’s gestures), and the offstage music is amplified in real time, some of the HDTV latency is solved if the *Bühnenmusik* musicians play strictly with the offstage conductor’s beat, should it match precisely with what appears on the screen. It is still more typical, however, for the offstage conductor to beat slightly ahead of what they see on the screen; this makes sense given that the musicians are still generally used to playing together with a delay.

²⁵ Lausmann related to me that the flashlights the Staatsoper uses were an accidental discovery he made while in Japan, and can only be purchased there. Much more reliable and lighter than the ones they used before, they nonetheless are white, which is too bright for the musicians’ comfort. Lausmann thus found it advantageous to color the light with a layer of purple nail polish!



Figure 5.5. *Bühnenmusik* area being set up for the brass band in *Lady Macbeth of the Mtsensk District*, April 29, 2017.

E. Click Tracks and Future Technologies

When it becomes necessary to synchronize a passage with many interdependent elements (such as the final scene of *Die Soldaten*, when the orchestra pit, singers, *Bühnenmusik* ensembles, auxiliary percussion, multiple video projections, and tape music converge), a click track is often the most practical option for all parties. The principle harkens back to Berlioz's "electric metronome," as a synchronization pulse is provided to all participants who use a headset or earpiece. Click tracks were developed in 1930s Hollywood for early film composers to synchronize their music to picture. By punching holes in the film at regular intervals, these provided visual flashes or, later, audible pops, when the film was projected during music recording.²⁶ (A quarter note pulse of 60 beats-per-minute would be achieved by punching a hole every 24 frames, a 90 beats-per-minute pulse every 16 frames, et cetera.) Modern digital audio workstations (DAWs) generate click tracks automatically, and it is easy to route these to a separate channel for distribution to headsets.

To date, Edwin Roxburgh is the only author of conducting textbooks to address tape music synchronization with a live orchestra via click track. Throughout his section on electroacoustic integration, Roxburgh identifies the difficulty of managing these elements, even when a click track is used, because the conductor is "not in the right position to listen to the combined effect of the electro-acoustic element through the speakers around the auditorium and the live instruments which might also be amplified."²⁷ A simple solution is to allow an assistant conductor to lead at some point in rehearsal, and to listen from the hall.

²⁶ As mentioned earlier, visual clicktracks are still in use for some applications. An example of this is Sloane's final scene of *Die Soldaten*, in which the flashing device is visible just below his podium.

²⁷ Edwin Roxburgh, *Conducting for a New Era* (Suffolk: Boydell Press, 2014), 134.

The development of very low-latency, high fidelity video systems is an important technological goal. Beyond this is the question of whether dedicated *Bühnenmusik* cueing and management systems could be developed. This is less a question of technological advancement but of practical merit. Such a system might function in a way analogous to Berlioz's, and employ a digital tempo tap pad used by someone in the orchestra pit to convey the conductor's beats. Provided several beats are given in advance and the passage of the music leading up to the *Bühnenmusik* entrance is somewhat steady, an algorithm could be easily developed to anticipate the next beat and avoid distance-based latency. This system might be appealing for small opera houses lacking a fulltime *Bühnenmusik* conductor, but the human element is missing; musicians tend to play better with a compelling conductor than to what essentially amounts to a metronome.

IV. Postlude

There is another human element that deserves mention in the coordination of *Bühnenmusik*: the role of the stage music performer him- or herself. Violinist Gregory Rogers, whom I observed in rehearsal and later met for the first time backstage at the Wiener Staatsoper production of *Un ballo in maschera*, offered invaluable perspectives on the experience of musicians who specialize in *Bühnenmusik*. Rogers came to Vienna from New Zealand in 1982, and established himself swiftly as one of the foremost practitioners of diegetic music performance—not only at the Staatsoper, but at several other Viennese companies, including the Volksoper. His experiences are worthy of their own ethnographic study, and many of them are relevant to the material discussed in this dissertation. I am including several of his points. Over the course of a conversation we had in the Staatsoper's backstage Kantine, Rogers spoke not

only of the challenges of playing *Bühnenmusik*, but also of the deep musical and personal rewards he has found in it. While I have discussed many of the coordination challenges in this dissertation, I have not passed many value judgments about the worth of the experience itself.

Among the challenges Rogers recalled were those I addressed in my analytical work: spatial separation and aural latency, as well as visibility issues. Some of these came in the form of specific recollections—such as performing the *banda* in the ballroom scene of *Don Giovanni* from a moving boat in one production, and another (a Karajan production) in which both of the onstage orchestras faced each other from opposing balconies. He also spoke of incidental technological challenges, such as a bass player’s upbows inadvertently blocking the CCTV camera in the orchestra pit. A third issue, however, encapsulates something I’ve discussed briefly in several chapters: the relationship between stage instrumentalists, the *Bühnenmusik* conductor, and the orchestral conductor. Because there are points in which a stage music ensemble leads, rather than follows, sometimes listening to both one’s own ensemble or other simultaneous ones can cause problems. The paradoxical skill of “*not* listening” is indeed a final challenge *Bühnenmusik* performance often presents—whether the musicians are on the stage without the support of a dedicated conductor, or whether they are backstage following one. While it falls into both conductors’ duties to know when to defer to the other, it is virtually impossible for musicians in one ensemble *not* to hear those in the other. In this sense, it may not be too much of a leap to suggest that *all* the instrumentalists must function similarly to a conductor, in that they reconcile what they are hearing with the necessity of retaining independence and tempo consistency within their own ensemble.

If one views opera accompaniment as the most sophisticated kind of chamber music-making, “not listening” is a strange skill that can be acquired only through practice. This is

analogous to how a conductor learns to negotiate an ensemble that plays far behind his or her beat, such as occurs with many Central European orchestras. For *Bühnenmusik* conductors at institutions such as the Wiener Staatsoper, these sorts of negotiations are learned through apprenticeship; the same can be said for the stage music players, which is one of the advantages of retaining a fulltime *Bühnenmusik* orchestra with a fixed roster.

Many of the musicians who regularly play *Bühnenmusik* find it a deeply meaningful experience. Rogers, for example, appreciates the fact that stage musicians often function as characters within the drama itself. He also hopes that emerging directors realize the importance of *Bühnenmusik* in the context of their staging, and do not relegate its performance to the orchestra pit. I am optimistic that, from watching specialists such as Rogers, this will not be the case.

* * *

As a final, personal note, I find it promising (both as a conductor and composer), that *Bühnenmusik*, and the sort of spatialization developments it has encouraged, will continue to inspire composers, conductors, directors, and instrumentalists to innovate. While the relationships between stage, pit, and electronic elements in a work like *Die Soldaten* seem to be the pinnacle of complexity and ingenuity, I am confident that technology and imagination will continue to provide new avenues for musical development in this area.

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