Planal Analysis and the Emancipation of Timbre:  
Klangfarbenmelodie and Timbral Function in Mahler, Schoenberg, and Webern

by

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Dissertation submitted in partial fulfillment of  
the requirements for the degree of Doctor of Philosophy  
in the Department of Music  
in the Graduate School of Duke University  

2020
ABSTRACT

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Abstract

Arnold Schoenberg’s theory of Klangfarbenmelodie (timbre-melody) is one of the most important yet least understood compositional innovations of the twentieth century. Critical reexaminations of his writings reveal that it is a textural principle, a way to combine the homophonic and polyphonic forms of presentation. In other words, Klangfarbenmelodie is another means to accomplish what Schoenberg eventually realized in composition with twelve tones—a way forward for new music.

In many respects, the twentieth century was the era of chromaphony: timbre-based music. In addition to chronicling the emancipation of timbre, this dissertation emancipates timbre in scholarly discourse by offering a new analytical method with the flexibility to be a powerful tool for all musical parameters—planal analysis. In conjunction with auditory scene analysis and music cognition, planal analysis enables new ways of studying musical elements by placing them in separate analytical planes.

Direct precedents of Klangfarbenmelodie can be traced to Gustav Mahler, whose music had a profound influence on Schoenberg. Clarity of musical line in Mahler’s massive orchestras was often accomplished through his refined control of timbre. In his music, we begin to see timbre treated as part of the thematic material—that is, timbre developed in similar ways as pitch content. While Mahler’s practice is still pitch-oriented, his functional orchestration represents a type of proto-Klangfarbenmelodie.

Schoenberg’s “Farben,” the third of the Fünf Orchesterstücke, Op. 16 (1909), predates his discussion of Klangfarbenmelodie in Theory of Harmony. Nonetheless, this music is rightfully considered a seminal moment in the development of the technique.
Through close analysis and sketch studies, timbral processes are revealed as part of the musical logic alongside pitch processes.

Anton Webern took up the mantle of *Klangfarbenmelodie* after Schoenberg’s early experiments with it. Contrary to popular reception, Schoenberg and Webern had similar approaches to this new way of composing music with timbre. In 1911, Webern elevated Schoenberg’s theoretical declaration of timbre’s independence to a fully realized practice in his compositions. Through analyses of Webern’s Opp. 9 and 10, this dissertation shows that Webern’s aphoristic works are governed by well-formed and logical timbral processes. His chromaphonic works of 1911 display fully formed *Klangfarbenmelodie* in both of its definitions: (1) a timbre-melody and (2) a textural style of presentation.
Dedication

To my parents,

for their constant love and support.
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List of Abbreviations

ASC  Arnold Schönberg Center, Vienna, Austria


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1. Introduction

Pitch without timbre cannot exist. Yet, as enculturated musicians, we are so pitch-centric that only in recent years has the intellectual history of timbre begun to be explored. The complexities and richness of musical timbre in the twentieth century encompass not only expanded uses of traditional orchestral instruments, organological innovations, and the development of electronic music, but also musical languages foreign to European art music, the development of popular genres, and the breaking down of all types of musical barriers. In many ways, the twentieth century was the era of timbre-based music.

In 1911, Arnold Schoenberg (1874–1951) theorized Klangfarbenmelodie (timbre-melody), one of the most important yet least understood compositional innovations of the twentieth century.\(^1\) In his Theory of Harmony (Harmonielehre), he writes:

Now, if it is possible to create patterns out of tone colors [Klangfarben] that are differentiated according to pitch [Höhe], patterns we call ‘melodies,’ progressions, whose coherence (Zusammenhang) evokes an effect analogous to thought processes, then it must also be possible to make such progressions out of the tone colors [Klangfarben] of the other dimension, out of what we call simply ‘tone color’ [Klangfarbe], progressions whose relations with one another work with a kind of logic entirely equivalent to that logic which satisfies us in the melody of pitches [Klanghöhen].\(^2\)

1 Klangfarbenmelodie is often translated as tone-color-melody. However, a more proper rendering is melody-of-timbres, or timbre-melody. The term is better understood as a two-part compound of Klangfarben (a distinct compound word in its own right) and Melodie, rather than the three-part Klang, Farbe, and Melodie. Furthermore, Klangfarben is plural: therefore, multiple timbres are implied.

Schoenberg’s words are the declaration of independence for timbre, a pivotal moment in music history that still reverberates today. This dissertation explores what Klangfarbenmelodie meant to Schoenberg and his student and friend Anton Webern (1883–1945) as well as investigates how they employed the technique in their compositions. It also finds historical precedent for timbre-based composition in the works of Gustav Mahler (1860–1911), a composer who exerted profound influence on Schoenberg and Webern. Throughout this dissertation I develop a lexicon for timbral analysis and a method of textural/perceptual analysis well-suited to studying timbre.

Chapter 2 focuses on the music of Gustav Mahler, crucial to any study of fin-de-siècle timbre. Clarity of musical line in his massive orchestras was often accomplished through his refined control of timbre. Mahler’s music begins the process of timbre’s emancipation. At times, timbre is clearly subordinate to other parameters; but in certain instances, Mahler uses timbre syntactically, elevating it above other parameters in the musical hierarchy and employing it to communicate the musical logic of the work. Through Mahler’s use of functional timbre, I begin to develop the language of timbral analysis. The chapter focuses on two aspects of timbral function: timbre’s role in communicating musical logic in Klangfläche (sound-sheet) technique and the development of timbres progressing in a directed process. Through an investigation of Klangfläche technique in Mahler’s First Symphony, as well as music of Richard Wagner (1813–83), I develop an analytical technique—planal analysis—based on the multiple

Beziehung untereinander mit einer Art Logik wirkt, ganz äquivalent jener Logik, die uns bei der Melodie der Klanghöhen genügt.” For all quotations from this text, the German is from Arnold Schönberg, Harmonielehre (Vienna: Universal Edition, 1911), here citing 470–71.

A Glossary of terms used in timbral analysis is included.
perceptual planes of \textit{Klangfläche} composition. In conjunction with the principles of music cognition and auditory scene analysis, planal analysis enables new ways of studying musical elements by placing them in separate analytical planes, allowing for study across parameters as well as a new way to understand perceptual stratification and musical texture. In this chapter, the primary focus of my planal analyses is on texture.

Chapter 3 explores Arnold Schoenberg’s theoretical declaration of \textit{Klangfarbenmelodie} and his conception of it as a textural principle. The chapter offers a critical reexamination of Schoenberg’s many theoretical and other writings that help elucidate his notion of \textit{Klangfarbenmelodie}. Chapter 4 analyzes the \textit{locus classicus} of \textit{Klangfarbenmelodie}: Schoenberg’s \textit{Fünf Orchesterstücke}, Op. 16, No. 3, “Farben.” Within the chapter, I offer two versions of planal analysis of “Farben.” The first version is a continuation of the textural style familiar from Chapter 2, organically illustrating the perceptual process of the music’s unfolding. The second version of planal analysis imposes a more structured analytical apparatus, stratifying the textural/perceptual layers to illustrate the interactions of timbral lines (timbre-melodies).

Chapter 5 focuses on Anton Webern and the \textit{Klangfarbenmelodie} works he composed in 1911. Webern’s deployment of his teacher’s concept in \textit{Sechs Bagatellen für Streichquartett} (Op. 9) and \textit{5 Stücke für Orchester} (Op. 10) demonstrates a conscious effort to compose \textit{Klangfarbenmelodie}.\footnote{The publisher’s conventions of spelling out the number “six” versus using the numeral “5” in the titles are retained. Anton Webern, \textit{Sechs Bagatellen für Streichquartett}, Op. 9 (Vienna: Universal Edition, 1924) and Anton Webern, \textit{5 Stücke für Orchester}, Op. 10 (Vienna: Universal Edition, 1923).} This chapter develops a third style of planal analysis: block topography analysis. Through timbral and block topography analyses, the “abstract forms” of Webern’s aphoristic works are shown to be logical, well-articulated,
and traditional in many respects. Once timbre is realized as the primary vehicle for communicating musical logic in these works of 1911, Webern’s music is rendered comprehensible in new and manifest ways.

Throughout Chapters 3–5, I show that Schoenberg and Webern had a similar conception of *Klangfarbenmelodie*, and that the dichotomy between them was imposed by a perfunctory assessment of *Klangfarbenmelodie* that arose in the critical reception. Chapter 6 offers conclusions about *Klangfarbenmelodie* and its place in chromaphony, some considerations of timbral analysis, and planal analysis as a method.

### 1.1 Chromaphony

*Klangfarbenmelodie* belongs to a broader concept in music, what I call: *chromaphony*. From the Greek for color and sound, chromaphony is music that elevates timbre, sonority as color, or the sound itself to a compositionally forward position. It is a shift of music’s center of gravity to timbre. Pitch- and rhythm-processes still operate, but the music becomes “about timbre.” Chromaphony is music whose primary aesthetic goal or means of communication is inherently timbral in nature.

Chromaphony is a far-reaching taxonomic category. Many works exhibit chromaphonic qualities while still retaining pitch as their primary organizational parameter. Take, for instance, György Ligeti’s micropolyphony in *Atmosphères* (1961): there are certainly pitch and rhythmic processes at work, but the great masses of sound are timbral phenomena. Speed and density overcome the individuation of the tones to create the timbral sheets. *Atmosphères* is chromaphonic, but the timbral effect is accomplished primarily through tempered pitch and rhythm. On the other hand, some types of chromaphony, such as Polish sonorism exemplified by Krzysztof Penderecki’s
Threnody to the Victims of Hiroshima (1960), radically de-emphasize pitch through timbral manipulation and extended playing techniques (in addition to bandwidth clusters in the case of Penderecki’s Threnody).

Along with dodecaphony, chromaphony was a dominant musical thread in the twentieth century. Some of the most obvious chromaphonic works include Henry Cowell’s The Banshee (1925), and the prepared piano pieces of John Cage beginning in the 1930s. Two prominent chromaphonic trails were blazed by Edgard Varèse (1883–1965) and Karlheinz Stockhausen (1928–2007). From the 1910s to the 30s, Varèse broke new ground with percussion instruments of indefinite pitch, broadening the palette of sonorities to include new noises. Later, in the 1950s, he helped push beyond the tempered scale of Western music and in the process created new timbres, new electronic instruments, and significantly contributed to the development of electronic music.

Varèse was not a futurist, but his early innovations lie along a similar chromaphonic path. After founding the futurist movement in 1909, the poet Filippo Tommaso Marinetti (1876–1944), was joined by, among many others, Luigi Russolo (1885–1947), painter, composer, and inventor of the musical instruments he called intonarumori. The futurists believed that their new art called for new timbres. According to Jonathan W. Bernard, “The highly visible and sensational, though short-lived, nature of the futurist musical phenomenon ensured that it would be remembered with a vividness far out of proportion to its importance.”

Nonetheless, in the words of Julian Johnson, “[Russolo’s] work, rudimentary and naive as it might have been, gave

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expression to a much broader and more powerful phenomenon.”

He continues, “[Russolo’s] importance to music history lies neither in any surviving music nor instruments, but rather in the expanded conception of musical sound which he so passionately articulated.” Through the futurists, chromaphonic musical language was expanded to include sounds previously not considered musical.

Other early trends in chromaphony included a whole genre of mimetic works such as Arthur Honegger’s *Pacific 231* (1923) and Alexander Mosolov’s *Factory: Machine Music* (1927). A number of composers experimented with timbral manipulation through spatial means in the 1910s. Two successful works of this type are Percy Grainger’s *The Warriors* (1913) and Rued Langgaard’s *Music of the Spheres* (1918), both of which employ multiple orchestras to great effect. Spatial music becomes tremendously important with the development of electronic music in the 1950s.

The mid-century avant-garde, drawing much inspiration from Webern, composed many types of chromaphony. Some of Stockhausen’s chromaphonic works include *Kontra-Punkte* (1953), *Gruppen* (1957), and *Kontakte* (1960). Again, there are most certainly pitch- and rhythm-processes at work, but there is also an elevation of timbre. In *Kontra-Punkte*, distinct, non-blending instrumental timbres give way to blended sounds of the piano and its various contributors, then finally to the solo piano in a directional process of timbral hetero- to homogeneity. *Gruppen* employs the spatial manipulation of timbre through its three, physically separated ensembles, while the electronic timbres of *Kontakte* are manipulated to contribute to musical structure through total serialism. A

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7 Johnson, 374.
more recent branch of chromaphony is spectralism, and much of work produced at
IRCAM (Institut de Recherche et Coordination Acoustique/Musique) in Paris since the
1970s.

Not all chromaphonic music is experimental or avant-garde. Take, for instance,
Maurice Ravel’s Bolero (1928), the antithesis of unconventionality, yet radical in its own
right. It is an excellent example of tonal music organized on one level by pitch but
another level by timbre. Without doubt, Ravel elevates timbre to a compositionally
functional role. Comprehensible pitch processes still exist. However, pitch is de-
emphasized through repetition without variation, while timbre is the musical idea that is
developed. The above examples are but a few of the many types of twentieth-century
chromaphony, and they certainly do not represent an exhaustive list. Though not
necessarily a direct forebearer, the precursor of these timbre-based musical styles is
*Klangfarbenmelodie*.

1.2 The Emancipation of Timbre

Not only did *Klangfarbenmelodie* give birth to chromaphony, but also to the
emancipation of timbre. The early twentieth century was the era of musical
emancipations. Perhaps the most famous liberation is that of dissonance, which redefined
the ear’s capacity as listeners felt air from another planet in Schoenberg’s String Quartet
No. 2, Op. 10 (1908). The emancipation from the bar line sparked a scandalous night
that lives on in the annals of music history with the premiere of Igor Stravinsky’s (1882–

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8 The fourth movement of Arnold Schoenberg’s String Quartet No. 2, Op. 10 is often considered a
watershed moment in music history. The fourth movement sets to music the poem *Entrückung (Transport)*
by Stefan George. It is the first time in Schoenberg’s work that organized atonality (pantonality) appears.
The first line of the poem, “I feel air of another planet” (*Ich fühle luft von anderem planeten*), has taken on
a symbolic meaning foreshadowing the coming paradigm shift away from tonal music.
1971) *Le Sacre du printemps* (1913)—although the reaction to this work likely had as much to do with its powerful timbres and Vaslav Nijinsky’s groundbreaking choreography as it did with the metric features of the music. Contrary to popular myth, however, there was no riot in Paris the evening of *Le Sacre*’s premiere. What of the emancipation of timbre? What tumult did it unleash?\(^9\)

The emancipation of timbre ruptured the musical ethos, fundamentally altering the question: *What is music?* According to the controversial German musicologist Hans Heinrich Eggebrecht, “Schoenberg’s vision of the emancipation of timbre—in which *Klangfarbenmelodie* or *Klangfarbenmusik* takes priority over pitch—...seemed to herald a paradigm shift in the concept of music and how it was understood.”\(^10\) The notion of an “emancipation of timbre” is common in German-language scholarship, where, unsurprisingly, there is usually a connection back to German symphonic tradition. Theodor W. Adorno casually peppers his prose with the term “emancipation of timbre,” although he never gives it specific treatment. At times he associates this freedom of timbral means with Wagner, Strauss, and Mahler, connecting it to playing technique,

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\(^10\) Incidentally, the emancipation of timbre actually is associated with a riot. Two months before the premiere of Stravinsky’s *Le Sacre*, Schoenberg conducted a concert in Vienna on March 31, 1913 known as the *Skandalkonzert*. The program included music by Anton Webern, Alexander Zemlinsky, himself, Alban Berg, and Gustav Mahler. With punches thrown, the concert was aborted before Mahler’s *Kindertotenlieder* could be performed. The concert became a tabloid sensation in the Viennese press, trials followed, and fines were dispensed. The works that caused the most disturbance that evening were Webern’s *6 Stücke für Orchester*, Op. 6 (1909) and Berg’s *Fünf Orchesterlieder nach Ansichtskarten-Texten von Peter Altenberg*, Op. 4, Nos. 2–3 (1912). Webern’s work aroused the conservative faction’s ire, but it was Berg’s Op. 4 that incited the crowd to violence. It is difficult to say whether it was Altenberg’s text, Berg’s intervallic and harmonic language, or his use of timbre that so offended the Viennese public. Nonetheless, the evening ended in fisticuffs. Hans Moldenhauer and Rosaleen Moldenhauer, *Anton von Webern* (New York: Alfred A. Knopf, 1979), 170–73, 659n9.

counterpoint, and musical form. Adorno’s fullest and most direct treatment of timbre is in his book, *Mahler: A Musical Physiognomy*. In it, Adorno makes reference to timbre as the surface or external feature of the music and form as the deep or internal feature. Defining physiognomy as discovering the internal character from external features, Adorno titles his book on a relationship that can be redefined as that between form and timbre. As will be seen, the relationship between timbre and musical form promises to be fruitful ground for inquiry.

There are certainly chromaphonic antecedents of *Klangfarbenmelodie* and the emancipation of timbre to be found throughout orchestral tradition. As Walter Frisch points out, “Schoenberg had no monopoly on the liberation of tone color; Debussy, Mahler, Strauss, and others in the preceding generation had moved in that direction. But as a composer and theorist, Schoenberg articulated the concept with unusual force that reverberated down through the century.” Mahler’s use of functional timbre and treatment of the orchestra as an artistic palette is a direct forerunner for Schoenberg and Webern. Claude Debussy’s (1862–1918) coloristic use of non-functional harmony is a type of chromaphony. His use of timbre extends beyond traditional formal and textural delineations. Debussy suspends the teleological harmonic drive so that the listener basks in the aural luminosity of sound. In addition to those in the generation before Schoenberg, Monika Lichtenfeld identifies Beethoven as a composer who influenced the emancipation

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of timbre, finding functional timbre in his works. And as Carl Dahlhaus writes in *Nineteenth Century Music*, Hector Berlioz’s music is certainly influential as well:

Sophistication of local color interacted with a relaxation of functional harmony to become one of the decisive evolutionary features of the age. Ultimately, around 1900, it led to a reformation of the notion of timbre, one of the crucial features of *fin-de-siècle* musical modernism. This ‘emancipation of timbre,’ initiated by Berlioz, freed tone color from its subservient function of merely clarifying the melody, rhythm, harmony, and counterpoint of a piece, and gave it an aesthetic *raison d’être* and significance of its own.

Many earlier examples of chromaphonic elements in music can be found in orchestral works of Beethoven, Berlioz, Liszt, Wagner, and Strauss. But, many of these antecedents remain firmly “about tonality,” not timbre.

### 1.3 Defining Timbre

Defining timbre is at once easy and difficult. Musicians have an intuitive understating of what timbre is. It is that a violin sounds like a violin and an oboe an oboe. It is also that my violin sounds different than your violin. However, specifically defining timbre is far more complex. There is something enlightening in the intentional imprecision of Isabella van Elferen’s explanation, “In its most basic definition, timbre is musical difference.” Timbre is best understood through the entirety of the musical tone.

*A musical tone is a timbre that contains pitch (definite or not) and has duration.*

In discussing timbre, we separate out pitch and duration as separate aspects that are

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16 Timbre, as used herein, is synonymous with tone color, tone quality, and sonorous quality.

contained within the timbre. The timbre sounds at a pitch and the timbre lasts a certain amount of time. Pitch is usually measured in Hertz and is easily parsed as the fundamental in instruments of definite pitch, but more difficult or impossible to discern in instruments of indefinite pitch. Duration is measured in either relative units—proportional divisions of a beat determined by tempo—or specific units of time (seconds). Both pitch and duration are one-dimensional, and therefore, readily quantified. Timbre, on the other hand, is multidimensional, and much more difficult to quantify.¹⁸

Wallace Berry offers a good musical explanation, “Timbres or sonorous qualities…are determined by physical characteristics of the (sometimes altered or manipulated) sounding medium, by registral locus, by articulative mode of production, and by degree of loudness.”¹⁹ Rather than a definition, Berry identifies some of the factors governing timbre. As of 2014, the Acoustical Society of America (ASA) defines timbre as:

That multidimensional attribute of auditory sensation which enables a listener to judge that two non-identical sounds, similarly presented and having the same loudness, pitch, spatial location, and duration, are dissimilar. Timbre is related to sound quality, often specified by qualitative adjectives (e.g., bright or dull).

NOTE: The timbre of a sound is strongly influenced by its time-varying characteristics, particularly during the initial portion (attack), and is also influenced by its ongoing spectral and temporal characteristics. Timbre is an essential element in the identification of the source of a sound (e.g., particular musical instrument[s]) and the manner of sound production.²⁰

¹⁸ Quantifying timbre is not our goal. Though not employed herein, multidimensional scaling (MDS) is a way to quantify timbres. It plots sound attributes on a three-dimensional cartesian coordinate system. See, for example, Taffeta M. Elliott, Liberty S. Hamilton, and Frédéric E. Theunissen, “Acoustic Structure of the Five Perceptual Dimensions of Timbre in Orchestral Instrument Tones,” Journal of the Acoustical Society of America 133 (2013): 389–404.


This view of timbre has its roots in Hermann von Helmholtz’s *On the Sensations of Tone as a Physiological Basis for the Theory of Music* (1863). Helmholtz designates three aspects of musical tones: force, pitch, and quality.\(^{21}\) Force is amplitude or loudness; he dispatches its definition in a single paragraph. Pitch is frequency of the fundamental; he devotes seven pages of prose to defining its properties. Tone quality (*Klangfarbe*) is timbre; much of the remainder of Part I of Helmoltz’s treatise, the next 133 pages, is devoted to explaining what timbre is.\(^{22}\) The 2014 ASA definition’s note recalls Helmholtz’s self-limitation, “When we speak in what follows of musical quality of tone, we shall disregard these peculiarities of beginning and ending, and confine our attention to the peculiarities of the musical tone which continues uniformly.”\(^{23}\) Helmholtz’s motivation is understandable: his goal was the scientific observation and explication of tone quality, so he necessarily limited his scope to the uniform measurable properties he was able to observe. Helmholtz defines timbre as perception of the musical tone with its partials: “The upper partial tones corresponding to the simple vibrations of a compound motion of the air, are perceived synthetically…. Their existence in our sensation is established as an alteration in the quality of tone.”\(^{24}\) With stronger language and his limitation in mind, he explains, “The quality of the musical portion of a compound tone depends solely on the number and relative strength of its partial simple tones.”\(^{25}\) The 2014 ASA definition takes this Helmholtzian view to an extreme. Not only does it define


\(^{22}\) See the translator’s note for his comments on the translation of *Klangfarbe* as tone quality (Helmholtz, 24).

\(^{23}\) Helmholtz, 67.

\(^{24}\) Helmholtz, 65.

\(^{25}\) Helmholtz, 126.
timbre negatively by excluding from it loudness and pitch, but also spatial location and duration. The desire to refine the negative definition has led to more and more measurable elements being excluded as to what timbre is not. However, by discounting anything that can be more easily measured, timbre has been relegated to an impractical fraction of its whole.

Spatial location is a crucial part of timbre. A trumpet played an arm’s length away from the listener and one played around the corner, in the next room, or over a hill in the distance sound different—the sound waves’ transit to our ears is different, and therefore, we perceive different timbres. As early as 1934, Harvey Fletcher, a scientist at Bell Telephone Laboratories, noted, “It is well known that changes in the overtone structure produce corresponding changes in timbre but it is not so well known that changes in loudness or pitch, without in any way changing the overtone structures, will also produce changes in timbre.”

Robert Erickson writes, “The [ASA] definition [of timbre] has been so narrowed that it is almost irrelevant.” Although he was writing of the ASA’s 1960 definition of timbre, his comments apply equally to the 2014 definition. The eminent psychoacoustician Albert S. Bregman reaches the same conclusion. He writes:

[The ASA definition] is, of course, no definition at all. For example, it implies that there are some sounds for which we cannot decide whether they possess the quality of timbre or not. In order for the definition to apply, two sounds need to be able to be presented at the same pitch, but there are some sounds, such as the scraping of a shovel in a pile of gravel, that have no pitch at all. We obviously have a problem: Either we must assert that only sounds with pitch can have timbre, meaning that we cannot discuss the timbre of a tambourine or of the

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26 Harvey Fletcher, “Loudness, Pitch and the Timbre of Musical Tones and Their Relation to the Intensity, the Frequency and the Overtone Structure,” *Journal of the Acoustical Society of America* 6 (1934): 68.
musical sounds of many African cultures, or there is something terribly wrong with the definition.28

According to Stephen McAdams and Albert Bregman, “Timbre tends to be the psychoacoustician’s multidimensional waste-basket category for everything that cannot be labeled as pitch or loudness, including short-term spectral changes such as onset transients, long-term spectra, those dynamic qualities which a musician would term ‘texture,’ and so on.”29 Turning to psychoacoustics is enlightening.

“Brains are practical.”30 As David Huron explains, “It is much more useful for us to perceive ‘objects’ rather than ‘frequencies.’”31 On a primal level, our brains might want to know whether I can eat that sound or if that sound will eat me, valuable information. Timbre is about source location and identification of an object or action. Where is it? What is it? When we hear a sound, we create an auditory image.32 As Huron explains, an auditory image is the total sound input repackaged by the brain in order to process the sound as an identifiable thing or a source.33 From a musical point of view, it could be a violin or an oboe.

Discussing timbre often becomes a debate about which word best describes a certain sound. However, for the purposes of musical analysis, we actually do have words that perfectly describe timbres: their sound sources. Our languages and musical training have already equipped us with the necessary vocabulary. A violin sounds like a violin,

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31 Huron, 17.
33 Huron, Voice Leading, 16.
and an oboe like an oboe. We can further specify variations and gradations of tone colors through alterations of the sounding mechanism, for example playing technique, the use of mutes, etc. There is no need to describe timbre adjectivally in seeking its functional role in music. In discussing a timbre, I will occasionally refer to the aspects of its amplitudinal envelope: attack, decay, sustain, and release (ADSR). But in general, I refer to timbres by their sound sources.

Conceiving of timbre positively as the sound we hear, rather than negatively as not this or not that, allows us to understand far more meaningful musical applications of it. By including loudness, register, and spatial location we create a definition of timbre that better reflects the musical experience of real-world performers and listeners. This positive approach also brings us closer to Schoenberg’s conception of timbre, “[A musical] tone [Ton] becomes perceptible by virtue of tone color [Klangfarbe], of which one dimension is pitch [Klanghöhe]. Tone color is, thus, the main topic, pitch a subdivision. Pitch is nothing else but tone color measured in one direction.”

Schoenberg is correct. Pitch—that is, the fundamental pitch evoked by the auditory system—is one frequency present in the many modes of vibration that occur during the excitation of an object. Timbre is the totality of all the modes of excitation. My timbral analyses aim to realize Schoenberg’s vision and to bring forth a new way of understanding music, alongside pitch-centered analytic methods, where timbre is the main topic.

As I use it, timbre is the totality of a musical tone (or any sound) not including pitch class or duration. This definition differs from some previous definitions in three substantial ways. First, it includes loudness. In composition with more than one timbre,
dynamics are important because they facilitate the combination, superimposition, or juxtaposition of instrumental forces. A tone on a violin played loudly has a different sound quality than the same pitch and duration played softly. They sound different. They are different musical tones. Second, this definition of timbre includes location. The offstage oboe at the beginning of the third movement of Hector Berlioz’s *Symphonie fantastique* (1830) has a different timbre than when it returns to the stage. Even though the physical vibrations produced by the oboe may be identical in both locations, the sound waves’ transit to our ears is not. As location changes so does timbre. Finally, and perhaps most importantly, this definition includes register by specifying that timbre is distinct from pitch class, rather than pitch. In many types of pitch-based analysis, a passage centered around C₃ is markedly different than one centered around B₃, a semitone away. These notes are different pitch classes and have differing tonal consequences. However, C₃ and C₅ may be treated similarly: considered in terms of octave equivalency, both pitches carry the same tonal meaning. But in timbral analysis, there is a radical difference between C₃ and C₅. After all, one of the factors that goes into forming an auditory image might be whether the sound is high or low, regardless of the specific fundamental frequency. Register, in this case, helps us determine source location. When identifying whether the sound emanates from a violin or cello, an oboe or bassoon, the useful information (related to pitch) in this determination is not whether the pitches played are B₃ or C₂, but the register in which they occur. Summarizing Gerald J. Balzano’s 1986 article, “What are Pitch and Timbre?” Bregman writes:

Balzano points out that if we create a synthetic timbre by copying the spectral envelope (the shape of the spectrum) of an oboe playing a middle C...the result sounds like an oboe. However, if we synthesize a tone an octave above or below
the original by using the original tone’s spectral and temporal envelopes, the result will not sound much like an oboe. This means that there are changes in the spectrum and dynamics of an oboe that are locked together with changes of pitch.\textsuperscript{35}

In other words, if the pitch has changed, the timbre has changed. Each musical tone is a timbre that contains pitch, definite or not.

1.4 Auditory Scene Analysis

*Auditory scene analysis* is the process of organizing and perceiving sound. It is how the brain understands all that is heard. It is not the study of subjective interpretations of what sounds represent metaphorically or what we find personally meaningful in music. Rather, auditory scene analysis is the objective study of how sounds are biologically and perceptually processed. Auditory scene analysis distinguishes between acoustic phenomena that are physically generated, and auditory phenomena that are evoked or perceived. For example, pitch is a perceptual phenomenon, not a physical phenomenon, a fact well-established by psychoacoustics.\textsuperscript{36} According to Huron, “Pitch does not exist in the external world…. Instead, pitch is constructed in listeners’ heads.”\textsuperscript{37} He explains, “Pressing a piano key produces a bunch of partials, and the auditory system uses these partials to construct the experience of a particular pitch…. Instruments do not generate pitches; they *evoke* pitches in brains.”\textsuperscript{38}

In auditory scene analysis sounds are processed in *auditory streams* and create auditory images. An auditory stream is a psychological organization that allows a sequence of acoustic events to be interpreted as a whole and allows these acoustic events

\textsuperscript{35} Bregman, *Auditory Scene Analysis*, 484–85.
\textsuperscript{36} Huron, *Voice Leading*, 38.
\textsuperscript{37} Huron, 38.
\textsuperscript{38} Huron, 38.
to be identified as coming from a source (or group of sources) emanating from a particular location.\textsuperscript{39} Drawing on Huron’s example of a faucet dripping, we do not hear individual drops of water, rather, we hear an auditory stream that forms a sense of continuity over time.\textsuperscript{40} Other simple examples include a ticking clock or a scale played on any particular instrument.\textsuperscript{41} As he explains, “In the perception of music, the phenomenon of auditory streams is critically important. Without this psychological phenomenon, there would be no musical lines, just a succession of disconnected sound events with no feeling of connection.”\textsuperscript{42}

One reason McAdams finds that timbre can contribute to musical structure is because listeners connect sounds that arise from the same source.\textsuperscript{43} As noted above, the auditory image that an auditory stream evokes is closely associated with source location and identification. According to McAdams:

\begin{quote}
In general, a given source will produce sounds that are relatively similar in pitch, loudness, timbre, and spatial position from one event to the next. The perceptual connection of successive sound events into a coherent ‘message’ through time is referred to as \emph{auditory stream integration}, and the separation of events into distinct messages is called \emph{auditory stream segregation} [emphases added].\textsuperscript{44}
\end{quote}

According to Bregman, “It appears that one of the more important rules that [the auditory system] uses is to consider sounds to be part of the same stream if they resemble one another in certain ways.”\textsuperscript{45} Timbre is one of those ways. As Andrew H. Gregory puts it, “[Experimental] results clearly show that many factors other than pitch influence the

\textsuperscript{39} McAdams and Bregman, “Hearing Musical Streams,” 26.
\textsuperscript{40} Huron, \textit{Voice Leading}, 24–25.
\textsuperscript{41} Huron, 63.
\textsuperscript{42} Huron, 25.
\textsuperscript{43} Huron, 63.
\textsuperscript{45} Bregman, \textit{Auditory Scene Analysis}, 104.
perception of musical stimuli as separate auditory streams." Many of these other stimuli are found in the wastebasket of timbre, as McAdams and Bregman describe it.

David Wessel’s notable experiment convincingly demonstrates timbre’s importance in stream segregation. He designed an experiment where a pitch pattern in ascending fourths was played in the same timbre and also in different alternating timbres. When perceived in the same timbre, listeners identified the ascending triplet pattern shown in Figure 1.1a. But when the sounds of alternating tones were manipulated to be perceived as different timbres, two descending three-tone patterns were heard, as seen in Figure 1.1b. Wessel concludes, “It is the nature of the relationships among the elements of the [timbral] patterns that is of primary importance in their perception.”

![Figure 1.1a–b. David Wessel’s demonstration of timbre’s effect on stream segregation: (a) an ascending three-tone pattern perceived in the same timbre; (b) two interleaved descending three-tone patterns perceived in different timbres.](image)

In another well-known experiment, Gregory investigated listeners’ perceptions of two crossing ascending and descending scales. According to him, “With no timbre

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48 Wessel, 49.
difference, all listeners report a separation into two auditory streams of high and low half scales."\textsuperscript{49} However, “As timbre difference is increased, this perception becomes less frequent and the perception of complete whole scales becomes predominant.”\textsuperscript{50} Figure 1.2a–b illustrates the outcomes. First, Gregory’s results confirm earlier experiments that in monotimbral musical lines pitch is an important factor in determining the perception of tone sequences. But more importantly, once multiple timbres are introduced in the crossing scales, they are given perceptual preference and the scales are heard as crossing. Timbre is a structuring parameter in the perception of music. Worthy of note is that musical and nonmusical subjects performed equally in Gregory’s experiments.\textsuperscript{51}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Andrew H. Gregory’s demonstration of timbre’s effect on stream segregation. When two complete crossing scales are performed: (a) in the same timbre, bounced back half-scales are perceived; (b) in different timbres, two complete crossing scales are perceived.}
\end{figure}

Timbre plays a critical role in auditory scene analysis, and the implications are vastly important for musical scholarship. Expanding the notion of auditory stream

\begin{flushright}
\textsuperscript{49} Gregory, “Timbre and Auditory Streaming,” 168.
\textsuperscript{50} Gregory, 168.
\textsuperscript{51} Gregory, 171.
\end{flushright}
segregation and integration, textural streams enable us to perceive the complex auditory scenes of music. Huron explains:

An auditory scene can exhibit different levels of organization. At the lowest level, individual partials may amalgamate to form auditory images corresponding to distinct sound sources. At a higher level, these auditory images can combine together to form intermediate musical layers, dubbed textural streams. At the highest level, all of the sound sources combine to form a unitary percept of the whole experience, dubbed a musical stream.52

A textural stream is a musical line. It is a series of connected musical tones. A textural stream could be a connected series of pitches (pitch-melody or harmonic progression) or a connected series of timbres (timbre-melody or timbral progression).53

Another experiment illustrates timbre’s crucial role in segregating textural streams. In 2003, Caroline Bey and Stephen McAdams interleaved two melodies and tested whether a subsequently heard test melody was present in them.54 Goodchild and McAdams summarize their findings: “Participants’ accuracy was near chance when the target and distractor were played by the same instrument in the same pitch register. However, their accuracy increased as a function of the timbral dissimilarity between the target and distractor instruments.”55 Timbre clearly contributes to separating the musical lines into distinct textural streams.

52 Huron, Voice Leading, 170.
53 Though not highlighted in this dissertation, a textural stream could also be constructed of rhythmic elements, creating rhythm-melodies and rhythmic progression. John Roeder’s work on pulse streams comes to mind. See, for example, John Roeder, “Interacting Pulse Streams in Schoenberg’s Atonal Polyphony,” Music Theory Spectrum 16, no. 2 (Autumn, 1994): 231–49.
Auditory scene analysis corroborates what we “know” as musicians. It substantiates intuition. One of the goals Huron’s marvelous book achieves is to bring together auditory scene analysis with learned musical knowledge. It shows how the musical practices that define the common practice period and developed organically through compositional evolution are by no coincidence similar to principles gleaned from modern scientific observations. Huron creates a number of principles that are quite similar to the canonic rules of voice leading. Some of these principles can be directly applied to timbral analysis through the investigation of textural streams. The most obvious is the “Timbral differentiation principle,” which states, “Differences of timbre contribute to the perceptual independence of concurrent voices or parts.”

Since source location is part of that multidimensional wastebasket of timbre, Huron’s “Source location principle” is also helpful: “Different source locations contribute to the perceptual independence of concurrent voices or parts.” As we will see, manipulation of timbre is one of the chief ways to elucidate concurrent textural streams—i.e. musical lines—and to create structural functions.

Auditory scene setting, that is, the process of assembling the hierarchy of partials, auditory streams, and textural streams, bears resemblance to Gestalt psychology applied to auditory perception rather visual perception. Fred Lerdahl and Ray Jackendoff explain, “The fundamental claim of Gestalt psychology [is] that perception, like other mental activity, is a dynamic process of organization.” According to Alexander Rehding, “One

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57 Huron, 117.
of the principal factors that guides the processes of putting such complex textures into auditory streams is timbral continuity, following the Gestalt principle of similarity, where discrete objects are grouped together on the basis of possessing a common distinguishing quality.”  

The principle of similarity is just one of many Gestalt principles that can be applied to music. According to Christopher J. Plack, five of the most important principles for hearing are:

*Similarity:* Sound components that come from the same source are likely to be similar.

*Good continuation:* Sound components that come from the same source are likely to flow naturally over time from one to the other (without any abrupt discontinuities).

*Common fate:* Sound components that come from the same source are likely to vary together (e.g. they will be turned on and off at the same time).

*Belongingness:* A single sound component is usually associated with a single source: It is unlikely that a single sound component originates from two (or more) different sources simultaneously.

*Closure:* A continuous sound obscured briefly by a second sound (e.g., speech interrupted by a door slam) is likely to be continuous during the interruption unless there is evidence to the contrary.

With these five principles in mind, auditory scene analysis proves to be a powerful tool in timbral analysis.

### 1.5 Timbre and Texture

Timbre is inextricably interwoven with texture. Timbre as a structural element in texture is easily grasped in the classical symphonies of Haydn and Mozart. In R. Larry Todd’s “Orchestral Texture and the Art of Orchestration,” an excellent primer on the early development of the orchestra and orchestration, he points to the increased

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independence of winds and strings, textural contrasts coinciding with formal subdivisions, and timbral signals of harmonic modulations as moments of structural timbre in Haydn’s Symphonies Nos. 47 (1772), 61 (1776), and 62 (ca. 1780).  

According to Emily Dolan, timbre signaled aesthetic attention in music and was part of the essence of a musical composition until the early criticisms of orchestration created the notion that timbre was ornament. In other words, it conveyed a point of focus for the listener; timbre guided the listener to what was most important. On the slow movement of Haydn’s Symphony No. 62, Todd writes, “Though the music is monothematic, its orchestration is not monochromatic; indeed, the masterful use of orchestration to define the structure remains one of its most noteworthy features.” The apex of classical orchestration, according to Todd, is found in Haydn’s Paris and London Symphonies and the last four symphonies of Mozart.

The five-part invertible counterpoint of the finale of Mozart’s Symphony No. 41, the “Jupiter” (1788), is clarified through timbral assignment of the material. During the most complex portion of the stretto, mm. 388–400, Mozart delineates the structure by maintaining instrumental pairings throughout. Violins I are paired with the flute; Violins II with Oboe 1; Violas with Oboe 2; Cellos with Bassoon 1; and Contrabasses with Bassoon 2. Mozart maintains these pairings through the various statements of the five themes, so that each contrapuntal voice is assigned a particular timbre combination. Todd

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64 Todd, 205.
is right when he exclaims, “The orchestration, in short, is just as carefully worked out as the counterpoint. It is indeed the summit of classical clarity, of orchestral texture allied with structural rigor.”

In the nineteenth century, romanticism required ever new means of timbral and textural expression. Todd shows that “orchestral texture…evolved from the classical concept of orchestration as a structural device to the romantic approach to orchestration as an expressive coloring agent.” According to Dolan, “For Haydn, the orchestra was a community of instruments with established behaviors, identities, and orders, each with a particular way of interacting with the others.” Put another way, instruments had assigned functions in the music. During the classical era those functions manifested structurally, but as the era of romanticism ushered in, they became expressive and associative. Indeed, in both Haydn’s *The Creation* (1798) and Beethoven’s symphonies, Todd finds an “emancipation of orchestration from classical norms to satisfy the newer demands of expression.”

1.5.1 The Berlioz Treatise

Orchestration treatises are a rich source of prescriptive suggestions for obtaining particular timbral effects. Unfortunately, they do not typically address how to create musical logic or function through timbre. Nevertheless, they provide important insights into traditional orchestration practices, particularly with regard to texture. The most important orchestration treatise of the nineteenth century is Hector Berlioz’s *Grand traité*

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65 Todd, 210.
66 Todd, 199.
d’instrumentation et d’orchestration modernes (1844). The history of its authorship is detailed by Hugh MacDonald in his 2002 translation of the original. Berlioz’s treatise was subsequently revised and updated by Richard Strauss in 1904. According to Berlioz, “The purpose of [his treatise] is first,….to show the range and certain essential details of the mechanism of each instrument, and then to examine the nature of the tone, particular character, and expressive potential of each—a branch of study hitherto greatly neglected—and finally to consider the best known ways of grouping them effectively [emphasis added].” Grouping timbres is the compositional equivalent of auditory scene setting. Effective grouping organizes the music into auditory and textural streams. For Berlioz, “The use of these various sonorities and their application either to color the melody, harmony, or rhythm, or to create effects sui generis, with or without an expressive purpose and independent of any help from the other three great musical resources, this is the art of instrumentation.” In other words, timbre can create a unique effect of its own, independent of pitch and rhythm.

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69 Hector Berlioz, Grand traité d’instrumentation et d’orchestration modernes (Paris: Schonenberger, 1844). Berlioz’s treatise may be considered the culmination of a second wave of orchestration and instrumentation manuals that began to appear in the mid-eighteenth century. This second wave extends the well-established genre of organological treatises established in the sixteenth century. The first wave of treatises includes, among others, Sebastian Virdung, Musica getutsch (1511), Martin Agricola, Musica instrumentalis deudsch (1529, 1545), Adriano Banchieri, Conclusioni nel suono Dell’organo (1609), Michael Praetorius, Syntagma Musicum (1614–20), and Marin Mersenne, Harmonie universelle (1636). The second wave also includes Valentin Rosser, Essai d’instruction à l’usage de ceux qui composent pour la clarinette et la cor (1764) and Louis Joseph Francoeur, Diapason général de tous les instruments à vent (1772). The third wave of orchestral treatises are those written since the ubiquitous adoption of Boehm and similar system woodwinds and valved brass instruments, including the Strauss update of Berlioz.

70 Hugh MacDonald, Berlioz’s Orchestration Treatise: A Translation and Commentary (Cambridge: Cambridge University Press, 2002), xiii–xxxii. (Referred to throughout this dissertation as Berlioz, trans. MacDonald.)

71 Berlioz translated in MacDonald, 6.

72 Berlioz translated in MacDonald, 6.
In the preface to his revised version, Strauss anticipates one of Schoenberg’s goals with *Klangfarbenmelodie* and atonality (pantonality). Strauss writes, “[Wagner] combined the symphonic (polyphonic) technique of composition and orchestration with the rich expressive resources of the dramatic (homophonic) style.”^{73} The synthesis of polyphonic and homophonic styles is the foundation of understanding *Klangfarbenmelodie* and atonality.

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2. Textural Stratification and *Klangfläche* Technique: Creating Planal Analysis

Instrumentation is not there for the sake of sound-effects, but to bring out clearly what one has to say. – Gustav Mahler

Timbral delineation of textural and perceptual layers has long been part of musical language. Through the *Klangfläche*—a compositional technique that lends itself to studying the fundamental relationships of textural layers and how they are presented—this chapter explores functional orchestration in the music of Richard Wagner and Gustav Mahler. Planal analysis arises organically from these considerations. Functional orchestration does not counteract the primacy of pitch; rather, it reinforces and expands musical language. Concepts introduced in this chapter include musical planes and textural layers, timbral lines and progressions, and a new type of texture: compound homophony.

2.1 Timbral Delineation of Texture

Line and process are the essence of music. From connecting individual sound events by creating auditory streams, to organizing streams into textures, to the global scale of imparting form to music, we connect the dots. We find reference points and order what is heard around those references and how the music approaches them. The basis for a timbral approach to music is understanding how the composer crafts the connections between musical tones. According to Goodchild and McAdams, “Orchestral contrasts…implicate segmental grouping processes, in which listeners group, or ‘chunk,’ musical streams into units such as phrases and themes.” The Gestalt principle of

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2 Goodchild and McAdams, “Perceptual Processes in Orchestration.”
similarity demonstrates that elements within a larger array of objects are grouped together perceptually if they are similar to each other (Figure 2.1).

Figure 2.1. Illustration of the Gestalt principle of similarity. Source: Wikimedia Commons.

Figure 2.1 portrays thirty-six equally spaced circles forming a square. Half are shaded light, and half are shaded dark. The principle of similarity influences the brain to perceive six horizontal lines differentiated by their shading. This simple illustration demonstrates many of the principles of auditory scene setting and how we perceive music. The individual circles could represent musical tones; their shadings could be either timbres, fundamental pitches, or any other differentiating characteristic of the discrete tones. Regardless of the manner of differentiation, the tones represented by the differently shaded circles segregate from one another but integrate with their own kind, creating auditory streams. The individual auditory streams combine to create concurrent

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textural streams represented by light and dark; their interaction creates a texture of two different colors. Finally, the textural elements unify to create the musical whole, similar to how we impart the form of a square to the array. We connect the dots across every level of perception. Of course, the auditory perception of music is far more complex than this simple analogy implies. Nonetheless, it is useful in illustrating an auditory phenomenon.

All non-monophonic textures have multiple layers or streams. In homophony, there are typically a melody and accompaniment: clear foreground and background layers. Polyphony, on the other hand, tends toward greater independence of textural layers. Of course, at times, some voices may be emphasized. For example, the soprano and bass voices may be foregrounded over the inner voices. But the musical lines in polyphonic textures are often much more equalized perceptually. In all music with multiple textural layers, however, foreground only gains meaning in relation to background. Like pitch and timbre, foreground and background must coexist. It is a question of perceptual prominence, of attention: which musical material has the composer assigned to the foreground and background and by what musical means.

Timbral delineation of texture has been well-established by Bey and McAdams, Wessel, and others, but it is also musical common sense. Contrasting timbres is one of the most basic ways to create musical difference and is intimately entwined with texture. Many analytical discussions of one address the other as well. In his important theoretical
treatment of texture, Berry included coloration (timbre) as one of its fundamental factors. For him, it “proved impossible to extend this book to the point of including a discrete study of structural functions of coloration (of timbral differences, or orchestration, etc.),” yet he makes repeated calls for its necessity. For others, such as Todd, discussions of texture include penetrating timbral analyses.

Just as the canon of voice leading rules provides a blueprint for creating complex textures in the domain of pitch, orchestration treatises provide some important insights into textural delineations and combinations resulting from timbral differences. As Goodchild and McAdams observe, for several authors of orchestration treatises and textbooks, the most effective approach to making individual parts or lines accessible involves separating textural layers by timbral differentiation. According to Charles Koechlin, there cannot be a total balance of timbres between all of the textural parts; rather, there must be “more subdued values in [the] second planes,” that is, the background must be less prominent. He finds that “this inequality is logical.” Koechlin writes of sound “volumes,” which Frédéric Chiasson et al. explain as extensity or the sound’s perceived size, and “intensities,” which relate to timbral loudness. Indeed, much of Koechlin’s treatise is based on distinguishing the foreground (le premier plan) from the background (le deuxième plan).

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5 Berry, Structural Functions in Music.
6 Berry, 20, 294.
8 Goodchild and McAdams, “Perceptual Processes in Orchestration.”
10 “Cette inégalité est logique.” Koechlin, 3:1.
Nikolay Rimsky-Korsakov’s *Principles of Orchestration* is largely conceived in terms of foreground and background. He only touches on the technical issues of instruments that many other orchestration treatises concentrate on. Instead, he focuses on homophonic melody and accompaniment: “…principally from the standpoint of dramatic music,” referring to Strauss’s famous characterization of dramatic (homophonic) versus symphonic (polyphonic) styles of composition. Rimsky-Korsakov writes, “Whether it be long or short, a simple theme or a melodic phrase, melody should always stand out in relief from the accompaniment.” According to him, delineation of foreground and background is accomplished through artificial or natural means:

…artificially, when the question of tone quality does not come into consideration, and the melody is detached by means of strongly accentuated dynamic shades; naturally, by selection and contrast of timbres, strengthening of resonance by doubling, tripling, etc., or crossing of parts (violoncellos above the violas and violins, clarinets or oboes above the flutes, bassoons above the clarinets, etc.).

Timbre is a main factor delineating foreground from background for Rimsky-Korsakov. For him, registral placement, another timbral aspect, also has an effect on the perception of foreground and background:

Melody planned in the upper parts stands out from the very fact of position alone, and likewise, to a less degree when it is situated in the low register. In the middle of the orchestral range it is not so prominent and the methods referred to above [natural and artificial means of distinction] come into operation. They may also be employed for two-part melody (in thirds or sixths) and for polyphonic writing.

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13 Rimsky-Korsakov, 5.
14 Rimsky-Korsakov, 36.
15 Rimsky-Korsakov, 36.
16 Rimsky-Korsakov, 36.
2.2 *Klangfläche* Technique

One compositional device is obvious for demonstrating the principles of timbral delineation of texture—*Klangfläche* technique. Usually translated as “sound-sheet,” the word’s use in German-language literature goes back at least to Josef Chominský in 1961.\(^1\) However, it was Monika Lichtenfeld who first wrote about it as a specific compositional technique in her 1970 essay, “Zur Technik der Klangflächenkomposition bei Wagner.”\(^2\) Although it has not yet been properly theorized, Lichtenfeld’s primary contention is that a *Klangfläche* “negates the movement [of time]; the event is defined by the lack of motivic-thematic development, which is why the coloristic, and with it the harmonic dimension, can come to dominate.”\(^3\) Fundamental to her formulation of *Klangfläche* is stasis—music standing still in time. She implies that when motivic-thematic development is in control, timbre and harmony are both subjugated by its dominance; but in the case of *Klangflächen*, timbre and harmony both gain independence when theme and motive cease their developmental force. At its earliest stages of formulation, *Klangfläche* theory recognized the importance of timbre. According to Lichtenfeld, “*Klangfläche* composition is not the dissociation, but the synthesis of the different but not separate concepts: in particular the relation of color [timbre] and harmony, but also timbre in relation to other sound properties such as duration, dynamics,

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\(^{3}\) “Die *Klangfläche* jedoch negiert gerade die Bewegung, das Geschehen; sie definiert sich eben aus dem Mangel an motivisch-thematischer Entwicklung, weswegen die koloristische und mit ihr die harmonische Dimension an ihr beherrschend zutage treten kann.” Lichtenfeld, 162.
and register.” In other words, the technique involves the synthesis of timbre and the other parameters of music. Already, we see timbre elevated to a new level in Lichtenfeld’s approach.

*Klangfläche*, translated as “sound-sheet,” did not appear in English-language literature until J. Bradford Robinson’s 1989 translation of Carl Dahlhaus’s Nineteenth-Century Music. Unfortunately, sound-sheet is an imperfect rendering of *Klangfläche*. Lichtenfeld understood the difficulty that the term would create, even in its original tongue. She provides the three usual definitions of *Klang* in German: *Klang* can be the substance of music, the harmonic constellation, or the timbre of the sound. *Fläche*, however, is not as readily understood in a musical sense. In German, it often has to do with a two-dimensional area. According to the *Oxford-Duden German Dictionary*, which even has a callout information box devoted to its use in area measurement, *Fläche* is defined as area, surface, side, face, expanse, or facet. When used in a compound word, it tends to imply a surface or a flatness of some sort. According to Lichtenfeld, “The term [Klangfläche] is so hard to capture by definition, as it does not mean a single sound property nor a precise compositional fact; rather [it means] a plurality of musical features, which are usually analytically separated from each other, especially circumscribed in

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20 “Gegenstand der Untersuchung von Klangflächenkomposition ist dabei nicht die Dissoziation, sondern die Zusammenschau der zwar unterschiedenen, aber nicht getrennten Begriffsmomente: im besonderen die Relation von Farbe und Harmonik, aber auch Klangfarbe in ihrem Verhältnis zu anderen Toneigenschaften wie Dauer, Stärke und Register.” Lichtenfeld, 161.


their context, their relationship to each other.”24 That is, timbre, register, dynamic, duration, and harmony all come together to create the *Klangfläche*.

Also problematic is that in some circles *Klangfläche* has become synonymous with sound-mass music and the technique of micropolyphony. One example is Tom Sora’s recent examination of György Ligeti’s *Atmosphères* (1961).25 Unfortunately, the two uses of the term describe drastically different compositional procedures. As Benjamin R. Levy has pointed out, Ligeti’s micropolyphonic technique in *Atmosphères* can be described as *Bewegungsfarbe*—mobile or moving color—and is best thought of as speed overcoming rhythm to meld with timbre.26 The resulting blur of rhythm generates a sense of stasis that is sometimes thought of as the resemblance between the two techniques. Levy calls Ligeti’s technique in *Atmosphères* “static micropolyphony.”27 Although there appear to be similarities on the surface, Ligeti’s technique is fundamentally different than *Klangfläche*. Micropolyphony relies on speed and densely packed textures, while *Klangflächen* are constructed of background and foreground musical planes in moments of suspended teleological progress.

More descriptive than prescriptive, Lichtenfeld writes abstractly from a phenomenological approach. It fell to Carl Dahlhaus to formulate the first procedural rules for *Klangflächen*. Under his influence, conceptualizing the technique shifted to a

27 Levy, ?.
harmonic model. Dahlhaus’s formulation of a Klangfläche is more restrictive than Lichtenfeld’s. He argues for a negatively framed understanding of the technique based primarily on non-chord tones and non-teleological progressions. Shaped by the Hegelian dialectic, his view requires negation. Undoubtedly familiar to many, Dahlhaus’s discussion of Klangflächen in a passage from Nineteenth-Century Music is routinely quoted in scholarship on the natural world, pastoral, musical space, and similar tropes.28

Dahlhaus formulates three rules for Klangflächen. First, an exemption from teleological progression. This means that advancement toward the completion of the form or musical goal is halted. According to him, “A musical depiction of nature is almost always defined negatively, by being excluded from the imperative for organic development.”29 For Dahlhaus,

The [Klangfläche] conveys a musical landscape because it is exempted both from the principle of teleological progression and from the rule of musical texture which nineteenth-century musical theorists referred to … as ‘thematic-motivic manipulation,’ taking Beethoven’s development sections as their locus classicus.30

Simply put, teleological music is goal oriented. Whether the goal is the reprise of an earlier theme, an authentic cadence in a particular key, or the return of a timbre or rhythmic element—any of which could demarcate form—music seeks its goal through progression, through a process in time. Music that is exempted from teleological progression is in a suspended or static state.

Second is that thematic-motivic development is disallowed—better reframed as motivic and harmonic stasis. Dahlhaus explains, “Regardless of whether the scene is a

29 Dahlhaus, 307.
30 Dahlhaus, 307.
bucolic idyll or a thunderstorm, the music remains riveted to the spot motivically and harmonically, no matter how gentle or violent its rhythmic motion.” Finally, Dahlhaus requires an unresolved non-chord tone. According to him, “The call of the forest bird, in the ‘Forest Murmurs’ from Siegfried, sounds like an evocation of nature not merely because it is a melodic rendering of actual birdcalls but, in almost equal measure, for the negative reason that its unresolved sixth stands outside the harmonic logic.” Without the unresolved non-chord tone, Dahlhaus surmises that a Klangfläche would “merely sound dull and lifeless.”

As can be seen, Dahlhaus’s rules are all negatively framed: non-teleological or no formal progression, thematic and motivic stasis or no development, and an unresolved non-chord tone or no resolution. Viewed through Dahlhaus’s Hegelian lens, these rules are the negation of form, thematic development, and the tension-relaxation continuum. However, a positive formulation of Klangfläche technique is far more revealing.

2.3 “The Forest Murmurs” from Wagner’s Siegfried

Both Lichtenfeld and Dahlhaus point to “The Forest Murmurs” (Waldweben), from Wagner’s Siegfried as the quintessential example of Klangfläche, but neither author offers a detailed analysis. Nearly all of the stand-alone orchestral suites extracted from Wagner’s music dramas rely on Klangfläche technique. Some of the most famous examples of Klangflächen include the prelude from Das Rheingold, “Magic Fire Music” from Die Walküre, and the locus classicus of Klangflächen, “The Forest Murmurs” from Siegfried. The notable exception, “Ride of Valkyries,” is also distinguished by being not

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31 Dahlhaus, 307.
33 Dahlhaus, 307.
primarily an expression of nature. Indeed, according to Dahlhaus, “Almost all the outstanding musical expressions of nature” depend on the _Klangfläche_, “outwardly static but inwardly in constant motion.”

Considering how Wagner constructs and navigates the _Klangflächen_ in “The Forest Murmurs” provides a lesson in teleology, texture, and timbre. In the concert version of _Waldweben_, arranged by Herman Zumpe in 1871, there are two _Klangflächen_ separated by a seven-measure transition. As with most of the stand-alone orchestral suites, the arrangement removes some texted sections of music and includes newly composed transitions between sections from Wagner’s scenes. However, in the portions of music discussed below, Zumpe stayed true to Wagner’s score. Table 2.1 shows the correspondences between the original and measure numbers of the arrangement.

Table 2.1. Correspondence of _Klangfläche_ sections in the original and arranged versions of “The Forest Murmurs”

<table>
<thead>
<tr>
<th>Section</th>
<th>Wagner’s <em>Siegfried</em> Edition Eulenburg No. 909, (London: Eulenburg, n.d.)</th>
<th>Zumpe’s arrangement of Wagner’s <em>Waldweben</em> (Mainz: Schott, 1871)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Klangfläche</em> 1</td>
<td>pp. 571–75</td>
<td>mm. 82–106</td>
<td>mm. 105–6 correspond to p. 575, bars 4–5; Zumpe doubles clarinet with oboe in mm. 105–6</td>
</tr>
<tr>
<td>Transition</td>
<td>580–82</td>
<td>107–13</td>
<td>Differences discussed below</td>
</tr>
<tr>
<td><em>Klangfläche</em> 2</td>
<td>583–84</td>
<td>114–19</td>
<td>Through p. 584, bar 2 m. 120 combines elements of p. 584, bar 3 and p. 626, bar 1</td>
</tr>
<tr>
<td></td>
<td>584, 626–33</td>
<td>120–47</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>147–57</td>
<td>Newly composed</td>
</tr>
</tbody>
</table>

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34 Dahlhaus, 307.
2.3.1 Waldweben Klangfläche 1 Background

Temporarily disregarding the birdcalls happening within the forest allows us to evaluate Wagner’s background dendroid environment (Example 2.1). The first Klangfläche begins in m. 82 with the strings split between tonic triad pedal tones heavily emphasizing E and the familiar undulating figures of the arboreal background. Oscillations by third or fourth are firmly rooted in the members of the tonic and subdominant triads, while non-chord tones are restricted to stepwise movement. Horns and bassoons join in filling out the pedal. Above the tonic pedal, the relatively slow tremolo alternates between members of I and IV. The F♯ passing and neighbor tones disguise IV with an added third beneath it, providing a veneer of ii42. The music is anchored by the tonic and a sub-dominant IV, not a pre-dominant IV. There is no progression beyond the alternation back and forth. The whole of the first Klangfläche, mm. 82–106, is functionally a I-IV oscillation over a tonic pedal. The ascending and descending sequences that provide a sense of trajectory, without which the background music might stall, result in various passing sonorities that comfortably settle into the I-IV oscillation and do not provide a compulsion for any other sonority. This motion and variation, however, is contained within the harmonic stasis. The background music does not go anywhere; it is standing on the tonic. Harmonic immobility is maintained, and teleological progression is avoided.
2.3.2 *Waldweben* Transition Background

After twenty-five bars of non-teleological oscillation between tonic and subdominant, the transition rapidly accomplishes a cadential goal before slipping back into the stasis of the second *Klangfläche*. Playing on the pretense provided by the F# passing and neighbor tones throughout the previous section, the transition is expertly prepared. In Zumpe’s arrangement, *Klangfläche* 1 ends in m. 107 when the basses move up to F#, signaling the harmonic *progression*. Until this point, the F#s have been simple nonfunctional tones, but the ii⁷ in m. 107 is functional; it progresses forward functionally. In *Siegfried*, Wagner arrives at the F# in the bass differently (p. 580). There, he transitions through A major in the texted section beginning “Ein zankender Zwerg…” (pp. 578–80). Although the accompanimental figures differ slightly between *Waldweben* (mm. 107–13) and the corresponding passage in *Siegfried* (pp. 580–82), the underlying harmony in the transition remains unchanged between the two works. Wagner offers ii⁷–v-viiø7–I, a somewhat weaker statement than ii⁷–V–I, indicating a transitional cadence rather than a concluding one. The strong cadential motion of a dominant is avoided by the flattening of D# to D♭ in mm. 110–11. Without the leading tone, the minor v loses much of its cadential force and instead progresses to viiø7. The tonic arrival is further weakened by retaining the D♭ into the beginning of the second *Klangfläche*.

2.3.3 *Waldweben Klangfläche 2* Background

Restarting the arborescent oscillation in the textural background, the second *Klangfläche* begins immediately in m. 114. This time, the horns provide the lowest pedal

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35 Differences in the foreground music are discussed below.
tone which serves as the root of the *Klangfläche*. Vestiges of the D♯ remain through m. 117, where it serves as the root of the IV/IV triad oscillating to IV. The D♯ ascends chromatically in the following measure, resolving into E♭. Once the second *Klangfläche* is constructed, it continues much the same as the first except that mm. 120–24 are over a dominant pedal, returning to a tonic pedal m. 125 through the end of the section at m. 157.

To make his arrangement, Zumpe expunged a large portion of texted music, including the battle scene between Siegfried and Fafner (pp. 584–625). The seam between the two separated portions of *Siegfried* occurs in mm. 119–20 of *Waldweben*. The elements of m. 120 are all present in p. 626, bar 1, but the arrangement retains the voice leading characteristics of from p. 584, bars 2–3. The D♯ at end of violin run in mm. 119–20 and the B♭ in the cellos ease the union of the passages. The distribution of the B♭7 chord in mm. 136–37 (p. 630, bars 2–3) differs between the two versions. Other than the downbeat continuation of the Woodbird’s line in the foreground, m. 147 through the end of *Klangfläche* 2 in m. 157 are newly composed. The final measure of the second *Klangfläche* turns toward E minor, preparing the next formal segment of the orchestral suite.

### 2.3.4 *Waldweben* Foreground

So, where do the birdcalls in the flute, oboe, and clarinets fit in this analytic example? They do not belong to the undulating background scenery of the forest. They unfold in a distinct musical plane of activity layered upon that background.

*Musical planes* refer to the perceptual foreground, middleground (if there is one), and background in music. These are not the hierarchical structural layers of Schenkerian
analysis. Musical planes are the perceptual layers of musical texture. They are made up of *textural layers*. Layers can move between planes; they can advance to the fore or recede to the back. A planal understanding of *Klangfläche* is not unprecedented. Indeed, for Lichtenfeld, the technique connotes a geometric construction. For her, “…in relation to a distinctly profiled motivic environment, [*Klangfläche*] evokes an inarticulate surface [*Fläche*], be it an autonomous entity or a background on which figuration emerges.”36 Recognizing that music unfolds in the distinct planes of musical background and foreground is essential for understanding *Klangflächen*, and for developing planal analysis.

The flutes, oboes, and clarinets are entities discrete from the background scenery. Wagner superimposes sharply contrasting timbres in staccato rhythms upon the congealed mass of slurred tremolando and pedal points in the strings. Horns and bassoons assist the strings in mm. 82–86 but fall away at the first arpeggiated birdcall in the flutes. All of the background material coheres into a single textural layer through timbral and rhythmic consistency, but the “other” sonorities stand out. Their timbres and rhythmic profiles perceptually segregate them from the background, but also help them integrate into a single textural layer. Although the birdcalls do cohere into a single textural layer, they remain independent auditory streams. Strengthening their individuality is their metrical independence. Freely navigating ¾ and 9/8 from m. 82, beginning in m. 103, they are in 4/4 while the background retains its familiar 9/8 figuration. Each call is a distinct event—they are individual birds in the forest.

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The birdcalls are not a traditional melody accompanied by a supporting harmony, yet they are foregrounded over a complementary textural layer. There is no tonal reason they should stand apart. They arpeggiate the same I and IV chords present in the background, and some pitch-based analytic approaches may struggle to find their purpose. A Schenkerian approach, with its goal of identifying deep structure, may even consider them structural foreground material and reduce them out by the structural middleground. Yet, they are absolutely vital to the music and completely distinct from the undulating textural layer. The point of the music is two simultaneous planes—the forest with the birds.

The birdcall timbres only become one organic structure with the rest of the orchestra when the two musical planes converge in the transition (mm. 107–13), before subsequently bifurcating again in the second Klangfläche. The textural shift is equally important as the harmonic progression is in communicating the transitional cadence between the Klangflächen. As the background material comes temporarily to the fore, the horns borrow foreground melodic material from the birdcalls in mm. 107–9. There is a textural crossfade effect between the horns and the previously foregrounded timbres of the oboes and clarinets. The latter instruments reciprocate the textural trade by blending with the strings in an articulation closely related to the background pattern in mm. 110–11. The textural layers shifting between musical planes lasts only a brief moment, however. The second Klangfläche is initiated in m. 114 with the renewed separation of textural layers into the previously established foreground and background planes. The strings reengage their flora-invoking undulations, but this time, the pedals are assigned only to the horns and bassoons, recalling two of the timbres from mm. 82–86. The aviary
upper woodwinds emerge once again in a discrete foreground layer, here, led by the clarinet. The transition between the two *Klangflächen* illustrates the principle of musical planes and is instructive of the importance Wagner placed on timbral delineation of textural layers. Example 2.2 shows a textural analysis illustrating the interactions between the foreground and background textural layers.

Example 2.2. See Appendix A for: Textural analysis, Richard Wagner, *Waldweben*, arr. Zumpe, mm. 82–118.

There are some notable differences in foreground music between the original and the orchestral suite. Zumpe replaces the voice of the Woodbird (*Vogelst.* in mm. 139–47 (p. 630, bar 4 through the downbeat of p. 633, bar 2) with flute, oboe, clarinet, and glockenspiel in octave doublings. He also employs a slightly different rhythmic pattern in m. 142 (p. 631, bar 3): Zumpe renders the Woodbird’s triplet on the first beat as eighth-dotted eighth-sixteenth and the two eighths on the third beat as eighth-sixteenth-sixteenth. Also, the A₃ in the oboe and clarinet on the downbeat of m. 107 is transposed up one octave for continuity in the arrangement.

Through investigating “The Forest Murmurs,” we see that a *Klangfläche* emerges when the teleological progression of the music is suspended, and a second musical plane occurs superimposed in the foreground on the teleologically paused background plane. The background is an accompaniment to the foreground’s activity, yet each textural layer maintains its independence, resulting in a texture between *homophony and polyphony*.

### 2.4 Gustav Mahler’s First Symphony, mm. 1–63

Using *Klangfläche* technique, Gustav Mahler elevates timbre to a syntactic musical parameter alongside pitch in his opening symphonic statement. The foreground
music of the introduction to his First Symphony (1888–1910\textsuperscript{37}) actively develops through timbral manipulation while its background is relatively static. Mahler’s use of functional orchestration does not counteract the primacy of pitch in his music. Rather, it reinforces and extends his musical language, helping him communicate his musical thoughts more effectively.

Traditional harmonic analysis of the introduction to Mahler’s First unsurprisingly reveals a parallel minor to major modulation typical of symphonic slow introductions. The manner of that modulation, however, is anything but traditional. The music does not proceed from D minor to D major through harmonic progression, but rather through *timbral progression*. Analogous to harmonic progression, timbral progression is the directional process of moving from timbre to timbre in music. Not to be confused with timbral modulation (discussed in Ch. 4), here, the tonal modulation of Mahler’s music is accomplished through a timbral process. To be sure, there are pitch processes at work as well, but Mahler’s acute timbral awareness and functional orchestration elevates sound color to new heights in tonal music. Considering the background and foreground textural planes of the First’s *Klangflächen* opening allows for a clear understanding of timbre’s role in textural stratification.

The wash of harmonically ambiguous and rhythmically torpid pedal points in the opening measures establishes the background plane of the *Klangflächen*. Mahler’s use of functional timbre is then layered upon this background. As with *Waldwehen*, analytical discussion of the foreground and background elements of Mahler’s first will be separated

\textsuperscript{37} The final version of the First was largely complete after its first publication in 1899 (Vienna: Josef Weinberger), but Mahler continued revisions, including after the performance in New York on December 16, 1909, as discussed below.
as the musical planes dictate. Example 2.3 shows a textural analysis of mm. 1–63 of Mahler’s First; it serves as the analytical example for the remainder of this discussion.

Example 2.3. See Appendix A for: Textural analysis, Gustav Mahler’s Symphony No. 1, mm. 1–63.

2.4.1 Textural Stratification: The Background Plane

From the opening measure, Mahler expresses panoramic scenes of earth and atmosphere through the creation of registral space. Well-known as an evocation of nature, his music begins with the pitch class A₈ spread across seven octaves. Natalie Bauer-Lechner reports, “With the first note, the long-sustained A in harmonics, we are in the midst of nature: in the forest, where the sunshine of the summer day quivers and glimmers through the branches.”

Apropos of this timbral discussion, the A₈ reinforced across the strings evokes the natural phenomenon of a fundamental pitch with its harmonics: the second, fourth, eighth, etc.partials of the harmonic series are the same pitch class as the fundamental pitch. The A₈ in the contrabasses is the only pitch not to be played in harmonics. Mahler’s score indication states, “The lowest A must be played very clearly although it is played pp.” The cellos and basses each play divided into 3 parts, while the violins and violas play as unified sections. The divided sections play the harmonics A₄₂ up to A₄₅. The A₄₆ in the violas is doubled with one-third of the cello forces. Finally, the violins’ harmonic, sounding A₄₇, is doubled between the two sections, strengthening its numbers and effect above the other harmonic pitches in the opening measures. Mahler was certainly aware of the overtone series through his

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38 NBLE, 157 (NBL2, 173).
39 All partials in the exponential series of the ratio of the octave (2:1)—that is, all the powers of 2—result in ascending octave iterations of the fundamental frequency.
familiarity with Helmholtz’s *On the Sensations of Tone*, and perhaps other works on the subject as well. As Herta Blaukopf notes, according to Anna Mahler, her father had all of Helmholtz’s works in his collection.\(^4\) Of course, without further evidence supporting Helmholtz’s influence or that of the harmonic series, neither can be claimed as part of Mahler’s generative process. Nonetheless, the opening measures are a noteworthy musical expression of the phenomenon of sound production in the natural world.

Not only the mimicking of a fundamental with its partials evokes nature in Mahler’s symphony; the opening of registral space also expresses the physical world by establishing its boundaries and creating a space within those limits for actions to take place. This notion is not an alternate programmatic reading; it is one purpose of a *Klangfläche*—to provide a static background plane as a natural backdrop for foreground activity. The fundamental A\(^\#\)1 in the basses and the reinforced harmonic A\(^\#\)7 in the violins are the world’s foundation and upper atmosphere. These boundaries are filled in with the rest of the strings, creating a fuller orchestral sound and lending a more ethereal timbral quality, further reinforcing the composition of a physical world by creating the “shimmering and glimmering” air between the ground and upper limits of the atmosphere.\(^4\) Each entrance of the descending fourths in mm. 3, 5, and 7—figurations that emerge as part of the background plane of music—occurs in a different octave, a musical expression of the different places within the created space. When the bassoons and flutes join the pedal points on A\(^\#\) in sustaining their B\(^b\)s in mm. 9 ff., they only

\(^4\) NBLE, 160 (NBL2, 176).
articulate the space of two octaves within the seven octaves of the pitch class A₉. Their registral placement suggests their presence within the space outlined by the strings.

The descending perfect fourths in mm. 3 and 5 support A₉ as a possible tonal area while introducing the interval as a motivic element. The fourth is reinforced starting in m. 7, hinting at D₄ as a tonal goal until the line continues to B♭ by descending third. The A♭-B♭ minor-second dyad remains obscure in background, minimizing the potential dissonance. Lending weight to the tonal ambiguity and reminiscent of the transition in Wagner’s Waldweben, Mahler carefully avoids C♯ in order to maintain the indeterminate quality of the introduction. Eventually, he resolves B♭ up chromatically through B♮ to C♮ as part of a minor v in mm. 13–15.42 This move potentially tonicizes A minor in m. 15: the lack of cadential reference, however, leaves the impression that A♭ is still an unclear 5 centered on an ambiguous D♭ root. Only through retrospective reinterpretation does it become clear that the static plane of the introduction is a prolongation of V. At the moment of unfolding, the background music projects only a nebulous D♭-A♭ relationship.

Throughout the introduction, the background music is well-integrated perceptually as a textural stream. The overriding pedal tones, harmonic stasis, and slow rhythmic pace of the descending fourths result in a static background plane. Only after the timpani roll punctuating a textural change in m. 47, does the harmonic stasis turn to a pre-modulatory sequence. Mahler now offers the first instance of harmonic progression in the background plane but does not complete the process of modulation yet. The effect of

42 Once the textural foreground is considered, it emerges that the B♭ in the bassoons (mm. 9–15) is sustained in order to assist in the resolution of the B♭ major triad in the clarinets and the temporary convergence of the musical planes, discussed below.
the textural change at the beginning of the sequence clearly marks it as a transitional passage. The imitative entries quicken in pace during the sequence, typical of pre-cadential material. At the moment of the sequence’s unfolding, it seems the Klangfläche has broken down. However, despite increased rhythmic activity, the sequence is still part of the background plane. Rather than building momentum to the cadence, the harmonic progression stalls, resuming the dominant prolongation of the Klangfläche’s textural background. There are subtle differences though. The harmonic A₆ backdrop is thinned as the sequence approaches, yet Mahler brings back A₆7 to remind us of its fullest span (mm. 44–46). Then, during the sequence, the original string voices continue to drop out until the wash of inert harmonics has morphed into a single octave span in the horns—A₆3 and A₆4 (mm. 57–62). The flute echoes the descending fourths in the clarinet but also joins with the horns’ A₆s by sustaining E₇4 (mm. 57–60). Without the leading tone of the dominant chord, the musical tones—the totality of the timbres including the pitches they contain—sounding the perfect fifth create an emergent sonority. After fifty-six measures of constant A₆, the E₇ behaves like another of the A₆’s partial tones above the fundamental, even after the lone quarter-rest break in m. 57. The flute colors the horn, creating a new version of the well-established background. Through m. 60, the separate textural planes of the Klangfläche still hold sway, and D major has not yet arrived.

2.4.2 Textural Stratification: The Foreground Plane

The foreground plane first surfaces in mm. 9–12 with the “horn call” in the clarinet, and continues with the hunting gestures in the off-stage trumpets at mm. 22ff., 36ff., and 44ff., cantilenas in the horns at mm. 32ff. and 39ff., and clarinet birdcalls in mm. 30ff., 45ff., as well as their transitional echoes in mm. 57ff. All of these musical
events occur in a developmental foreground plane that progresses to the arrival of the D major exposition. And all of these musical events are made up of both pitch and timbre; both of which create processes that bring the music to its teleological goal. The foreground events segregate from the background following the Gestalt principles of similarity, good continuation, and common fate—more specifically, by their lack of adherence to these principles. In timbral terms: the foreground timbres are dissimilar to the those of the background, there are abrupt timbral discontinuities between the textural layers, and the foreground timbres have markedly different metric qualities than the background.

A striking feature of the introduction is the use of separate tempos for music taking place in the different textural planes, a clear signal of their otherness. Each of the five times Più mosso is instructed in the introduction, a musical action is taking place in the foreground: either the hunting calls or the cuckoo calls. Alleviating any doubt that the clarinet birdcalls operate on a different musical plane than the background music is the instruction to play “without consideration of Tempo I” (ohne Rücksicht auf das Tempo I). Mahler’s use of different tempos again recalls Wagner, this time, his use of $\frac{4}{4}$ superimposed on triple meter in “The Forest Murmurs.” Aside from their programmatic significance, one of the birdcalls’ other purposes is to reinforce a separate timbral plane occurring in a different tempo. Worthy of note, the clarion clarinet register of the birdcalls is markedly different than the chalumeau register of the hunting gesture, marking their independence as distinct foreground events occurring separately within the background setting of the forest.
In the foreground music of the introduction, Mahler manipulates and transcends associative uses of timbre to create moments of functionally emancipated timbre. Constantin Floros describes Mahler as “a follower of the old doctrine of mimesis.”43 He relies on Bauer-Lechner’s account of Mahler saying he “…draws all material and form from the surrounding world … [and] one’s relationship with nature … provide[s] the basis for an artistic style.”44 At times, this approach may create mimesis; but in other instances, it informs Mahler’s musical imagination, and the sounds of nature may infiltrate without a strictly programmatic meaning. Friction between timbre used for dramatic versus structural purposes must be reconsidered in light of timbral function, not as adversarial forces, but rather as complementary forces. This reexamination extends to programmatic musical statements as well. Whether it is the timbral content or the pitch content that elicits the programmatic response, simply because a passage is programmatic does not preclude it from functioning structurally. Such is the case with the Jagdmusik (Hunt music); it implies programmatic content, but also has harmonic and timbral functions in the musical process.

The clarinets (including bass clarinet) are the first to offer the hunting signal in mm. 9ff. Regardless of the timbre the horn call is presented in, it is an unmistakable melodic gesture. Mahler makes use of a timbral affinity, a relationship between instruments with timbral characteristics suggesting similarity or facilitating blend—pianissimo clarinets in their lower register bear resemblance to muffled horns in the distance. Empirical studies have shown that even though timbre has emergent qualities

44 Floros, 22–23 and NBLE, 96–97 (NBL2, 95).
and is exceedingly complex to acoustically quantify, some similarities and differences can be demonstrated among certain standard orchestral instruments.\textsuperscript{45} The horn and clarinet share some qualities and can produce an affinity. Furthermore, in symphonic tradition, the horn has a much closer association with the four principal woodwinds (flute, oboe, clarinet, bassoon) present in the standard double wind orchestra of the Classical period than it does with the militaristic trumpet or the ecclesiastic (sometimes infernal) trombone. Of course, the horn’s timbral characteristics generally have more affinity with other brass instruments (of which Mahler also takes advantage). Measurable timbral relationships notwithstanding, the ubiquitous melodic figure of the horn call elicits instant recognition even though it is in a timbral substitute. *Timbral substitution* occurs when a passage is given in a timbre other than that prepared or expected. Mahler makes use of the horn’s chameleon-like qualities and the pervasiveness of the hunting gesture to establish the clarinets as “horns” in the (very far) distance.

The B♭ major triad unfolded in the clarinet’s hunting call raises two plausible tonal interpretations. First, it could be a neighbor chord to the sonority rooted in A♯. As such, the B♭ major triad represents the non-chord tone required of *Klangfläche* technique. Second, B♭ major could be a submediant VI\textsuperscript{5} substituting for a D major tonic triad. In this case, it is a borrowed VI chord from the parallel key of D minor. Just as the clarinets substitute for horns, the B♭ major could represent the same tonality as the D major trumpet calls. The major sonority and the mutual D♯ impart the shared characteristics that make this reading plausible.\textsuperscript{46} Regardless of its tonal interpretation, the chord in the

\textsuperscript{45} For example, Elliott, Hamilton, and Theunissen (2013).

\textsuperscript{46} A third, less likely, possibility is that B♭ major functions as the Neapolitan of V. As a secondary Neapolitan, the B♭ major chord makes a predominant promise to progress to a secondary dominant: the E
clarinets joins with the bassoons’ B♭s in the background to resolve from B♭ major through B♭ diminished to A♭ minor in mm. 13–15, momentarily tonicizing A minor. In either case, as a neighbor chord or a lowered-submediant substitution for the tonic, the B♭ major chord’s pitches harmonically converge into the background plane. The harmonic process momentarily causes a convergence within the pitch domain of the musical planes, but perceptually, the Klangfläche is still in full effect. The separate textural planes are readily identified when the trumpets take up the horn call in m. 22. The Gestalt principle of closure is at work here: the foreground events sound intermittently over a continuous background. The timbres—that along with pitch are an equal part of the musical tones that sound the B♭ major chord in the clarinets—also progress forward. The resumption of the hunting call creates the link between the timbres and the continuation of the foreground plane.

After the clarinets’ horn call, the off-stage trumpets take over the hunting signal in mm. 22ff. The trumpet calls are directly related to the clarinets’ call through pitch, rhythm, and gesture; all of which help to establish a link between clarinet and trumpet timbres. The off-stage trumpets unfold D major triads, but they do not perceptually integrate with the background music; they introduce D major physically in the distance. As with the clarinets, the off-stage hunting calls are part of a distinct perceptual stream and textural layer. They are distinguished from the background by their timbres and rhythmic characteristics—onset asynchronicity with the background, as well as having a different tempo and perceived tactus. Indeed, as Stephen E. Hefling writes, “Sounds of major V of V. However, E major does not make an appearance in any sort of progression from the B♭ major chord. Even though E♭ is certainly a prominent pitch class, this interpretation is problematic because it relies on tonal compulsions that remain unsatisfied.
distant hunting parties (first in the clarinets, then in offstage trumpets) and the call of a
cuckoo gradually establish the sustained A\textsubscript{5} as a dominant pedal.\textsuperscript{47} But the D sonority
required to establish the dominant function of A\textsubscript{5} is maintained in the separate perceptual
and textural layer.

The horn cantilenas at mm. 32–36 and 40–44 are a bridge between the foreground
and background elements. Timbrally, the horn bears an obvious affinity to its brass
instrument cousin, while the connection to the clarinet is strongly established through the
hunting gesture. In the pitch domain, the horn cantilenas unfold D major triads heard as
dominant-function \textsuperscript{6}4 chords over the persistent pedal tones in the background. The horn
cantilenas’ slow rhythmic activity and occurrence in \textit{Tempo I} connects them to the
background. But their timbral characteristics and association with the trumpet and
clarinet make them stand out in the perceptual foreground. Here, timbral similarity with
the trumpets and dissimilarity with the background overrides tempo and harmony to bring
the horn cantilenas to the fore. They contribute to the prolongation of V but remain
distinct from the pedal tones, bridging the textural layers. They mitigate the foreground D
major’s conflict with the dominant pedal, delaying the soon-to-be-tonic’s arrival and
temporarily disrupting tonal syntax. Mahler does not allow tonal modulation yet.

The well-trodden field of Mahler sketch studies can enlighten us about the
importance Mahler placed on the timbral delineation of texture and timbre’s role in
bringing about teleological progress in the introduction of the First. From its premiere in
Budapest in 1889 to its publication a full decade later (and even after subsequent

performances), Mahler scrupulously re-orchestrated the introduction multiple times.

According to Reinhold Kubik and Stephen E. Hefling, “There are three versions of Gustav Mahler’s Symphony No. 1.”48 The first version is that which was performed at the Budapest concert of November 20, 1889. The second version had its premiere performance October 27, 1893 in Hamburg. The final version (Fassung letzter Hand) was first performed in Berlin on March 16, 1896. The composer did, however, continue to make adjustments up through the last revision of 1910.49 Mahler referred to some of his changes in his various interactions with friends and colleagues. For instance, according to Bauer-Lechner, the strings originally were not played in harmonics. She writes that after the premier in Budapest, Mahler stated:

> When I heard the A in all registers in Budapest, it sounded far too substantial for the shimmering and glimmering of the air that I had in mind. It then occurred to me that I could have all the strings play harmonics (from the violins at the top, down to the basses, which also possess harmonics). Now I had the effect I wanted.50

Of course, the A₈ in the basses ultimately was not given over to harmonics.

More telling than the changes to the opening A₈, are the changes Mahler made to the foreground elements. In his study of the 1889 score, Stephen McClatchie points out that the clarinet horn call was originally scored for four horns with the instruction, “Horns, played loudly at such a distance—if possible, placed outside the hall—that they may be heard only ppp by the public.”51 The same instruction is provided to the trumpets

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49 *Titan*, NKG, XXXVII.

50 NBLE, 160 (NBL2, 176).

in mm. 22–26, but no indication for when either group returns to the orchestra is written.\footnote{McClatchie, 112.} In Kubik and Hefling’s NKG edition of the 1893 version, the timbral assignments and off-stage instructions are much the same allowing for the following difference in instrumentation: the 1889 version of the symphony is scored with four horns and two trumpets; but in the 1893 version, Mahler’s orchestra includes seven horns and four trumpets. In the second version, Horns 5–7 and Trumpets 1–2 all participate “in the far distance” (\textit{in weiter Entfernung aufgestellt}). Once the sequence of events is completed in m. 47, they take their seats in the orchestra. Table 2.2 details the location and timbral distribution of horn calls and cantilenas in the three versions of the symphony. In both the earlier versions, the hunting gestures start as horn calls in the so-named timbre. The horns are joined by the trumpet for the call’s second iteration, providing a timbral transition for the final two calls in the trumpets alone. Mahler originally conceived the progression of horn calls and cantilenas as music physically outside the orchestra. What is most remarkable, though, is that his final authorized version of the score exhibits even more refined timbral control.
|-------------|------------|------------------------|----------------|-----------------|
| Horn Call 1 | 9          | Clarinets with bass clarinet  
|             |            | Horns (3)               | Horns (3) Horns (4) Hörner stark geblaßen in so weiter Entfernung aufgestellt womöglich außerhalb des Salles aufgestellt daß sie vom Publikum nur ppp gehört werden können |
| Horn Call 2 | 22         | Trumpets (3)            | Horns (2), Trumpets (2)  
|             |            | [The same as above]     | [The same as above]     |
| Cantilena 1 | 32         | Horns (3)               | Horns (3) Open          | Horns (4)  
|             |            | [The same is implied]   | [The same is implied]   |
| Horn Call 3 | 36         | Trumpets (2)            | Trumpets (2)            | Trumpets (2)  
|             |            | [The same is implied]   | [The same is implied]   |
| Cantilena 2 | 39         | Horns (2)               | Horns (2) [Implied: w/ mute, ]  
|             |            | [Implied: Open]         | [The same is implied]   |
| Horn Call 4 | 44         | Trumpets (2)            | Trumpets (2)            | Trumpets (2)  
|             |            | [The same is implied]   | [The same is implied]   |


In the final version (1896–1910), all three trumpeters begin the symphony off stage. Marked at m. 11 (for the entrance at m. 22), the score instruction indicates that the first and second trumpeters (trumpets in F) are “a very far distance away” (in sehr weiter Entfernung aufgestellt). When the trumpets in F are joined by the third trumpet in B♭, it is marked “in the distance” (in der Ferne). Likely, all three trumpeters are in the same physical position—very far away—to facilitate intonation and timing. The entrances of the trumpets in F in mm. 36 and 44 (the trumpet in B♭ no longer sounds), are both marked
only “a far distance away” (*in weiter Entfernung aufgestellt*), raising the question as to whether the trumpeters, and the timbres they produce, come closer to the orchestra.\(^{53}\)

The different locations implied by the score markings are most likely an inadvertent error.\(^{54}\) The most telling evidence is the engraver’s copy (*Stichvorlage*) of 1894, with entries by Ferdinand Weidig, Mahler’s copyist in Hamburg.\(^{55}\) On page 4 of the score, for the first entrance of the trumpets in mm. 22ff., Weidig wrote vertically in the margin: “*in sehr weiter Entfernung aufgestellt*.” On page 5, at the beginning of the trumpet system, he wrote: “*in weiter Entfernung*.” The trumpets sound continuously over the page break. Certainly, the trumpets will not come closer while playing the call: therefore, the shortened note on page 5 is surely an abbreviation. Heffling suggests, “By the time the score appeared in print, ‘*in der Ferne*’ had crept into the 3\(^{rd}\) trumpet entrance at bar 23: somebody (editor, engraver, Mahler?) felt that this cue was needed.”\(^{56}\) On pages 7 and 8, the same abbreviated instruction—“*in weiter Entfernung*”—appears vertically before the trumpet systems, corresponding to their entrances at mm. 36 and 44. There is also a blank staff above and below the trumpet systems on all pages they are employed “in the distance,” further reinforcing their separation from the rest of the orchestra. From the 1894 engraver’s copy, it seems that all the trumpets are together, in one location, without coming closer until they are instructed to take their seats in the orchestra after their completion in m. 47.

\(^{53}\) Regardless of the score indications, actual performance practice likely varies greatly.

\(^{54}\) I thank Stephen E. Heffling for pointing out the discrepancies between versions, discussing the possibilities, and sharing the relevant pages of the *Stichvorlage* with me.


Only the third and final version of the symphony makes use of the timbral affinity between the horn and clarinet to create the effect of even more “distance” from the orchestra. By transferring the first horn call to the clarinets, and saving the off-stage effect for the trumpets, Mahler creates the first incremental level of distance, perceived as “farther away” than the off-stage trumpets (Block 1 in Example 2.4). The off-stage trumpets bring the horn gesture closer to its timbral home (the horns) in the orchestra; but they are still “in the distance” (Block 2 in Ex. 2.4). Then, the off-stage trumpets combine with the horn cantilenas that precede and elide with them to create a third stage of the timbral progression (Block 3 in Ex. 2.4). The horn cantilenas—instruments seated within the orchestra—in mm. 32–36 and 39–44 overlap with the third (mm. 36–38) and fourth (mm. 44–47) iterations of the hunting calls: Mahler brings the sound “into” the orchestra, connecting the hunting gesture to its more common horn timbre in the process. Because of their relative proximity and similarity of pitch, rhythmic, and timbral content, the two horn cantilena/trumpet call statements (Blocks 3a–b in Ex. 2.4) stream together as a single unit in the timbral progression.
Example 2.4. Foreground timbral progression in the introduction to Mahler's First.
There is a timbral intensification simulating physical approach in the progression from pianissimo clarinets to off-stage trumpets to off-stage trumpets with horns. Further enhancing the timbral intensification, the compositional pace quickens with each of the first three entries in the timbral progression: six-and-three-quarters bars of rest (mm. 15–21) separate the clarinet call from the first off-stage trumpet call; four-and-three-quarters bars (mm. 27–31) separate the first off-stage trumpet call and the first horn cantilena (mm. 32–36), but only three-quarters of a measure between the first horn cantilena/trumpet call pairing (mm. 32–38) and the second pairing (mm. 39–47). Also reinforcing the intensification, the overlapping is significantly longer in the second timbral pairing, lasting throughout m. 44 once the trumpets begin to sound. The overlap of the first pairing, however, only lasts a quarter-note plus a sixteenth-note value in 4/4.

Rather than employing off-stage brass from the first horn call on, as he did in earlier versions of the Symphony, Mahler creates a more refined timbral process. Prefaced by the timbrally transferred horn call in the clarinets, yielding the effect of extreme distance, the trumpet fanfares get gradually more intense and connect with the natural sound color of the hunting gesture, signaling the approaching key change to D major through timbral progression.

### 2.4.3 Converging the Musical Planes

The foregrounded timbral progression must be completed if it is to have an impact on the modulation. In mm. 59–62, the Klangflache’s two planes are reduced to the single clarinet in the foreground (Block 4 in Ex. 2.4, above) and the waning pedals in the flute and horns in the background. The call of the cuckoo is transferred to the same register as
the initial clarinet hunting call, linking the timbral events and the clarinet’s clarion and chalumeau registers. As the clarinet’s rhythm is normalized into that of the background plane, the flute’s E₄ drops out after two measures, followed by the horns, half a measure later. Here, as the pedal ceases, the *Klangfläche* converges into a simple homophonic texture and reveals the introduction’s goal. Its grasp on the teleological progress of the music is finally relinquished, and D major arrives with the clarinet, confirmed by the cellos in mm. 62ff. The timbral progression and harmonic modulation are complete. Even in the tonal environment of Mahler’s First, timbre helps create a sense of cadential closure alongside pitch.

As can be seen, functional tonality can be augmented in a number of ways; even though the birdcalls highlight descending fourths clearly related to D minor or major, their timbral and temporal characteristics set them apart from the background plane. The birdcalls still function harmonically, but they create distinct auditory streams that complete the foreground’s timbral progression from clarinets (chalumeau) through trumpets (off-stage) and horns, to clarinets (clarion), and back to clarinets in their chalumeau register. It is a timbral progression that is a directed process. Certainly, Mahler is a pitch-centric, tonal composer. But in this instance, he creates a connection of timbres that foreshadows and influences timbral practices of the twentieth century. Mahler’s practice is not yet the progenitor of *Klangfarbenmelodie*, but it can be seen as an ancestor of sorts.

*Klangfläche* technique occupies a unique place in the transition from tonal to post-tonal music. The compositional technique is designed to suspend harmonic progression, yet the music continues its procession through time even though the
traditional teleological parameters are in stasis. As a tonal construct, its purpose is to forestall harmonic progression. It is homophonic, but its textural layers are independent. I call the distinct texture between homophony and polyphony that it creates compound homophony: a texture composed of one clearly foregrounded textural layer and at least one supporting but independent background textural layer.

2.5 Timbre in Mahler’s Musical Language

The various interpretations of the First, especially its introduction, have created a slew of differing opinions. So much so that Zoltan Roman admits, “We could call it an exceptionally problematic piece of music.”57 According to Laura Dolp, “The non-teleological and atmospheric elements of Mahler’s music have functioned as a kind of Bermuda triangle.”58 She argues, “Mahler’s so-called ‘failure’ to achieve a clear syntactic process was in fact a proactive engagement with the potential of sonorities to create a meaningful, multi-dimensional space.”59 She continues, “[The introduction] has challenged its audience to suspend expectations for clear syntactic process or at least to consider the possibility that there may be more than one kind of process at work [emphasis added].”60 Timbral analysis reveals another layer of meaning and allows an analytical interpretation that fully explains Mahler’s musical language in the introduction. He creates a functional layer of timbre. It is treated as a thematic or motivic building block and developed as if it were pitch content, but it is not yet emancipated from pitch.

59 Dolp, 120.
60 Dolp, 126.
In the introduction, timbre is not replacing pitch as the syntactic parameter; both parameters carry functional meaning. They complement each other.

2.5.1 Closure

Analyzing the First’s introduction raises two key issues in timbral analysis: closure and line. Closure is the perception of a stable conclusion or moment of repose; it signifies the end of a process. Cadential satisfaction is a type of closure. As Robert J. Hopkins points out, “Closure is relative—it is more or less strong or weak.” At the end of the introduction, Mahler erodes tonal syntax by avoiding the dominant triad and seventh chord. There is no doubt of a satisfactory cadence in m. 63, but the dominant pedal and falling fourths are not enough for Mahler. He reinforces the pitch domain with timbre and texture, regaining whatever cadential capital is lost by eschewing the dominant-tonic and leading tone compulsions. The strength of closure in mm. 59–62 is amplified by the synchronicity of the timbral confirmation in the clarinet, registral normalization, auditory and textural stream reduction, and textural shift from compound to simple homophony. Timbral dissimilarity becomes similarity, abrupt discontinuities become good continuation, and asynchronicity becomes common fate.

Mahler’s functional orchestration can either assist or encumber tonal function, both viable artistic avenues depending on the compositional goal. John J. Sheinbaum finds the process of tonal syntax similarly blurred in the second movement of Mahler’s Third Symphony. There, however, it is through disjointed orchestration. In the opening nineteen measures, according to Sheinbaum, “The continuous melodic motion of the

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61 For discussions of cadential closure in Mahler’s music, see Hopkins (1990) and Sheinbaum (2005).
phrase [is] undercut by a discontinuous orchestration, and the episode concludes with a problematic effect. … The orchestration of the melody raises a rhetorical eyebrow and casts doubt on the ability of the tonal syntax to control the other parameters.”

Mahler’s functional orchestration does not always operate contrary to tonal syntax; it also cooperates with it. According to Sheinbaum, “While the orchestration of this movement can blur and undermine the tonal syntax of cadential processes, it ultimately helps to define moments of formal importance by reinforcing gestures constructed through more traditionally explored parameters.”

Mahler is unquestionably a pitch-oriented composer who relies on tonal syntax throughout his compositions; but his music also contributes to the rise of timbre as a more compositionally salient parameter. Sheinbaum rightly suggests that “Mahler questioned the power of tonality from ‘without’ by using pointed timbral choices at key structural moments,” as opposed to weakening it “from ‘within’ through pitch-based factors such as extreme chromaticism.”

As Hopkins hypothesizes:

As composers became more reliant on what may be called secondary parameters—those other than melody, harmony, and rhythm—and came to avoid traditional cadences, which had been primarily responsible for establishing and confirming the tonic, tonal syntax would have been further weakened. …the decline of tonal syntax in music of the late nineteenth and early twentieth centuries should be matched by a concomitant increase in the importance of secondary parameters.

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64 Sheinbaum, 101.
65 Sheinbaum, 117.
2.5.2 Clarity of Line and Textural Foregrounding

The second issue raised by the First is the notion of line. According to Gustav Mahler, “The most important thing in composition is clarity of line.”\(^6^7\) Clarity of line is foreground differentiation; it determines what is most prominent. And it is often heightened control of timbre that Mahler carefully uses to construct clarity of line in his massive orchestras. According to Donald Mitchell, “His scoring, one cannot too emphatically repeat, was not an ‘aspect’ of his composing: it was how he composed.”\(^6^8\) Mitchell finds that the “rational basis of Mahler’s orchestration” is “to enable us to comprehend his music by hearing precisely what [is] going on.”\(^6^9\) Mahler’s timbral investment in clarity contributed to the sound that ostracized him from his critics.

According to the critic Max Hohemann, “Mahler’s imagination must be developed above all in timbral terms: he thinks in timbres, for which he then finds a melody.”\(^7^0\) Although Hohemann’s statement is not meant to be flattering, it holds a kernel of truth.

Nevertheless, we must not forget the general primacy of pitch-based theme for Mahler.

Timbral control of line is generally employed to make motivic and thematic material clear, conveying to the listener which line should be attended. Mahler’s remarks to Bauer-Lechner on the third movement of the First illustrate this tendency: “Bringing out each new entry in the canon distinctly and in a startling new coloration—so that it calls attention to itself—caused me a great deal of trouble in the instrumentation.”\(^7^1\)

\(^6^7\) NBLE, 75 (NBL2, 76).
\(^6^9\) Mitchell, 213.
\(^7^1\) NBLE, 159–60 (NBL2, 175).
Plainly stated, this is textural foregrounding through timbral distribution. According to Mahler,

You wouldn’t believe how anxiously and carefully I proceed in my compositions. In fact, I have worked out quite a new orchestral technique—the direct result of my long experience. For instance, when the musical meaning requires two consecutive notes to be played disconnectedly, I don’t leave this up to the common sense of the players. Instead, I might divide the passage between the first and second violins, rather than leave it entirely to the firsts or seconds. If I want a part to retreat into the background, I have it played by only one, two, or three desks, as needed.\textsuperscript{72}

On another occasion he is quoted as saying:

I even go as far as to make the violins play on the E string for \textit{cantabile} passages and moments of high flight, but on the G string for sorrowful and sonorous tones. When I want passionate expression, I never use the middle strings, which do not sound effective. They are much better suited to softly veiled, mysterious passages.\textsuperscript{73}

Other than the violin in Mahler’s inner ear needing a soundpost adjustment, this statement demonstrates Mahler’s acute timbral awareness. Of course, these techniques are not new; composers have long been instructing the violins to play \textit{sul G} in order to obtain a particular timbre. But we are often reminded of Mahler’s constant attention to timbre. To Bauer-Lechener he said:

If I want to produce a soft, subdued sound, I don’t give it to an instrument which produces it easily, but rather to one which can get it only with effort and under pressure—often only by forcing itself and exceeding its natural range. I often make the basses and bassoon squeak on the highest notes, while my flute huffs and puffs down below.\textsuperscript{74}

The solo contrabass at the beginning of the third movement of the First immediately comes to mind. Of course, as Karen Painter’s excellent work on the

\textsuperscript{72} NBLE, 45 (NBL2, 41).
\textsuperscript{73} NBLE, 68 (NBL2, 62).
\textsuperscript{74} NBLE, 160 (NBL2, 175–76).
reception of Mahler’s use of timbre shows, he was not often applauded for his thoughtfulness and careful applications of tone color.\textsuperscript{75} Despite the invective against Mahler, Julian Johnson finds that

one might accord Mahler’s critics with an important level of insight. For all the composer’s own words about thematic material over orchestration…Mahler’s music exemplifies a key aspect of musical modernism in the weight that is carried by sonority [timbre or tone color]. … That how Mahler’s music speaks is inseparable from what it says is nowhere clearer than in relation to his orchestration.\textsuperscript{76}

Speaking specifically about instrumentation, Mahler remarked to Bauer-Lechner, “Where I think I am ahead of other composers, both past and present, is in the matter of what one might call clarity [\textit{Deutlichkeit}].”\textsuperscript{77} On another occasion, he was distraught after attending a concert of Beethoven’s “Pastoral” Symphony (1808) because the performance lacked a “sustained melodic line.”\textsuperscript{78} He explained to her that Beethoven’s score needed editing “so that the principal voice stands out and the accompaniment retires into the background.”\textsuperscript{79} For Mahler, “Instrumentation is not there for the sake of sound-effects, but to bring out clearly what one has to say.”\textsuperscript{80} Mahler consistently calls for textural delineation of foreground material through timbre.

\textbf{2.6 Conclusions}

In Mahler’s music we begin to encounter timbre treated as part of the thematic material—that is, timbre developed in similar ways as pitch content. There is a timbral

\textsuperscript{75} Painter, “The Aesthetics of the Listener.”
\textsuperscript{76} Julian Johnson, \textit{Mahler’s Voices: Expression and Irony in the Songs and Symphonies} (Oxford: Oxford University Press, 2009), 40.
\textsuperscript{77} NBLE, 68 (NBL2, 62).
\textsuperscript{78} NBLE, 44–45 (NBL2, 41).
\textsuperscript{79} NBLE, 45 (NBL2, 41).
\textsuperscript{80} NBLE, 178 (NBL2, 192).
progression in the introduction of the First. To be sure, there are pitch processes occurring alongside the timbral process. Nonetheless, there is a clear development of a timbral idea. Mahler’s functional instrumentation communicates musical logic and imparts meaning to the music. Pitch-theme and tonality are still the bases of Mahler’s compositions; but he also structures formal elements of his music on timbre. From studying the introduction to his First Symphony, we see how Mahler both connects to orchestral tradition and foreshadows the monumental changes to come. As Hefling writes, “[Mahler] is both the last in the long tradition of Austro-Germanic symphonists and a harbinger of the New Viennese School of Schoenberg and his followers.”

Mahler’s connection to Schoenberg manifests in many ways. Schoenberg inherited the former’s strong sense of organicism. Mahler believed, “What matters is that the whole should be alive, and, within the bounds of this freedom, be built up with irrevocable inevitability.” That is, musical logic determines musical process—a most Schoenbergian sentiment. Sheinbaum takes the connection to Schoenberg further to find Mahler’s timbral practices akin to *Klangfarbenmelodie* in that they challenge the assumed hierarchy of parameters. Mahler does more than just challenge the hierarchy: he elevates timbres to operate functionally alongside theme and harmony.

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82 NBLE, 46 (NBL2, 42).
3. Schoenberg’s Concept of *Klangfarbenmelodie*

Timbre-melodies! How acute the senses that would be able to perceive them! How high the development of the spirit that could find pleasure in such subtle things! – Arnold Schoenberg

Arnold Schoenberg’s theory of *Klangfarbenmelodie* (timbre-melody) is one of the most important yet least understood compositional innovations of the twentieth century. After positing *Klangfarbenmelodie* at the end of his *Theory of Harmony*, Schoenberg concludes, “Who dares ask for theory!” This final statement perhaps best sums up his approach to music. He was a theorist; but he was first and foremost a composer. Schoenberg’s chief concern was always with logic and comprehensible presentation of the musical idea. If these two criteria were met, he would break his own, or anyone else’s, rules as he saw fit in order create a new type of music. With *Klangfarbenmelodie*, the new, chromaphonic music Schoenberg created gave birth to a new way of presenting musical logic based on timbre.

This chapter investigates Schoenberg’s conception of *Klangfarbenmelodie* through his known writings on the matter and explores the constituent notions of *Klangfarbenmelodie* using his collected theoretical texts. Schoenberg’s theoretical concepts such as the musical idea, comprehensibility, coherence, and logic provide the knowledge needed to penetrate the obscurities of the technique. *Klangfarbenmelodie* is a textural principle combining aspects of homophony and polyphony, another way of

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1 Schoenberg, *Theory of Harmony*, 422.
2 Schoenberg, 422.
3 Musical logic is the syntax of the specific musical language the composer develops within an individual work, applicable only to that same particular work. Every piece has its own musical logic.
accomplishing what Schoenberg sought to bring about with twelve-tone composition—a path forward for new music.

3.1 Schoenberg’s Definition of Timbre

Understanding *Klangfarbenmelodie* requires a critical reexamination of our current knowledge, beginning with recalling Schoenberg’s definitions of timbre (*Klangfarbe*) and tone (*Ton*). In *Theory of Harmony* he writes:

> In a musical sound (*Klang*) three characteristics are recognized: its pitch, color (timbre), and volume. …the tone becomes perceptible by virtue of tone color, of which one dimension is pitch. Tone color is, thus, the main topic, pitch a subdivision. Pitch is nothing else but tone color measured in one direction.

There can be no doubt of Schoenberg’s view as he expresses the same sentiment three times in a row—timbre is the primary dimension of a tone for Schoenberg; for him, pitch is ancillary to timbre. This determination does not diminish the importance of pitch nor does it relegate pitch to a secondary status; rather, pitch simply is not the primary characteristic of a musical sound. For example, A440 played on a violin is a different *tone* than A440 played on an oboe. Both are the same pitch (*Klanghöhe*), but they are not the same tone (*Ton*) because their timbres (*Klangfarben*) are different.

From the Helmholtzian scientific viewpoint that Schoenberg understood, a tone is the collective result of the fundamental and its partials. Since the partials are not perceived individually by the ear, they are heard in their totality as the timbre of the tone. The fundamental is parsed separately because of its relative strength over the other partials in the tone; therefore, a pitch is heard as part of the tone. Schoenberg’s view that

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pitch is a subdivision of timbre is entirely justified by the actual phenomenon of tone production. Timbre is the totality of the tone, the fundamental with all of its partials; pitch is “only” the fundamental.

Of course, the emancipation of timbre is about how timbre is used, not what it is; but understanding how and why Schoenberg came to his definition and how it relates to his view of consonance and dissonance illuminates his compositional choices.

Schoenberg’s approach to timbre is based on his understanding of Helmholtz and the overtone series, just as is his approach to consonance and dissonance. In fact, the overtone series is the basis for his explication of the major mode and diatonic chords. His entire understanding of how pitches relate to one another, including his justification for non-triadsonorities, stems from this phenomenon. For him, consonance and dissonance are relative functions of harmonics: “Dissonances are the more remote consonances of the overtone series.” Not only does Schoenberg derive his conception of relative consonance from the overtone series, but also his understanding of timbre. So important is timbre for Schoenberg that he bookends Theory of Harmony with discussions of it. In the first substantive chapter (Chapters I and II are pedagogical in nature), he writes:

The tone is the material of music. It must therefore be regarded with all its properties and effects, as suitable for art. All sensations that it releases—indeed, these are the effects that make known its properties—bring their influence to bear in some sense on the form of which the tone is a component, that is, on the piece of music. In the overtone series, there appear after some stronger-sounding overtones a number of weaker-sounding ones. … Even if the analyzing ear does not become conscious of them, they are still heard as tone color.

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5 Schoenberg, Theory of Harmony, 23ff.
6 Schoenberg, 329. Incidentally, Alexander Pope’s Essay on Man (1733–4) contains the line: “All discord [is but] harmony not understood.”
7 Schoenberg, 20.
As Severine Neff points out, “Schoenberg’s central concern is ultimately for the work itself, its totality, its essence.”

Clear from the above passage, Schoenberg relates all parts of the musical tone (including pitch and timbre) to the form or the work itself. Critical to Schoenberg’s musical outlook, timbre—as the primary characteristic of the tone—is a form-bearing parameter. Recognizing his understanding of tone, timbre, and pitch fundamentally defines how his music should be considered. It does not and should not invalidate generations of pitch-centric scholarly effort, but in certain repertories it offers the opportunity to reevaluate the hierarchical placement of pitch over other parameters (and perhaps the entirety of how we think about this music).

3.2 The Concept of Klangfarbenmelodie

With Schoenberg’s definitions of tone, timbre, and pitch in mind, let us again consider his declaration of Klangfarbenmelodie:

Now, if it is possible to create patterns out of tone colors [Klangfarben] that are differentiated according to pitch [Höhe], patterns we call ‘melodies,’ progressions, whose coherence (Zusammenhang) evokes an effect analogous to thought processes, then it must also be possible to make such progressions out of the tone colors [Klangfarben] of the other dimension, out of what we call simply ‘tone color’ [Klangfarbe], progressions whose relations with one another work with a kind of logic entirely equivalent to that logic which satisfies us in the melody of pitches [Klanghöhen].

Careful parsing of this passage reveals the nature of Klangfarbenmelodie. Perhaps causing some confusion, Schoenberg uses Klangfarbe with two meanings. First, Klangfarbe is another way of saying the totality of the tone (Ton), which can be

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9 Schoenberg, Theory of Harmony, 421. The German is included in the Introduction, see p. 1 of this dissertation.
differentiated separately by both pitch (Klanghöhe) and timbre—its second definition, “that which we simply call [Klangfarbe].” Because tones are made of both pitch and timbre, tone progressions, or melodies, can be organized by either parameter. Melodies are tone progressions that coherently present a musical idea, “an effect analogous to thought processes.” Finally, and most importantly, the timbre-melodic relations with one another must operate with a logic that satisfies us just as the relations between pitch-melodies do. This last revelation—that the “logic which satisfies us” refers to the relations of the timbre-melodies—is the sine qua non of Klangfarbenmelodie. What is not present in Schoenberg’s proclamation is any reference to unchanging pitch or a fragmentary division of pitch material. Both of which erroneously crept into the relevant theory at an early stage.

3.2.1 Critical Reception of Klangfarbenmelodie in the 1920s

The intellectual history of Klangfarbenmelodie has been shaped (or misshaped) by two opposing definitions of a timbre-melody: (1) a quasi-static pitch with morphing timbres, and (2) the fragmentary, pointillistic distribution of linear pitch material among different timbres. But for both Schoenberg and Webern, Klangfarbenmelodie was more than these outward characterizations; it was timbre conveying musical logic and the comprehensible presentation of a musical idea. In his article for the Handwörterbuch der musikalischen Terminologie, Rainer Schmusch defines two phases of reception and interpretation divided by the cultural-historical incision of World War II. The latter

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10 This second definition is commonly known in German literature as Klangfarbenwechsel melodischer Tonfolgen, literally: timbres-change [in] melodic tone-sequences.
11 Rainer Schmusch, s.v “Klangfarbenmelodie,” Handwörterbuch der musikalischen Terminologie, III F-L (1994).
phase was hugely influential on the Darmstadt school of composers and can be succinctly summarized through György Ligeti’s approach. He distinguishes between *Komposition mit Klangfarben* (composition with timbres) and *Komposition der Klangfarben* (Composition of timbres).\(^\text{12}\) Jennifer Iverson’s detailed investigations show that when Ligeti taught composition with timbre he used Webern’s Opp. 6, 10, and 29 to elucidate how timbre delineates structure, while he used Schoenberg’s Op. 16, No. 3 to illustrate composition of mixed sound colors, or, as we now prefer, emergent timbres.\(^\text{13}\) This trend in the later reception seems to pit Webern against Schoenberg. However, its roots in the discourse reveal a more complementary genesis.

Already in the early 1920s *Klangfarbenmelodie* had taken on both its static and pointillistic meanings. As early as 1919, *Klangfarbenmelodie* was assigned the notion of pitch stasis. On Schoenberg’s Op. 16, No. 3, Arnold Schering writes that these *Klangfarbenmelodien* “…are not graded according to pitch, but according to timbres. … A certain chord remains immobile for a long time in pp, but receives an ever-changing color gradation from half-measure to half-measure.”\(^\text{14}\) And in 1923, Erwin Stein writes, “In [Webern’s] *Six Bagatelles for String Quartet*, Op. 9, in the melodies, almost every tone is apportioned to a different instrument, almost every one in a different timbre

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(harmonics, pizzicato, col legno, etc.). … Schoenberg’s idea of timbre-melodies may have been influential.”\(^{15}\)

Even with this bifurcation in the reception, there remained a small number of commentaries that spoke to the inner workings of the technique. In 1924 Paul A. Pisk finds the emergent timbres of Schoenberg’s orchestration in “Farben” regulated by dynamic registration, but also hints at understanding Klangfarbenmelodie as a textural principle. He writes, “The juxtaposition of different lines results in stratifications.”\(^{16}\)

Another source taps into the textural connotations of Klangfarbenmelodie that same year. The 1924 translation of Alfredo Casella’s 1919 *L’Evoluzione della musica* contains the first known appearance of Schoenberg’s concept in English, actually a translation of the Italian “melodie di timbri,” rather than the German Klangfarbenmelodie.\(^{17}\) The broad strokes of Casella’s understanding of music history from ancient times to more recent are tracked through melody (human song), rhythm (dance), and harmony (polyphony since the Renaissance). However, when writing of his contemporary 1919, he finds that “[today] we are witnessing the approach of [the] fourth element,” that is, timbre [timbro].\(^{18}\) Casella notes that the first two elements of music (melody and rhythm) only act successively and the third element (harmony) only acts simultaneously, but that timbre acts in both senses.\(^{19}\) Not only does he discern Schoenberg’s goal of combining

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\(^{18}\) Casella, xx.

\(^{19}\) Casella, xx.
the horizontal and vertical, he foresees a musical twentieth century guided by the beacon of timbre. According to Casella, “The science of tone-color…is at present the most powerful and progressive mainspring in music. And the ‘melodies of tone-color’ [melodie di timbri]…no longer strike us as a vision of the laboratory.”

Both the interwar and post-WWII critical receptions frame Klangfarbenmelodie through a different lens than the pre-WWI expressionist idiom in which it was cultivated. And apart from Pisk and Casella, critical response from both phases seems to ignore the technique’s foundations in musical logic, only to characterize it by its outward manifestations, rather than by its inner workings. Historical precedent was set, however, and both the single-pitch and pointillistic conceptions have been largely maintained.

3.2.2 The 1951 Letters

Much of the scholarship on Klangfarbenmelodie has been shaped by only three documentary sources: the closing passage of Theory of Harmony, Schoenberg’s 1951 essay “Anton Webern: Klangfarbenmelodie,” and a letter he wrote to Josef Rufer that has only been published in part. Last to be written, the 1951 essay illustrates Schoenberg’s concern with the posterity of his invention. Joseph Auner finds that although this note seems private, that Schoenberg took the time to type it out suggests it was meant for the public. The other source, a letter from Schoenberg to Josef Rufer dated January 19, 1951, explicitly states that the communiqué should be kept private unless Schoenberg’s ownership of the concept is attacked. Schoenberg must have felt threatened by the notion

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20 Casella, xx.
21 All are discussed in detail below.
of Webern getting credit for inventing *Klangfarbenmelodie*. In fact, he was so imperiled by those associating the technique with Webern’s music that he created a dead man’s switch to be activated if his claim to inventing *Klangfarbenmelodie* was ever challenged publicly. Perhaps because of the sensitive nature of the letter, Rufer only published the portion that does not impugn Webern in any way.\(^{23}\) The published portion addresses *Klangfarbenmelodie* substantively; it was translated by Alfred Cramer in 2002 and will be discussed in detail below.\(^{24}\) The unpublished portions of the letter follow:

> From a remark by Mr. Fritz Dorian-Deutsch, who also learned from Webern, I deduced that [Webern] had explained that the idea of *Klangfarbenmelodie* with which I conclude my *Harmonielehre* comes from him. He had already composed *Klangfarbenmelodien*, and then I used that in my *Harmonielehre*.

> That is actually an accusation of plagiarism.

> I do not wish to attack my deceased old friend, now that he is defenseless; he was, all in all, a good friend, despite many vacillations to other camps. Moreover, the merit of inventing this term does not warrant making a big affair out of it. I think I have enough other merits and can easily do without one or the other.

> If I still write to you about it, it is because of the pronounced mania in the world for degrading Jews in favor of Aryans; my communication should at least attest for the truth.

> Allow me to say that I believe it is most likely a misunderstanding or a memory mistake by Mr. Dorian, since Leibowitz presented in his book the true facts before he had ever come in contact with me; and [Leibowitz] also studied with Webern.

> But now to the point. …

> [Portion published by Rufer and translated by Cramer excerpted and discussed below.]

> …I am firmly convinced that Webern erred, at best, in the interest he took in this idea. I do not think that he was purposely stealing from me. All the same, I would presently forgive him. He deserved far greater compensation for his true merits and his deep and sacred belief in art than the world had granted him. I am always saddened when I think of his fate, and I would be the last one to diminish his fame.

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That is why I urge you and the other three friends to whom this letter is addressed, not to make the content of this letter known other than in extreme case of need: that is, for example, if I am being attacked, or my authorship is questioned. Otherwise let this be a secret among us five.

I am with warmest regards,

Truly yours\textsuperscript{25}

Schoenberg sent an identical letter to Luigi Dallapiccola on the same date.\textsuperscript{26} It is not known who the other two recipients of the presumably identical letters are. The merit of inventing \textit{Klangfarbenmelodie} was indeed enough for Schoenberg to create this plan, dispatch four letters, and prepare a fifth written document if the need for public dispute arose. The dead man’s switch was never triggered, however, and Schoenberg’s wish to maintain his friend’s place of high honor was upheld.

Although written for posterity’s sake, both documents from 1951 provide valuable clues to understanding \textit{Klangfarbenmelodie}. The portion of the letter to Rufer and Dallapiccola withheld above is as follows, translated by Cramer:

\begin{quote}
My conception of \textit{Klangfarbenmelodie} would have been fulfilled in Webern’s compositions only in the slightest part. For I meant something different by \textit{Klänge}, and especially by \textit{Melodie}. \textit{Klänge}, as I thought of them here, would have included isolated occurrences in my early compositions such as, for example, the tomb scene of \textit{Pelleas und Melisande}, or much of the introduction to the fourth movement of my second String Quartet [Op. 10], or the fugue figure from the second Piano Piece [Op. 11, No. 2] that Busoni repeated so many times in his adaptation, and many others. They are never merely individual tones of different instruments at different times, but rather \textit{combinations of moving voices} [emphasis added]. However, these are still not melodies, but isolated occurrences within a form to which they are subordinate. They would become melodies if one found the point of view to arrange them so that they would form a constructive unity of absolute autonomy, an organization that connected them according to their intrinsic values. I would never have thought to appropriate, for example, the old forms, ternary song, Rondo, or implementations like that. In my conception
\end{quote}

\textsuperscript{25} Arnold Schoenberg, unpublished letter to Josef Rufer, January 19, 1951, ASC 7770. My translation is adapted from the ASC’s translation of an identical letter written the same date to Luigi Dallapiccola, ASC 5687.

\textsuperscript{26} Arnold Schoenberg, unpublished letter to Luigi Dallapiccola, January 19, 1951, ASC 5867.
such forms would have been something new; there is still no description for them, because they still do not exist.  

The attention Webern received regarding Klangfarbenmelodie seems to have struck a jealous chord in Schoenberg. But despite the appearance of attacking Webern in this letter, Schoenberg is simply guarding his legacy. Rather than fabricating a feud between teacher and student, the real interest in this letter is in its author’s espousing the musical logic of Klangfarbenmelodie and providing musical examples of its nascent form.

Instead of focusing on the textural implications, Cramer reframes Klangfarbenmelodie through a harmonic lens. According to him, “Klangfarbenmelodie [is] harmony composed of reified overtones.” Essentially, Cramer’s view is similar to Josef Matthias Hauer’s: the chord implied by a tone’s harmonic series gives the tone its color. For Cramer, the “Klänge” Schoenberg wrote about to Rufer and Dallapiccola are chords of pitch, not musical sounds or timbres. Returning to Lichtenfeld, “[Klang] encompasses at least three different semantic meanings: first, sound with all its characteristics, as it were the substratum of music, secondly, chord as sound constellation, and thirdly, color as sound quality.” Although written in 1970, the theoretical essence of Klang has not changed. According to Kevin Mooney’s definitions

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from the *New Grove Dictionary*, “Klang (i) [is] A composite musical sound consisting of a fundamental pitch (*Grundton*) and its upper partials (*Obertöne*), as opposed to noise (*Geräusch*) and to the phenomenon of sound itself (usually *Schall*); it is sometimes used as a synonym for *Klangfarbe* (‘timbre’ or ‘tone-colour’).”

Mooney continues in the second entry, “Klang (ii): In theoretical writings of the second half of the 19th century... *Klang* is used both with the general meaning of ‘composite sound’ and with the specific meaning ‘chord.’”

Mooney provides the same three definitions (albeit in a different order) as Lichtenfeld: (1) the composite musical sound, (2) timbre, and (3) chord. Cramer finds implied in the definition of *Klang* that “chord progressions as well as melodies could be regarded as successions of *Klänge,*” circumventing Schoenberg’s general use of the term.

Auner’s index of “Sound (as *Klang* and its many variants, including *Klangfarben, Zussamenklänge, Klangeffekten, Klangkörpers,* etc.)” in *Style and Idea* yields one-hundred-seven results, overwhelmingly having to do with timbre, color, tone-color, and instrumentation.

At the risk of redundancy, a *Klangfarbenmelodie* is composed out of progressions “of what we simply call ‘tone color’ [*Klangfarbe*].” Clearly, Schoenberg intends *Klangfarbenmelodien* to be constructed of timbre. “Anyone can see that I had thought of progressions of tone-colors equaling harmonic progressions in terms of inner logic,”

writes Schoenberg. There is no trick or hidden meaning here; it is abundantly clear that timbre is at work in *Klangfarbenmelodie*. “I meant something different by *Klänge*,” Schoenberg writes. In fact, for Schoenberg, “[*Klänge*] are never merely [emphasis added] individual tones of different instruments at different times, but rather combinations of moving voices.” Schoenberg indicates that the *Klänge* he had in mind are more than individual tones of different instruments, but that plainly indicates that tones of different instruments are involved. The “*Klänge*” he wrote about were the sounds he had in mind—the timbres [*Klangfarbe*] in the sense of the totality of the tone—and most importantly, they occurred as combinations of moving voices. A close reading of the central passage of the letter and an investigation of the three examples he gives reveals the same.

Cramer astutely identifies the passage that Schoenberg wrote in preparation for a Capitol Records release of *Pelleas und Melisande* in 1949: “A musical sound is produced which is remarkable in many respects, but especially because here for the first time in musical literature is used a hitherto unknown effect: a glissando of the trombones.” Schoenberg provides a musical example beginning at the *Sehr langsam, gedehnt* six measures after Rehearsal 30 (mm. 284–85); the same passage is reproduced in Cramer’s “Example 1” with the clarinets that Schoenberg omitted restored. Perhaps Schoenberg removed the clarinets—the clear foreground element of the passage—from the program

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notes in order to highlight the background layer he was so proud of. Writing in 1949, Schoenberg is again concerned with establishing his priority as inventor, this time for the use of trombone glissandos in orchestral music. He was obviously unaware of Alexander Glazunov’s *The Sea* (1889) or Edward Elgar’s *Dream of Gerontius* (1899), both of which call for trombone glissandos as pointed out by Trevor Herbert.\(^{40}\) Claims of innovation aside, the “sound” of Schoenberg’s music is indeed remarkable.

Schoenberg is not alone in identifying this passage as an important timbral moment. Ethan Haimo finds that “some of the most obvious innovations of [*Pelleas und Melisande*] are orchestrational.”\(^{41}\) He identifies the balcony scene where Melisande lets her hair down (mm. 244ff.) and the tomb scene that Schoenberg himself identifies. Haimo finds that in Schoenberg’s pitch-language the “balance has been shifted so far that most of the places where a local tonic is established sound more like local points of emphasis or color, rather than like enduring pillars around which other events are structured and to which they relate.”\(^{42}\) By “color” Haimo likely means a shading of pitch language, not timbre; however, his point is the shift away from tonic-centered music. He also observes that Schoenberg obfuscates the concept of a referential pitch by using rhythms that help obscure hierarchical pitch relationships.\(^{43}\) With that shift comes the possibility of other ways to create referential points in the music. The tonal ambiguity

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\(^{42}\) Haimo, 83.

\(^{43}\) Haimo, 82.
allows timbre to become more prominent as a structural element (as it did in *Klangflächen* technique).

Representative of mm. 284–87, where the textural and timbral layers do not change but the pitch content is lowered by a half step in the latter two measures, Example 3.1 shows a planal analysis of m. 284 from the tomb scene. There are clearly three distinct timbral lines at work: two background lines, an upper and a lower, and one in the foreground. The upper background line consists of the flutes, muted horns, muted trumpets, and muted cellos playing at the bridge (*am Steg*); all are marked *pp* or below, and the cellos and flutes are in *tremolo*. The nature of the constant *tremolo* attack obscures the rhythmic articulations and the hemiola created within the timbral line. The lower background line consists of the contrabassoon, basses, and the muted bass drum. Distinguished by its register, the lower line is a cohesive unit despite the bass drum’s triplet rhythm. The similarity principle outweighs the lack of common fate here. The timbral affinity between the lowest voices in the orchestra creates a sense of belonging. The clarinet, marked *ff*, is clearly the foreground element. The trombone glissandos of which Schoenberg was so fond are colorations of the clarinet line. The ascending gestures in the first part of the measure link the timbres in contrary motion to the background. Marked *ppp*, the glissandos are not meant to stand out as motivic elements themselves, but they do complete, or at least complement, the melodic shape of the clarinet line. The

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44 Measure 287 is identical to m. 286 except for the final glissando which is extended down chromatically by one sixty-fourth-note and the omission in m. 286 of the C₄ and C₃ in the horns (m. 287). Together, mm. 286–87 are sequentially one semitone lower than mm. 284–85 except for the four horns which sound a perfect fifth higher. The sequential preparation is accomplished through the following changes between m. 284 and m. 285: the Contrabassoon’s A⁵/₂ (m. 284) becomes G⁵/₂ (m. 285) and the E⁴ and E₃ in Horns 3–4 (m. 284) become C⁵ and C⁴ in Horns 1–2 (m. 285). The glissandos in mm. 284–85 exhibit the same pattern as those of mm. 286–87.
first in each pair of glissandos reinforces the ascent, while the second provides a descending release, creating the impression of an arch-shaped melodic line. Pitch content creates an additional link between the clarinets and trombones; both instruments highlight F and B♭. As is often the case, all three timbral lines are rhythmically distinct.


Schoenberg’s conception of *Klangfarbenmelodie* begins to take shape immediately: the “combinations of moving voices” he refers to as the essence of *Klangfarbenmelodie* are present in the form of timbral lines in this first of three *Klänge* to which he points as occurrences of proto-*Klangfarbenmelodie*. The remarkable sound he

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⁴⁵ For clarity, octave doublings are not included and the glissandos which are written out in the score (Universal Edition, 1920) are abbreviated here.
noted for the Capitol Records release is indeed an important moment of music structured through timbre in this early work.

The second Klang, the introduction to the fourth movement of the Second String Quartet, consists of three distinct timbral ideas (Example 3.2a–c). The passing back and forth between the violins of the elided five-note cell in an upper registral extreme (mm. 2–4) is mirrored by the cello and viola’s undulating contrary motion statement in their lower registers (mm. 10–12). These two musical ideas are timbral opposites. “Upper” and “lower” refer to register and are relative to each other—they are related to pitch in that all timbres have pitch, as established, but they are not related to pitch-class. The timbral idea, as long as it is kept in a registral extreme in this case, would operate the same regardless of whether it was transposed up or down any number of semitones. Separating the two is a punctuating chord in harmonics accompanied by pizzicato in the cello, a timbral event distinct from the surrounding music (m. 9). The instruments are muted throughout. From a textural perspective, the rest of the introduction can be derived from these three timbral ideas.

Example 3.2a–c. Arnold Schoenberg, Second String Quartet, Op. 10/iv, three timbral ideas in the introduction: (a) alternating timbral voices; (b) undulating low strings; (c) punctuation in harmonics and pizzicato.

In the case of a string quartet, the timbral differences are subtler than in an orchestra, but they certainly still exist. On its way to establishing the alternating upper timbre idea which controls the texture for the first eight bars, the introduction calls
attention to register by spanning four octaves with an ascending gesture reminiscent of openings from eighteenth-century symphonic tradition, of course with Schoenberg’s twentieth-century musical language rather than the arpeggiated triad of the eighteenth century. After the harmonics-and-pizzicato punctuation in m. 9, the lower timbral idea gains control until m. 13. The final three bars of the introduction, mm. 13–15, display the interaction of all three timbral ideas (Example 3.3). The undulating statement in the low strings carries the music through the first beat of m. 13. Then, after a one-quarter-note transition, the alternating timbre idea controls. It is punctuated by pizzicato in m. 14, and again at the fermata in m. 15. These are the sounds [Klänge] that could become a part of Klangfarbenmelodie if given the proper “form” that Schoenberg referred to in his letters to Rufer and Dallapiccola.

The third and final *Klang* that Schoenberg identifies as an example of potential *Klangfarbenmelodie* is the “fugue figure from the second Piano Piece [Op. 11, No. 2] that Busoni repeated so many times in his adaptation.” Cramer identifies either the polyphonic pattern in mm. 31–32 or the eighth-note pair that moves by semitone in contrary motion in m. 39.\(^{46}\) I think he is correct in identifying mm. 31–32 and 39 of the original, which correspond to mm. 34–37 and 46 in Busoni’s *Konzertmäßige Interpretation* (Universal Edition, 1910), but I think it is the descending three-note figure in the left hand that Schoenberg calls the “fugue figure” (Example 3.4a–d). In a letter to Busoni beseeching him to revise his transcription, Schoenberg writes, “Perhaps you could at least decide to remove the additions (which as repeats, *unvaried*!! repeats, scarcely correspond with the style of the piece as a whole).”\(^{47}\) First, Busoni repeats three sequentially descending iterations, then exactly repeats the final iteration once more. Busoni creates other repetitions in this passage as well. Later, in m. 46, the unvaried repetition of the descending three-note figure is balanced (for Busoni) by repeating the figure three more times, now as a rising gesture that ascends by octaves. Viewed as a whole, this figure “repeats, *unvaried*!! [then] repeats” again, as Schoenberg’s letter exclaims.


Example 3.4a–d. (a) Arnold Schoenberg, *Drei Klavierstücke*, Op. 11, No. 2, mm 31–32; (b) Ferruccio Busoni, *Konzertmäßige Interpretation*, mm. 34–37; (c) Schoenberg, Op. 11, No. 2, m. 39; (d) Busoni, *Konzertmäßige Interpretation*, m. 46.48

48 Measure 46 of Busoni’s *Konzertmäßige Interpretation* is in $\frac{12}{8}$ but contains 15 eighth-note values. Before the return to bass clef in the left hand, there are three eighth rests inserted in beats 11–13 of the fifteen-beat measure.
But how is this figure a proto-Klangfarbenmelodie Klang? In Schoenberg’s estimation, it must have a quality that sets it apart from its adjacent figuration, in the original at least. Surrounded by measures of $^{4}_4$, mm. 31–32 return to $^{12}_8$, but without emphasizing the characteristic three-eighth-note rhythmic patterns—they occur but are obscured by tied notes and elision. The passage is distinct in register, rhythmic patterns, and melodic shape. It is also the first sustained passage of parallel motion in Op. 11, No. 2. But the figure also adds a particular timbral quality to the passage. It replaces the chorale-style block chords in the left hand with spritely gestures in a shared register, eliminating the homophonic melody-and-accompaniment structure that flanks it on both sides to create a polyphonic, possibly fugue-like, passage. On the homogenized, modern piano it is sometimes difficult to comprehend the subtle shifts in timbre, but confining the music to one registral area, especially when juxtaposed with another, is one way of creating a timbral shift on the instrument. When the left hand switches from homophonic, accompanying chords in a register unmistakably beneath a distinct melody to a polyphonic line in the same register as the established melodic line, it creates this timbral shift. The distinct textural difference is a Klang that could be a building block in Klangfarbenmelodie.

All three examples Schoenberg cites facilitate his claim to inventing Klangfarbenmelodie by showing how innovative he was. He was lauded for his original orchestration of Pelleas und Melisande. Busoni, an artist he held in high esteem, exclaimed upon reading a score of the symphonic poem, “You are a master of
Orchestration; from first impressions this seems to me undeniable." Both Berg and Webern's adoration of it is well known. The remarkable sound Schoenberg himself describes is a standout moment in this orchestrational masterpiece. The latter two examples hail the arrival of free atonality. Looking back from the perspective of 1951, Schoenberg surely understood the importance of both the Second String Quartet (Op. 10) and the Three Piano Pieces (Op. 11). But more importantly, the Klänge of all three examples are combinations of different timbres, or sounds, that, if organized into melodies, could be Klangfarbenmelodie.

Not only did Schoenberg mean “something different by Klänge, [but] especially by Melodie.” After all, the timbres of Klangfarbenmelodien were never meant to be “individual tones of different instruments at different times, but rather combinations of moving voices.” Melodies are connected to form for Schoenberg, as we see by revisiting his letter quoted earlier:

These [Klänge] are still not melodies, but isolated occurrences within a form [emphasis added] to which they are subordinate. They would become melodies if one found the point of view to arrange them so that they would form a constructive unity of absolute autonomy, an organization that connected them according to their intrinsic values. I would never have thought to appropriate, for example, the old forms, ternary song, Rondo, or implementations like that. In my conception such forms would have been something new.  

It is the “combinations of moving voices” that must be organized into a constructive unity of absolute autonomy, not the successive individual tones that may be present within them. They would become melodies if they constituted a form.

3.2.3 The 1951 Essay

Turning to the short essay he wrote only months after the letters, “Anton Webern: Klangfarbenmelodie,” elucidates Schoenberg’s meaning:

But as far as Klangfarbenmelodien are concerned it is above all untrue that I invented this expression after hearing Webern’s Klangfarben-compositions. Particularly, anyone can see that I had thought of progressions of tone-colors equaling harmonic progressions in terms of inner logic. These I called melodies, because, like melodies, they would need to be given form, and to the same extent—but according to laws of their own, in keeping with their nature.

I remember that Webern several times showed me compositions and insisted that I should recognize them as “ternary Lied-forms.” When he tried to apply that to Klangfarbenmelodien, that was highly naïve. For progressions of tone-colors would certainly demand constructions different from those required by progressions of tones, or of harmonies. For they were all that, and specific tone-colors as well.

Klangfarbenmelodien would demand a particular organization, which would perhaps show a certain similarity to other musical forms; but they would have to take into account demands imposed by a new factor, tone-colors. Quite different forms had to be produced by homophony and the art of counterpoint [emphasis added]. The latter did not have the chance at linking contrasting phrases with each other; but since homophony freed harmony from the obligations imposed by the art of counterpoint, with its combinations of parts, it could find a different way of working out its material.

It is certainly most naïve to think that Klangfarbenmelodie will be like ternary songs. The two will be no more similar than a scherzo and a fugue.51

Schoenberg’s essay explicitly associates Klangfarbenmelodie with texture. By comparing Klangfarbenmelodie to homophony and polyphony Schoenberg makes clear that he was thinking of larger architectures and a new way of structuring music, a new way of generating and presenting form. What Schoenberg means by “forms” in these

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passages is what Neff calls “forms of presentation.”52 The three forms of presentation Neff identifies in Schoenberg are homophonic music, popular forms, and contrapuntal combinations. According to her, “Schoenberg’s three forms of presentation [each have] specific forms of motivic working out associated with them.”53 Schoenberg’s theoretical viewpoints and compositional practices are in line with traditional definitions and practices: homophony is characterized by developing variation, popular forms by their lack of complexity, and polyphony by the contrapuntal combinations of multiple independent lines. Klangfarbenmelodie is a fourth form of presentation.

The autonomous constructive unities that Klangfarbenmelodien require are distinct from the constructive unities based on the principles of homophony or polyphony of pitches. In other words, Schoenberg thought that a texture based on timbre would generate a presentation form different than textures based on pitch. According to Schoenberg, the old forms created by homophony and polyphony, scherzo and fugue for example, were not adequate for Klangfarbenmelodie. The Klänge he pointed out to Rufer and Dallapiccola are subordinate to forms that are not appropriate for them and they are not connected by their intrinsic values; that is why they are not Klangfarbenmelodien.

Schoenberg calls the timbres of Klangfarbenmelodie “melodies” because they are textural lines, same as pitch-melodies in homophony and polyphony are. The key to understanding the entire concept is the notion of timbral lines—melodies created by timbre. Connecting timbral lines generates form from timbre just as connecting melodic lines or themes of pitch does in homophonic forms. In actuality, Klangfarbenmelodien do

53 Neff, 56.
not require new forms; they are a new way of articulating form, regardless of whether the form itself is old or new.

Schoenberg thought that Klangfarbenmelodien would require new forms because they require a new way of conceiving musical texture, and therefore, a new way of connecting the textural ideas of the timbre-melodies. His desire to make a new art distracted him from the reality that Klangfarbenmelodie is, in a way, an old art. As soon as music was composed with more than one timbre, a type of Klangfarbenmelodie came into existence. Even though he focused on its innovative aspects, the declaration of Klangfarbenmelodie in Theory of Harmony recognized that the concept is not unprecedented:

The evaluation of [timbre] (Klangfarbe)…is…in a still much less cultivated, much less organized state than is the aesthetic evaluation of these last-named harmonies [chords with six or more tones]. Nevertheless, we go right on boldly connecting the sounds with another, contrasting them with one another, simply by feeling; and it has never occurred to anyone to require here a theory that it should determine laws by which one may do that sort of thing. … And, as is evident, we can also get along without such laws.54

Schoenberg’s conception of Klangfarbenmelodie stayed remarkably consistent from 1911 to 1951. Over that forty-year span, his language changed from “progressions whose relations with one another work with the kind of logic entirely equivalent to that logic which satisfies us in the melody of pitches” to the much more concise “combinations of moving voices,” but both express the same core rationale:

Klangfarbenmelodie is a textural principle involving combinations of timbre-melodies. It is likely that Schoenberg’s jealous reaction at the suggestion that Webern invented Klangfarbenmelodie was spurred on by a geriatric concern with his own legacy.

54 Schoenberg, Theory of Harmony, 421.
However, even more than Dorian-Deutsch’s claim, Schoenberg’s remarks of 1951 are concerned with the misinterpreted logic of *Klangfarbenmelodie*. Schoenberg never loses sight of his theory and what makes it function.

### 3.3 The Musical Logic of *Klangfarbenmelodie*

It is not for a prescriptive set of laws that we endeavor to understand *Klangfarbenmelodie*; it is to comprehend and describe its musical logic. That musical logic has already been laid bare for us. *Klangfarbenmelodien* must be constructed of timbral melodies or lines that coherently present an idea, and the relations between those melodies (i.e. the forms created by them) must operate with a logic that satisfies. The criteria of Schoenberg’s theoretical grounding can be traced through a logical progression of concepts: Melodies are lines. The line must comprehensibly present the composer’s idea. Comprehensibility is imparted through a surveyable whole—a form—the parts of which must connect appropriately. The parts themselves must cohere. They do so if their connections are recognizable and understandable. These comprehensible and coherent melodies must then be logically organized into a musical form, which must be comprehensible and coherent in its own right. Distilling uncomplicated definitions for Schoenberg’s terms can be difficult at times. However, in the case of the constituent concepts of *Klangfarbenmelodie*, Schoenberg’s theories can be summarized relatively succinctly.

#### 3.3.1 Melody

Melodies are tone-progressions and as such have forward motion that creates a line through the music. Linear progression, or the horizontal as Schoenberg frequently calls it, is one aspect of music. As he turned toward a new musical style Schoenberg
found that “we are turning to a new epoch of polyphonic style, and as in earlier epochs, harmonies will be the product of the voice leading: justified solely by the melodic lines!” 55 The line in Klangfarbenmelodie is paramount and is comparable to the line or melodic voice in polyphonic forms, which according to Schoenberg, “…is one whose form and structure is such that its musical content is musically comprehensible.” 56

3.3.2 Idea

The musical idea—the effect analogous to thought processes—is the musical content. “In its most common meaning the term idea is used as a synonym for theme, melody, phrase, or motive.” 57 But Schoenberg also considers “the totality of a piece as the idea.” 58 Ideas come in a variety of guises. The manner of presenting an idea is important to the efficacy of its communication. For example, the idea of folk music is “conceived or expressed so that everyone can understand it; whereas…high [art music] ideas…can scarcely be grasped unless the mind is trained to some extent.” 59 Within art-music there are further subdivisions; specifically, according to Schoenberg, “The contrapuntal idea is distinguished from the homophonic idea.” 60 Homophonic musical ideas depend on developing variation while the polyphonic idea varies greatly in “total sound” but little in thematic content. 61 For Schoenberg, the type of idea suitable for a particular type of music is dependent upon its textural setting. He finds that a working-

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55 Schoenberg, 389.
58 Schoenberg, 122–23.
60 Schoenberg, The Musical Idea, 111.
61 Schoenberg, 111.
out of independent voices is not compatible with the contrapuntal method. By this he means development through variation of the individual lines in polyphonic music runs counter to the meaning imparted by contrapuntal combination. Schoenberg writes, “Certainly it would be as great a loss to give up the art of our melodic and thematic formation as it once was to abandon the art of contrapuntal composition. And one can understand why in the last fifty to seventy years an attempt to combine both arts has been so often made. Probably another stage in the presentation of the idea is ‘about to be.’”\(^{63}\) *Klangfarbenmelodie* is one solution that allows the idea to be presented in the manner of both developing variation homophony and contrapuntal combination polyphony. The manipulation of timbre as a thematic element, careful construction of timbral lines, and its use as a structural element all promote timbre’s ability to be the substance of a musical idea.

### 3.3.3 Comprehensibility

Comprehensibility is the potential for understanding; the idea must be communicated so that it is comprehensible. It is important for Schoenberg that the structuring principle of the music match the idea’s presentation. Forms are comprehensible when they are “surveyable,” that is, if the “structural articulation is appropriate.”\(^{64}\) The parts of a comprehensible musical form must fulfill a function and emanate from the whole. As Schoenberg writes, “The [structuring] principle of homophonic music is ‘developing variation,’ that of contrapuntal music is ‘unfolding.’

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\(^{62}\) Schoenberg, 111.

\(^{63}\) Schoenberg, 111–13.

\(^{64}\) Schoenberg, *Coherence, Counterpoint, Instrumentation, Instruction in Form*, 23.
Both principles are in accord with the laws of comprehensibility.”

Twelve-tone music is an attempt to combine these principles, as much music of the late-nineteenth and early-twentieth centuries was. According to Schoenberg, “A mixed style, partly homophonic, partly polyphonic, permitted these two principals (which in fact differed far more [than twelve-tone and triadic composition]) to mix,” although it was not always a “happy mixture.”

The difficulty in understanding Schoenberg’s twelve-tone music arises because the tone combinations’ “comprehensibility as a musical idea is independent of whether its components are made audible one after the other or more or less simultaneously.” That confusion of the idea’s comprehensibility is why twelve-tone music can be difficult to understand and ultimately leads to its unpopularity among uninitiated listeners. However, Schoenberg views his twelve-tone innovations as a way to combine the principles of polyphonic and homophonic music. For him it is a way forward for art. In polyphony, the interaction of the melodic lines (motives, themes, phrases, etc.) determines the structure of the work. Homophony, however, enslaved all parameters to serve the melodic theme and its harmony, which then became the structuring principle of the music. According to him, “[The sound] combination [of a twelve-tone composition] will not develop, or, better, it is not it that develops, but the relationship of the twelve tones to each other develops, on the basis of a particular prescribed order (motive), determined by the inspiration (the idea!).” Twelve-tone music offers freedom not by excising triadic

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65 Schoenberg, The Musical Idea, 137.
66 Arnold Schoenberg, “Twelve-Tone Composition” (1923), in Style and Idea, 207.
67 Schoenberg, 208.
68 Schoenberg, 208.
sonorities (which it did for the sake of committing to explore fully the possibilities of the new), but through structuring the music on the principles that vertical and horizontal presentations of sound combinations are equivalent, and the interaction of the sound combinations provides structure—one way to create the “happy mixture” of homophonic and polyphonic principles; Klangfarbenmelodie is another.

3.3.4 Coherence

Coherence is that a thing belongs with another thing. For Schoenberg, it occurs when a sum and its parts have commonalities. He writes, “Coherence comes into being when parts that are partly the same, partly different, are connected so that those parts that are the same become prominent.”\(^\text{69}\) As Neff succinctly put it, “Schoenberg defines artistic coherence as that which connects one musical event to another with the aim of producing an art form.”\(^\text{70}\)

Coherence is based on many factors in music. According to Schoenberg, it can be based on the “unifying qualities of such structural factors as rhythms, motifs, phrases, and the constant reference of all melodic and harmonic features to the center of gravitation—the tonic. Renouncement of the unifying power of the tonic still leaves all the other factors in operation.”\(^\text{71}\) Timbre is left off the list in this instance, but that does not preclude it from being a structural factor. To the contrary, Schoenberg included a section heading in the Gedanke manuscripts entitled, “Sonority [Klang] as a formative element—and means of coherence.”\(^\text{72}\) In this case, Schoenberg most likely did not mean Klang in

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\(^\text{69}\) Schoenberg, *Coherence, Counterpoint, Instrumentation, Instruction in Form*, 21.


\(^\text{71}\) Arnold Schoenberg, “My Evolution” (1949), in *Style and Idea*, 87.

the manner of harmonic sonority because later in the work is a major section devoted to “The Constructive Function of Harmony;” here, the word *Klang* does not feature, but *Akkord* does. Unfortunately, the section on *Klang* as a formative element and means of coherence was left blank, perhaps illustrative of Schoenberg’s lifelong struggle with timbre as a form-giving element. However, his writings on *Klangfarbenmelodie* shed light on the matter. When Schoenberg espouses connecting timbre-melodies according to their intrinsic values, he means coherence.

Returning to the notion that *Klangfarbenmelodien* must coherently present a comprehensible idea: the idea can be the timbral line itself, analogous to the homophonic motive or theme, or the interaction of the timbral lines, similar to the interaction of pitch lines in contrapuntal forms. The relations between those timbral lines (i.e. the forms created by them) must operate with a logic that satisfies.

### 3.3.5 Logic That Satisfies

Logic is how form is articulated. According to Schoenberg, the conception of an idea does not require logic, but its presentation does. He thinks “strictly logical” music (“in the scientific sense”) would have to lead to a predetermined goal, but he is unable to conceive of music in this way. In actuality, the fundamental goal of any music is determined by the composer through the chosen form. Music can have no more primary a goal than to complete its organized passage through time; articulating a musical form is the *telos* of music. Other goals—expression, mimesis, or program—can only be layered

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73 Schoenberg, 308-41.
74 Schoenberg, *Coherence, Counterpoint, Instrumentation, Instruction in Form*, 5.
upon and in addition to the absolute goal of progression towards the completion of form. The presentation of the goal, then, depends on logic.

The logic of *Klangfarbenmelodie* arises from the combinations of timbral lines. Just as twelve-tone composition does, timbre composition endeavors to create a happy mixture of the laws of comprehensibility of homophony and polyphony. The fatal error in the historical reception and critical theory of *Klangfarbenmelodie* is that previous generations thought Schoenberg meant the “logic which satisfies” *within* the tone-progression or line. However, it is actually the progressions’ “relations with one another” that must operate with the logic that satisfies. According to Schoenberg, “Logic rests on the meaningful and purposeful exploitation of musical coherences with a view to the total goal.”

The form of a work is determined by the idea the same way the “ridges and hollows of our bodies are determined by the position of internal organs.” He continues, “The external appearance of every well-constructed organism corresponds to its internal organization.” The forms created by *Klangfarbenmelodie* are the goal; the techniques through which they are presented—whether through a single pitch with changing timbres, pointillism, or a combination of moving timbral lines—must logically articulate a form. As Schoenberg writes, “To organize something means to build it so that its parts function, that is, work together for a common purpose.”

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76 Schoenberg, 149.
78 Schoenberg, 289.
79 Quoted in Neff, “Introduction,” in *Coherence, Counterpoint, Instrumentation, Instruction in Form*, Iviii.
For Schoenberg, “structural principles” of form in non-Klangfarbenmelodie music are expressed through the connections of “tones, harmonies, and rhythms.” According to him, “Tonality does not only serve; on the contrary, it demands to be served.” For him, tonality is “one of the most gratifying means of producing musical form.” But, “Tonality is not an end in itself, but a means to an end.” He explains in more detail, “[Tonality] is one of the technical resources facilitating (but not guaranteeing) unity in the comprehension of tone-progressions.” For him, “Harmony…never had the task of accomplishing all…structural techniques alone, by its own power.” It was one possible way to communicate the logic of the form. Schoenberg found that larger [twelve-tone] forms could be created through control of “dynamics and tempo, figuration and accentuation, [as well as] instrumentation and orchestration,” differentiating the parts as “clearly as they had formerly been with the tonal and structural functions of harmony.” Writing in 1941 about the emancipation of dissonance in statu nascendi in his works around 1908, Schoenberg asserts:

Formerly the harmony had served not only as a source of beauty, but, more important, as a means of distinguishing the features of form. … Establishing functions demanded different successions of harmonies than roving functions; a bridge, a transition, demanded other successions than a codetta; harmonic variation could be executed intelligently and logically only with due consideration of the fundamental meaning of the harmonies. Fulfillment of all these functions—comparable to the effect of punctuation in the construction of sentences, of subdivision into paragraphs, and of fusion into chapters—could scarcely be assured with chords whose constructive values had not as yet been explored. … A little later I discovered how to construct larger forms by following a text or a poem. The differences in size and shape of its parts and the change in
character or mood were mirrored in the shape and size of the composition, in its
dynamics and tempo, figuration and accentuation, instrumentation and
orchestration. Thus the parts were differentiated as clearly as they had formerly
been by the tonal and structural functions of harmony.  

Schoenberg writes that at the beginning of the emancipation of dissonance his
works were short because he could not build large architectures when successions of
pitch collections did not have an extrinsic reference system giving them meaning.
Discussing his mindset in the time surrounding the publication of *Theory of Harmony*,
Schoenberg states, “New ways of building phrases and other structural elements had been
discovered, and their mutual relationship, connection, and combination could be balanced
by hitherto unknown means.” In this instance he writes mainly with pitch in mind, but
as evidenced by the declaration of *Klangfarbenmelodie*, timbre was present in his
thoughts in 1911.

The logic of *Klangfarbenmelodie*, the way of building structural elements, is what
Schoenberg struggled to articulate. His 1951 references to new forms indicate that he was
thinking in terms of musical texture, but the idea that timbre would supplant pitch posed
problems. The key factor, however, is that timbre operates on a different musical level
than pitch. Both pitch and timbre are simultaneous, interdependent, and symbiotic. The
two parameters cannot exist without each other; *ergo* timbre-melodies and pitch-melodies
must both exist relative to each other.

In his essay “Composition with Twelve Tones (I)” in all uppercase letters
Schoenberg exclaims, “THE TWO-OR-MORE-DIMENSIONAL SPACE IN WHICH

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87 Schoenberg, 217–18.
MUSICAL IDEAS ARE PRESENTED IS A UNIT.” He continues, “All that happens at any point in musical space…functions not only in its own plane, but also in all other directions and planes.” Dimensions are the parameters of a musical tone: timbre, pitch, duration, and loudness. Schoenberg points to rhythm as an example of a different dimension acting in cooperation with the dimension of pitches. Understanding that rhythm and timbre are dimensions that operate on musical planes distinct from pitch allows all parameters to retain their actual significance in music. The planes Schoenberg writes of are different than those of planal analysis; it is best to think of them as the domain or realm of the parameters they are associated with. Each parameter can be a structuring element in its own plane and act upon the whole of the music. In this way, lines of timbre (or rhythm) operate in tandem with pitch, creating the “two-or-more-dimensional” space in which musical ideas are presented.

Later in the same essay, he specifies that timbre can itself be a musical idea. Advocates of a narrow, pitch-centric view may point to Schoenberg’s comments about his Variations for Orchestra, Op. 31 (1928): “The childish preference of the primitive ear for colors has kept a number of imperfect instruments in the orchestra, because of their individuality. More mature minds resist the temptation to become intoxicated by colors and prefer to be coldly convinced by the transparency of clear-cut ideas.” The primitive ear he refers to cannot be the one he exalts in Theory of Harmony: “How acute the senses that would be able to perceive [timbre-melodies]! How high the development of the spirit that could find pleasure in such subtle things!” The broader context of his comment on

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89 Schoenberg, “Composition with Twelve Tones (I)” (1941), in Style and Idea, 220.
90 Schoenberg, 235.
91 Schoenberg, Theory of Harmony, 422.
Op. 31 is an attack on octave doublings and broken harmonies, not on functional timbre or any particular instrument. He is both irritated and amused (one less than the other) that a critic commented that he did not care for sound.\(^92\) He desperately defends the use of timbre in his music: “It is not true that the other kind of sonority is foreign to my music.”\(^93\) For him, sound is a “dignified quality of higher music. … Formerly, [timbre] had been the radiation of an intrinsic quality of ideas, powerful enough to penetrate the hull of the form. Nothing could radiate that was not light itself; and here only ideas are light.”\(^94\) Sound, i.e. timbre, is a quality of higher music and is powerful enough to interact with form. For Schoenberg, only the “superficially minded” do not associate timbre with the “idea” and therefore gloss over its meaning or function to hear it as a surface feature.\(^95\)

Even though Schoenberg clearly considered timbre a functional dimension of music, his struggles to comprehend fully *Klangfarbenmelodie*’s implications led him to write in 1911 that it was probably a fantasy of the future.\(^96\) According to Dahlhaus, Schoenberg’s unsurety “signifies that [*Klangfarbenmelodie*] already exists in embryo but without its logic having yet been recognized.”\(^97\) He points out that *Theory of Harmony*’s entire final chapter is about “[chords] written at a time when it is not yet possible to explain and justify them theoretically.”\(^98\) Throughout the final chapter on chords of six or more tones, Schoenberg prepares a discussion of timbre. The “gentle instrumentation” of

\(^92\) Schoenberg, “Composition with Twelve Tones (I)” (1941), in *Style and Idea*, 240.
\(^93\) Schoenberg, 240.
\(^94\) Schoenberg, 240.
\(^95\) Schoenberg, 240.
\(^97\) Dahlhaus, “Schoenberg’s Orchestral Piece Op. 16, No. 3 and the concept of *Klangfarbenmelodie*,” in *Schoenberg and the New Music*, 142.
\(^98\) Dahlhaus, 142.
an eleven-tone chord in *Erwartung* aids the ear in parsing its harmonic possibilities.\(^99\) Horns and violins stratify two distinct but simultaneous harmonic occurrences in the example drawn from Franz Schreker’s *Der ferne Klang*.\(^{100}\) In each case, Schoenberg points to the instrumentation affecting the harmonic interpretation of the sonorities. The acoustic sensations (*Klangempfindungen*) impart comprehensibility to these sonorities. For Schoenberg, both the instrumentation and the chord spacing are essential: “As soon as a tone is misplaced the meaning changes, the logic and utility is lost, coherence seems destroyed.”\(^{101}\) Yet he is unable to formulate specific rules governing these many-voiced chords. He admits, “Laws apparently prevail here. What they are, I do not know. Perhaps I shall know in a few years. Perhaps someone after me will find them. For the present the most we can do is describe.” Pursuit of the unknown laws of chords with six tones or more is forsaken in order to birth *Klangfarbenmelodie* unto the world, another concept for which he cannot formulate laws.

In a style typical for Schoenberg, he ends his theoretical treatise on harmony with the exclamation, “Who dares ask for theory!” Perhaps it was written sardonically, but more likely it is a practical outcry of the difficulty involved in articulating prescriptive rules for the use of timbre. By concluding his theory of harmony with a theory of timbre Schoenberg offers a different lens through which to consider his topic. It is a prepared dissonance of sorts, awaiting resolution through scholarship. Of course, for Schoenberg, dissonances are just more remote consonances, so considered in this light,

\(^{100}\) Ex. 344 in Schoenberg, 419.
\(^{101}\) Schoenberg, 421.
*Klangfarbenmelodie* is a logical continuation of his theory of harmony and needs no resolution.

Go and hear Schoenberg’s music without inhibitions or prejudices of any kind.
– Anton Webern

Turning to Arnold Schoenberg’s *Fünf Orchesterstücke* Op. 16, No. 3, “Farben,” answers many of the questions presented by his theoretical declaration of *Klangfarbenmelodie*. “Farben” is the work most often cited as the epitome of this new way of composing music, yet it has challenged generations of scholars, sparking debate as to whether or not it is actually an example of *Klangfarbenmelodie*. As will be shown, it most certainly is. Schoenberg’s conception of *Klangfarbenmelodie*, however, is far more expansive than this single piece illustrates. Nonetheless, “Farben” exemplifies *Klangfarbenmelodie*’s happy mixture of contrapuntal and homophonic principles developed through timbral means. This chapter further develops concepts of timbral analysis, including timbral cadences, counterpoint, lines, modulation, and rhythm, as well as the textural layers of the perceived foreground and background. In addition to the definition of *Klangfarbenmelodie* as a texture or presentation style akin to homophony or polyphony established in Chapter 3, a second definition becomes apparent:

*Klangfarbenmelodie* as timbre-melody or timbral line.

Composed in 1909 but not published until 1912, the third of the five pieces has been given a number of descriptive titles. Its composition history has been addressed by Rufer (1959), Craft (1968), Maegaard (1972), Mäckelmann (1987), and Haimo (2006), among others, and its early performance and reception history by Neill (2014).

Schoenberg’s 1922 revision published by Peters has been considered authoritative since

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Robert Craft’s essay. The first complete draft of Op. 16, No. 3 was completed on 1 July 1909. When it appeared in 1912 from Peters Edition it did not include descriptive titles even though the publisher had requested them from the composer. Michael Mäckelmann explains that at first Schoenberg rejected the idea outright. Only a few days later, in a diary entry dated January 27, 1912, Schoenberg writes that Peters “wants titles for the orchestral pieces for publisher’s reasons” and that he is “unsympathetic to the idea.” After lamenting the fact that he must provide titles, he writes, “However, there should be a note that these titles were added for technical reasons of publication and not to give a ‘poetic’ content.” Mäckelmann explains that after Schoenberg did provide the titles, Peters no longer wished to use them on account of their being unusual. Perhaps this rejection was the impetus for a rebellious Schoenberg retaining the titles he was once reluctant to give. Of the five pieces, the titles of Nos. 1, 4, and 5 have remained unchanged, that of No. 2 changed once, but No. 3 has had numerous monikers throughout the years. Table 4.1 shows its various names and the corresponding circumstances. In 1912, Schoenberg gave it what he called a technical title, “Akkordfärbungen” (Chord-coloration). For the Amsterdam concert on 12 March 1914, Schoenberg changed its title to “Der wechselnde Akkord” (The changing chord). This concert is also when he changed No. 2’s title from “Vergangenheit” to “Vergangenes.” The 1920 reference to the Traunsee may elicit a connection to the tumultuous earlier period of Schoenberg’s life

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5 Rufer, 34.
when his wife Mathilde was having a prolonged affair with his friend, the artist Richard Gerstl. Speculation that the traumatic events in Schoenberg’s personal life influenced the profound artistic growth in the period after the affair seems apt. Since 1922, the title has contained “Farben” in some way or another. That Schoenberg repeatedly revised the title betrays his dissatisfaction with it. In the end, to claim any programmatic association remains speculative.

Table 4.1. Monikers given to Arnold Schoenberg, Op. 16, No. 3

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Source</th>
</tr>
</thead>
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<tr>
<td>1 July 1909</td>
<td>No title</td>
<td>Sketches, ASC 1478</td>
</tr>
<tr>
<td>27 January 1912</td>
<td>Akkordfärbungen</td>
<td>Diary entry</td>
</tr>
<tr>
<td>1912</td>
<td>No title</td>
<td>Published by Peters Edition</td>
</tr>
<tr>
<td>12 March 1914</td>
<td>Der wechselnde Akkord</td>
<td>Amsterdam concert directed by Schoenberg</td>
</tr>
<tr>
<td>1920</td>
<td>Der Traunsee am Morgen</td>
<td>Program notes</td>
</tr>
<tr>
<td>1922</td>
<td>Farben</td>
<td>Revision published by Peters.</td>
</tr>
<tr>
<td>1925</td>
<td>Farben (Sommermorgen am See)</td>
<td>Arrangement by Greissle for chamber orchestra</td>
</tr>
<tr>
<td>1949</td>
<td>Summer Morning by a Lake (Colors)</td>
<td>Published revision: for normal orchestra</td>
</tr>
</tbody>
</table>

All of the piece’s common names came well after its composition. The prominence of harmonic content in these names suggests the important role harmony plays. We should not forget, however, that color is as prominent in these names as harmony is. But, in 1912, when Schoenberg gave his 1909 composition the name “Akkordfärbungen,” he did not call it *Klangfarbenmelodie*. This omission should not be surprising; as evidenced by *Harmonielehre* and the 1951 writings, Schoenberg was unable to express fully the idea of *Klangfarbenmelodie* because he thought it would replace pitch and require a new type of form, rather than operating simultaneously with other types of musical logic. Since there certainly is a musical logic made
comprehensible through pitch content in “Farben,” previous scholars such as Doflein could not grasp any other type of musical logic present. But as Dahlhaus correctly points out, balance is the key. According to him, “Schoenberg achieves balance [of timbre- and pitch-melodies] in Op. 16, No. 3 by reducing the melodic element, not by abolishing it.” Recognizing that a logic of pitches and a logic of timbres are balanced allows us to understand fully Klangfarbenmelodie in “Farben.”

4.1 Klangfläche and ruhende Bewegung

Before we explore analytically how “Farben” revolutionizes twentieth-century compositional practice, considering how the work connects to tradition is enlightening. Once again, Klangfläche technique is important for analyzing timbre. Caution is required when applying a tonal construction to post-tonal music; however, what was a compositional technique in nineteenth-century tradition now becomes the basis for an analytical technique, a way to understand the logic of the piece. Reading “Farben” with an understanding of Klangfläche technique and considering it from a planal perspective illuminates many of its mysteries. No evidence has yet been found of the term Klangfläche in Schoenberg’s writings. However, a short, undated manuscript held at the Arnold Schönberg Center (ASC) in Vienna shows that he conceived of a similar technique—ruhende Bewegung, or static motion, which is accomplished through tremolo, recitative, or pedal point, and Schoenberg sets out Waldweben as a model (Figure 4.1). The document is described in Christensen (1988) and Jacob (2005), and discussed in

more detail by J. Daniel Jenkins in his 2009 article, “Schoenberg’s Concept of ruhende Bewegung.”

Of the three techniques Schoenberg posits in relation to ruhende Bewegung, Jenkins summarily dismisses recitative because it has a question mark after it in the manuscript, then reinterprets tremolo as unvaried repetition, and pedal point as harmonic stasis. Based on a smattering of Schoenberg’s pejorative statements about repetition, Jenkins claims, “Because of the close relationship of ostinato and pedal point in Schoenberg’s thought, we also include ostinato in the list of elements that bring about ruhende Bewegung.” This addition allows Jenkins to concentrate on “Mondestrunken” from Pierrot Lunaire (Op. 21, No. 1, 1912) as an example of ruhende Bewegung. His analysis correctly identifies its ostinato and repeated patterns, and provides valuable insight into the piece’s place in the repertoire. But the ostinato-based compositional technique on display in “Mondestrunken” is not ruhende Bewegung.

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9 Jenkins, 90–91.
10 Jenkins, 91.
In his manuscript, Schoenberg associates *ruhende Bewegung* with the structural principles of tremolo, pedal point, and possibly recitative. He offers Wagner’s *Waldweben* as an example and notes that *ruhende Bewegung* occurs at beginnings, endings, and introductions (Figure 3.1). All these factors point to *ruhende Bewegung* and *Klangfläche* being quite similar if not the same. First, *ruhende Bewegung* occurs at beginnings, endings, and introductions, implying a relationship to the large-scale form. It is a macroscopic event, not the microscopic one Jenkins envisions. His translation of another manuscript, ASC T51.18, shows that Schoenberg considered music to have three types of motion: accelerating, retarding, and—the motion in question—static; all are large-scale musical phenomena.\(^{11}\)

Schoenberg’s views on the three structuring principles, tremolo, pedal points, and recitative, shed light on what *ruhende Bewegung* may be. Tremolo is both a timbral and rhythmic event; in essence, it changes the timbre of a sustained tone (no matter how short or long) to constant acoustic attacks, a distinct change in color and effect. For Schoenberg, tremolo, vibrato, and trill all have similar meanings and uses:

[Tremolo is] one of the ways of giving life to a [tone (*Ton*)] that was dying out or losing its color—one could strike it over and over again, as in the case of a *Bebung*, also of the mandolin; or, in the case of a broken tremolo on piano or strings, one could repeat it as rapidly as possible; or as in flutter-tongueing [sic], break it down into a large number of single short attacks.\(^{12}\) Lastly, one should include here the trill, which indeed serves the same purpose.

All musical instruments except the organ have difficulty with the sustained [tone (*Ton*)]. Whether it is the length of breath, or of the bow, or its steadiness, evenness, or the shortness of the [tones (*Tones*) themselves] (as on the piano,

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\(^{11}\) Jenkins, 88–89.

\(^{12}\) *Bebung* usually refers to a clavichord vibrato technique; the term is sometimes applied to a finger vibrato on woodwinds.
harp, guitar, etc.)—the musician is constantly concerned to divert attention from the imperfection of the sound [Klanges].

Tremolo lies at one extreme of a tone’s durational (ADSR) spectrum—attack—but it serves the other end, sustain.

Pedal points obviously serve sustain as well, but in a different manner. They lie at the opposite end of the durational spectrum from tremolo; pedal points endeavor to create sustain without attack, the pure continuation of a tone. Furthermore, they have large-scale implications for form. According to Schoenberg, “Though the pedal point is often used in masterpieces for expressive or pictorial purposes, its real meaning should be a constructive one.” He continues about its possible purposes, “In [some] cases the effect of the pedal point should be one of retardation: it holds back the forward progress of the harmony. Another constructive use of such retardation of the harmonic movement is to balance remote motival [sic] variation.” From these comments, Schoenberg clearly views pedal points as a compositional element that interacts with structure and form.

Recitative is slightly more problematic, but not enough to justify its dismissal. The question marks in T53.06 may indicate Schoenberg’s general struggle with the concept of recitative. In a short note in Coherence, Counterpoint, Instrumentation, Instruction in Form he writes, “Which relationships form the basis for the effect and comprehensibility of recitatives?” He only wrote substantively about recitatives once, around August 1944:

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13 Arnold Schoenberg, “Vibrato” (c. 1940), in Style and Idea, 345–46. Ton is translated by Leo Black as “note,” but “tone” is a better and more consistent translation, ASC T64.07.
15 Schoenberg, 31.
16 Schoenberg, Coherence, Counterpoint, Instrumentation, Instruction in Form, 107.
In order to understand the problems of changing a size of the beat, it is useful to consider the case of the Recitative. The so-called ‘Secco-Recitative’ avoids entirely everything which could become obligatory, (or obliging). There is no melody, no theme, even no basic motive, no common rhythm, no other phrasing than that dictated by the text; also the harmonic progressions are different from all musical forms: One could even to a certain degree—and with exception of the cadences—call them: non-functional. … But most of all, there is no obligation to keep the beat of equal length.\textsuperscript{17}

It is not difficult to see why Schoenberg struggled to find comprehensibility in recitatives if they lack the musical elements he listed: melody, theme, basic motives, common rhythms, and functional harmony. However, his comments are enlightening with regard to \textit{ruhende Bewegung}—in recitative, Schoenberg found everything required for the comprehensibility of form to be negated and thereby the motion of the music to be at rest.

Therein lies the key to understanding \textit{ruhende Bewegung}: the motion of the music is at rest. It must be something that halts the large-scale progression of the music, as \textit{Klangfläche} does. All three elements—recitative, pedal point, and tremolo—provide stasis in multiple musical parameters. First, they negate the beat in some way: recitative with its lack of beats of equal length, pedal point through constant sustain without (or with minimized) attacks, and tremolo through the sustain it creates with constant attacks. Motion, in this case rhythmic motion, is suspended. Second, they provide harmonic stasis: recitative with its non-functional harmonies, pedal point and tremolo through prolongation of a tone. Jenkins’s formulation that “a passage exhibits \textit{ruhende Bewegung}\

if the repetition of rhythmic figures is accompanied by static harmony” is not wholly inaccurate. He simply did not identify that it is a large-scale phenomenon.

Finally, if we turn to Waldweben, knowing that for Schoenberg harmonic and rhythmic stasis are elements of ruhende Bewegung and that it must interact with the form, the identification of the Wagner work as the definitive example of the compositional technique makes sense. We have already seen how Waldweben operates as a Klangflächen in Chapter 1; now the same principles have another name as well.

The difference between ruhende Bewegung as Schoenberg postulated it and Klangflächen is musical planes. Nothing in T53.06 precludes multiple musical planes as part of the ruhende Bewegung; however, nothing implies them either. This aspect does not detract from Schoenberg’s identification of Waldweben as the model; it simply means he had not formulated it in that manner. Are we to stipulate, then, that Klangflächen has multiple planes and ruhende Bewegung does not? That would indeed create definitions that would not interfere with Jenkins’s postulations, but it seems too presumptive. Better perhaps, not to draw any speculative assumption, and to allow analysis of the music to dictate our conclusions.

4.1.1 Klangflächen in Schoenberg’s Gurre-Lieder

The most obvious example of Klangflächen in Schoenberg occurs in the opening twenty-six measures of Gurre-Lieder (1900–11), which are reminiscent of the Introduction to Mahler’s First and also display the influence of Wagner. At the work’s outset, the background plane is established with tonic pedal points and oscillations in the oboes and third and fourth flutes, typical Klangflächen gestures (Example 4.1). The

\textsuperscript{18} Jenkins, “Schoenberg’s Concept of ruhende Bewegung,” 94.
Klangfläche emerges when the first and second piccolos and flutes establish the foreground plane with their arpeggiated vi, I, and IV chords in mm. 3ff., while the third and fourth of each instrument have a trill and dotted-half-notes in the background plane. Unusual for Klangflächen, Schoenberg chooses to use the same timbres in the same registers for both planes. The planes are distinguished through tonal ambiguity versus clarity as well as rhythmic qualities, rather than the more typical timbral stratification. The pedal points and tremolo-like oscillations provide background ambiguity while the staccato-articulated chord arpeggiations provide foreground clarity. Schoenberg is not satisfied with such a clear harmonic delineation of planes, though. He obscures the division’s lucidity by introducing the relative minor with an added sixth to the Eb-major tonic, reminiscent of both Wagner and Mahler.


The main musical ideas of the foreground plane are clearly indicated in the most prominent position of Schoenberg’s initial sketches of the work. The first music notated on the uppermost staff shows the trumpet motto at mm. 7ff. and the arpeggiation pattern used in both the piccolos/flutes and horns/harps (Figure 4.2). When the accented longer tones of the trumpet theme enter in mm. 7ff., they are clearly foregrounded. As each new foreground element appears, it takes precedence over the last. To highlight the entrances of the added textural layers, Schoenberg progressively uses more salient timbres: from flutes and piccolos to harps with a single horn, then to solo trumpet, and finally to two trumpets and ten horns split between five desks. As new timbral ideas are established, previous ideas continue, but fade slightly so they are no longer the foremost perceptual
stream. Schoenberg makes use of the attention principle of auditory scene analysis. According to Huron, “When competing with other concurrent auditory streams, streams tend to fade from attention. A listener’s attention is drawn to isolated sound events, so the existence of a given auditory stream can be enhanced by introducing a solo onset event.”\(^{19}\) Schoenberg’s revolutionary approach to texture begins to be seen. The compound homophony created by the *Klangfläche* is augmented by creating a polyphonic foreground within it. The background is still a homophonic accompaniment of pedal points and ostinatos, but the independent foreground becomes polyphonic. Through the additive process of increasing the number of textural layers without forcing previous layers to converge, Schoenberg creates a complex contrapuntal foreground with multiple concurrent streams, each of which forms a textural layer. By staggering their entrances, Schoenberg avoids confusion and creates a forward trajectory in the music during a period of static motion, or *ruhende Bewegung*.

![Figure 4.2. Detail of first page of sketches for Schoenberg’s *Gurre-Lieder*, ASC 2325.](image)

\(^{19}\) Huron, *Voice Leading*, 127.
4.2 A Planal Approach to “Farben”

Although “Farben” exhibits elements of both Klangfläche and ruhende Bewegung, it defies categorical classification. Still, a planal approach reveals timbre’s functional role. Similar to a Klangfläche, “Farben” does indeed occur in distinctly audible background and foreground planes: the slow timbral morphing of the pulsating background organism and the much more active timbral events of the foreground.20

A number of important analyses of “Farben” have been published over the years, including those by Maegaard (1972), Forte (1973), Burkhart (1974), Cogan and Escot (1976), Schnittke (1970s, published 2002), Rahn (1980), Mäckelmann (1987), Tsang (2002), and Haimo (2006). Many of these identify the multiple layers or planes of the music, but focus primarily on other aspects of the music.21 For example, Burkhart interprets the piece in two planes but considers the second plane to be a structurally subordinate, “static…foil to the constantly shifting web of sound that is the changing chord.”22 Unfortunately, he only considers the morphing organism as structural. Even in his forthright attempt to analyze timbre in “Farben,” he is still restricted by a narrow, pitch-centric view. He admits that his “chief concern is with instruments that participate in the organism.”23 He does not consider the piccolo, harp, celesta, or any other timbral event that takes place in what he calls the extra-chordal motives or the foreground plane.

20 It should be noted here that “slow,” “pulsating,” and “active” are rhythmic descriptors. An analysis that seeks to determine how rhythm interacts with the underlying musical logic would indeed be worthwhile, and planal analysis could be readily adapted for that purpose.
21 Discussed below, Tsang’s 2002 study is a notable exception that investigates “Farben” through the lens of perception and auditory scene analysis. However, he only considers the first eleven measures in detail.
23 Burkhart, 153–54.
Burkhart calls some of the foreground interjections a “separate layer—superimposed on the main body of the composition in the manner of a collage.”24 He claims, “The use of these instruments…is not color-structural in Farben, but only for emphasis—that is ‘for color’ in the traditional sense.”25 However, defining structure and communicating the logic of the work is the purpose of these timbral statements. Burkhart is not alone in making this sort of claim about the foreground events. John Rahn calls them “Raisins in a tapioca pudding.”26 Mäckelmann treats them more seriously, but he finds that the foreground events are not independent motivic units; rather, they are “formal process-marking motifs,” for emphasis.27

A notable exception in the “Farben” literature is Robert Cogan and Pozzi Escot’s analysis in their book Sonic Design (1976); they approach “Farben” through an acoustical lens.28 They find two different ways to view the foreground events. First, as pitch events, they are reflections of the morphing organism pitches that are registrally displaced. Their “Example PO.2” is a worthy graphic representation of the work’s pitch content that clearly demonstrates their notion of upper and lower reflections.29 It likely draws inspiration from Maegaard’s similar approach.30 They lay out three main pitch registers of the work: the principal field along with the upper and lower fields. For them, events that unfold in the foreground are explained away as outer-field reflections of the principal

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24 Burkhart, 150
25 Burkhart, 154.
29 Cogan and Escot, 416.
field. Through this process, “minute linear gestures of the principal field’s motion are intensely magnified by reflecting low and high fields into motions covering [the] entire…range of the piece.” Cogan and Escot still overlook the structural importance of the so-called outer field reflections, but at least they consider this part of the music. What differentiates their analysis from others is their acoustical approach. Indeed, the second way to view the foreground events in their analysis is as sonic phenomena. Writing of the totality of the work, they conclude:

Ultimately, [the tone-color evolution in ‘Farben’] bears the greatest structural weight: correlations with every other parameter. The movement of the fundamental pitches in the principal motion (when it happens) are a seed, a microcosm. The upward and downward reflections form significant reinforcements—hints and glimmers. But the tone-color process—the succession of changing spectra, beats, tone modulations, and attacks—is the blossoming, the macrocosm, the great sonic and structural reality itself. It is a structure that can be perceived only by recognizing the entire host of sonic elements left unrecognized by earlier theory.

The problem with most previous analyses and the reason “Farben” is not well understood is that virtually half the music has been essentially ignored. Rather than looking for undiscovered sonic elements in that background we must return to the music and consider its entirety—that is, not just the background or foreground, but all of it.

Imagine: an artist paints a scene with a walkway, far-off blue mountains set behind an ocean inlet, and a deeply intense red-lit sky in the background. It elicits a certain meaning. Is it a bucolic scene? Does it conjure memories of a sunset walk?

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31 Cogan and Escot, Sonic Design, 419.
32 Cogan and Escot, 426.
33 “Half” is used here as an approximation. While it may be of analytical interest to some to count the notes and consider their distribution, that is not part of the following analysis.
Now consider what happens if the artist places a heinous figure in the foreground. It creates new meaning that was not present in the background scene. The foregrounded character is now the focal point of the painting and it will likely forever be known by this element—and it is. Edvard Munch would not have placed something so controversial and attention demanding as the shocking figure in the foreground of *The Scream of the World* (Figure 4.3) if it was not to be considered. The same goes for Schoenberg; without the foregrounded timbral events, the morphing organism of “Farben” is similar to the background scenery in *The Scream*. Just as the walkway, fjord, mountains, and sky elicit a certain response, the background music is meaningful on its own. However, once *The Scream*’s figure is introduced, the sound of a scream becomes palpable and the work’s meaning changes. Like the startling character in the foreground, the timbral events of “Farben” give new meaning to the work. Why then do scholars keep analyzing only the background scene of “Farben” at the expense of considering all that is happening in the foreground? That is equivalent to only studying the techniques, form, and content of Oslo viewed from Ekeberg hill without even considering the (tortured, anxiety-ridden, surprised, or perhaps ecstatic?) figure in Munch’s masterpiece, or whether the figure is screaming or actually covering its ears in reaction to the potent scream of nature. The main reason “Farben” has been so misunderstood over the generations is that scholars have attempted to find the entirety of its meaning in its background scenery without paying proper attention to the screaming foreground features in front of them.
Figure 4.3. Edvard Munch, *The Scream of Nature*, 1893, oil, tempura, and pastel on cardboard, National Gallery, Oslo, public domain.
In order to understand Schoenberg’s music, as Rufer puts it, “The first thing to ask is: what is going on musically, what is the point?” It is a simple enough question, but it can be exceedingly complex to answer. The point of any music for Schoenberg is to express the musical idea in a comprehensible way.

4.3 Sketches

Turning to the sketches can help us understand what the core ideas of the work are at the deepest level. No new autograph sources have come to light since the publication of the relevant volumes of *Arnold Schönberg: Sämtliche Werke (SW)* detailing Op. 16. However, clearer interpretations are now possible. Held at the Arnold Schönberg Center in Vienna, the earliest sketches of Op. 16 are on two pages of the so-called little sketchbook, sketchbook III in Rufer’s catalogue, identified as Sk778–79 by the ASC, and on twelve loose sheets numbered ASC 1465–67 and 1477–85. In reverse chronological order, based on completeness of the material, the pertinent sketches are: ASC 1478, the first complete draft [*Erste Niederschrift (EN)*] of Op. 16 No. 3; ASC 1479 which contains earlier sketches for both Nos. 3 and 4; and Sk778–79, containing the germ of Op. 16 and representing its earliest form. The numbering system used for the sketches (S#) is convoluted but well established. Table 4.2 clarifies the sketch numbers, corresponding documents, and the transcriptions that have been published, while Figures 4.4–6 show the sketches enumerated on the loose sheets. S16–19 are on ASC Sk778,

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34 “Als erstes wäre zu fragen: was geht musikalisch vor, wovon ist die Rede?” Rufer, “Noch einmal Schönbergs Opus 16,” 367.
while S20 is on ASC Sk779. Found on ASC 1479, S2–4 are sketches for “Farben,” while S5 is a sketch for No. 4, “Peripetie.”

Table 4.2. Schoenberg’s sketches for Op. 16, No. 3

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<tr>
<th>Sketch</th>
<th>Source</th>
<th>Transcribed in</th>
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<td>S16</td>
<td>Little Sketchbook Sk778</td>
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<td>S20</td>
<td>Little Sketchbook Sk 779</td>
<td>SW:4, B, 12, 38, Keathley, 73</td>
</tr>
<tr>
<td>S2</td>
<td>ASC 1479</td>
<td>SW:4, B, 12, 34, Keathley, 78</td>
</tr>
<tr>
<td>S3</td>
<td>ASC 1479</td>
<td>SW:4, B, 12, 35, Keathley, 79</td>
</tr>
<tr>
<td>S4</td>
<td>ASC 1479</td>
<td>SW:4, B, 12, 35, Keathley, 78</td>
</tr>
<tr>
<td>S5</td>
<td>ASC 1479</td>
<td>SW:4, B, 12, 35, Keathley, 78</td>
</tr>
<tr>
<td>EN</td>
<td>ASC 1478</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Figure 4.4. Schoenberg’s Op. 16 sketches: S16–19 on ASC Sk778.

Figure 4.5. Schoenberg’s Op. 16 sketches: S20 on ASC Sk779.
Figure 4.6. Schoenberg's Op. 16 sketches: S2–5 on ASC 1479.
Elizabeth Keathley also details the genesis of Op. 16. She determines the fragments of No. 4 in the sketches of Sk778–79 to be the germ of the Five Pieces for Orchestra. As part of her discussion of the occurrences of the S16–20 in No. 4, she contends that S16 presents the “basic motif” of Op. 16. Most importantly, she identifies “the sketches of the little sketchbook…[as] pre-compositional spinings-out of motivic material.” Recognizable here is the homophonic principle of developing variation. Much of the piece is easily understood as deriving from these sketches due to its rhythmic and melodic profiles. No. 4 clearly exhibits developing variation regardless of whether we consider S16 in the strings at mm. 35ff., S17 in the clarinets in mm. 10ff., or even S19 in mm. 1ff. the basic motive of the piece. Keathley finds parallels in the compositional processes of Nos. 2 and 4, and argues, “Leaf 376 [and therefore Op. 16, No. 2] is a product of the working-out of the relationships among pre-existing motives, and the development of new materials from them.”

While the musical ideas of Nos. 2 and 4 are generated from the homophonic process of developing variation, those of No. 3 are not. Notwithstanding, there is still a connection to No. 4. ASC 1479, which contains the earliest sketches of “Farben,” also includes a sketch of the opening statement of No. 4. The relationship is evident. The first five arpeggiated pitches of S5 are a transposition of the “Farben” pitch collection. As discussed in detail below, if the initial pitch collection of “Farben” is T0, then S5 is a different inversion of the same pitch collection transposed up five semitones to T5.

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37 Keathley, 75.
38 Keathley, 74.
39 Keathley, 77.
(Example 4.2a–c). As Keathley argues, though, we might more accurately consider the “Farben” pitch collection to derive from S5, which in turn is related to S16–7 from the little sketchbook. In this way we can connect “Farben” back to the genesis of Op. 16. Although related to Nos. 2 and 4, No. 3 proceeds in a radically different way of presenting its musical form.

Example 4.2a–c. (a) “Farben” collection T0; (b) first five notes of S5; (c) “Farben” collection T5.

The sketches on ASC 1479 hint at the difference in presentations. The opening two measures of S2 are without doubt the opening two measures of “Farben” with orchestration already determined in its final form (Example 4.3). Apparently, Schoenberg’s first idea for the pitch movement was to move up by whole step, then down by half step as evidenced by the E ascending to F♯ then descending to F♮. Subsequently, he thought better of this approach, abandoned S2, and opted for the canon in “Farben” as depicted in S3. A practical man, Schoenberg did not rewrite the first two measures of S2 in S3, as these two measures were already finalized. Keathley surmises that while Schoenberg’s works often seem to have come to him “fully formed, keeping with his intuitive aesthetic ideal,” Op. 16 was first conceived melodically with harmony, meter, and color as later considerations. This may hold true for pieces other than No. 3;

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40 Keathley, 80.
41 Keathley, 80–83n24.
however, at least one of the timbral processes of “Farben” is evident from the first sketch and was conceived and finalized before the pitch process of the canon. It is impossible to say whether the initial timbres or pitch collections were conceived first; the likelihood of either scenario is equal. What can be seen in the sketches, however, is that the timbres (and pitches) of the first chord were conceived before the false start and before switching from pen to pencil (Fig. 4.6 above). The opening measures’ timbres, as marked at the beginning of S2, did not change from initial sketch to the work’s publication. Because of their different mediums, S2 and S5 possibly could represent work from a different time than S3 and S4. However, also possible is that after the false start, Schoenberg switched from pen to pencil to continue his work. A hypothetical scenario could be that working in pen he first sketched S2 and S5. Then, proceeding to work out the pitch movement but realizing he made a mistake or simply changing his mind, he abandoned the “Farben” sketch in pen and took it up again in pencil, this time, determining the canonic pitch movement as it appears in the completed work. Regardless of such a speculative scenario, the connections between sketches S2, S3, and S5 are evident.

Example 4.3. Transcription of S2 (ASC 1479).
On the other hand, S4 is decidedly distinct from the other sketches. It shows the ascending gesture that plays a crucial role in “Farben” (Example 4.4a–b). The gesture is occasionally called the “jumping fish” after an anecdotal reference by Robert Craft. However, that story originated more than a decade after the work’s composition, and, similar to each piece’s title, likely had little to do with its composition. The intervallic elements of S4 include an overall leap of a major ninth with an intervening major seventh in one voice, counterpointed with a chromatically altered octave of the originating pitch in a second voice. Parallels can be drawn between the major ninth of S4 and the minor ninths in S16–20. These similarities should not be surprising, however, because leaps of sevenths and ninths are a regular part of Schoenberg’s intervallic language.

Example 4.4a–b. Transcription of S4 (ASC 1479): (a) as written in sketch; (b) with stems reversed for legibility.

In addition to the large leap, the specific pitch classes link S4 to the other sketches. F♯ and F♯ are significant in ASC 1479 because they interrupt the sketching in the fourth and fifth bars of S2. Both are present in S3, but F♯ takes the more prominent role as part of the first and last iterations of the descending gestures (Example 4.5). Here, the sketches offer one more intriguing possibility—the initial F♯ in the descending gestures could be a remnant of the derelict F♯ in S2, making its descent an inversion of

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Craft, “Schoenberg’s Five Pieces for Orchestra,” 15–16n9. Craft identifies the “jumping fish” motive and implies its origins lie with Egon Wellesz (1925). However, Wellesz does not specifically mention the motive or its piscatory moniker in his 1925 book.
Schoenberg’s original idea for the pitch canon. S3 shows that the descending short-long gesture is associated with the idea of the morphing pitch collection. If the F♯ from the false start in S2 was retained in the descending gestures at the end of S3, perhaps it was also the originating point of the F♯ in the second voice of S4. Considering the other pitches of S4, G₄ does not have as strong of a connection to other portions of the sketches, but E₃ is the goal of both the first and the upper voice of the last descending gesture in S3, as well as part of the initial pitch collection.

Example 4.5. Transcription of S3 (ASC 1479).

Unfortunately, S4 has been improperly transcribed by both the SW and Keathley. The SW slurs the F♮ to the F♯ while Keathley has a mistaken accidental in addition to following the SW’s slur placement. She mistranscribes the G♮ as G♯ and F♯ as F♮. The incorrect slur in both secondary sources seems inexplicable upon close inspection of the sketch (Figure 4.7). The slur clearly stops short of the G♮, which is already to the left of the F♯. There is no justification for carrying the slur over to the F♯ in the transcription. Furthermore, the stem directions clarify that they are distinct voices. The errant accidental is more understandable given its high position relative to the note heads; it

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43 Keathley, “Schoenberg’s Opus 16/IV,” 78.
does appear at first to be connected to the G rather than the F. However, even a cursory familiarity with the music reveals that it could not possibly be so. The ascending major ninth gesture of F₇-E₉-G₉ is found throughout the work counterpointed by F♯ in another voice. Moreover, as there is no clef in this sketch, we can only assign our reference point through confirmation with the score.

Figure 4.7. S4 manuscript detail.

The most important aspect of S4, however, is that it is a contrasting idea to everything else on the page. Surely, it is related; but S4 does not result from a clear process of developing variation as S17 does from S16 or as S18–20 from the previous two. Its medium (pencil) associates it with S3, but its location on its own stave, far removed from S5, and in the negative space between and below S2 and S3 sets S4 apart from the other sketches (see Figure 4.6, above).

The greatest factor distinguishing S4, though, is that it is contrapuntal in nature rather than homophonic. The different stem directions imply different voices. From the F₇, with stems pointing down, the gesture ascends a major seventh to E₉, then a minor third to G₉ (these three notes are slurred). The G₉ is independently accompanied by F♯ in a second voice with an upward pointing stem (see Ex. 4.4, above). This configuration illustrates that though they sound together, they are separate voices and we can expect
separate voice leading to and from each. Indeed, as discussed in detail below, the music confirms this deduction.

The early sketches shed light on at least three musical ideas in “Farben”: (1) the orchestration of the “Farben” pitch collection was composed in its final form before the pitch canon was, (2) the workings of the pitch canon are revealed, and (3) S4, the ascending gesture, is a distinct, contrapuntal idea. It should be emphasized that ideas in sketches are just a starting place and do not represent all that is important in the piece. But awareness of the kernels of inspiration that stimulated the composition provides another avenue of understanding. More clues are given by the first complete draft (EN), considered in the ensuing analysis.

4.4 Analyzing “Farben” I

4.4.1 Contrast

Schoenberg puts it succinctly, “Large forms develop through the generating power of contrasts.”\(^4^4\) One of the common results of contrast is tension and relaxation. As McAdams points out, “[The] movement [of tension and relaxation] has been considered by many theorists as one of the primary bases for the perception of larger-scale form in music.”\(^4^5\) For example, the basic tonal formula is that a tonality is established, then there is harmonic contrast providing tension, and a return through a resolution that relaxes the tension. The resulting musical form is a process based on contrast that must be unfolded through time. As McAdams finds, “Timbre can also play a role in larger-scale movements of tension and relaxation, and thus contribute to the expression inherent in


musical form.” As simple as the fundamental aspect of contrast may seem, it cannot be overlooked when music becomes as complex as it did in the early twentieth century. For Schoenberg, contrast is still a requirement of post-tonal music; tension and relaxation remain at the very core of his practice, even though they may no longer be associated with tonality. According to Schoenberg, “All good music consists of many contrasting ideas,” and “Farben” is no exception. Whether on the surface or buried deeper in its structure, the many levels of contrast within “Farben” provide a wealth of analytical jewels waiting to be unearthed.

4.4.2 Form

As challenging as the work can be, its form is surprisingly simple. In an ironic twist, “Farben” is a ternary form, the very type that Schoenberg, in his 1951 essay, criticized Webern for using. Within its ABA’ configuration there is general agreement on formal articulations at mm. 10–12 and 30–32. I argue that these formal divisions are punctuated by changes in timbre, chord transposition, and the controlling motive of the work.

Debate about form in Op. 16 can be traced to a well-documented exchange of letters between Schoenberg and Richard Strauss in 1909, in which Schoenberg claims the Five Orchestral Pieces have “no architecture, no structure.” In response to this claim Mäckelmann writes:

It will become clear that Schoenberg’s statement to Strauss—that in the orchestral pieces there is ‘no architecture, no structure’ to be recognized—is to be assessed merely as a pointed characterization of a completely new style that seems to

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46 McAdams, 100.
47 Schoenberg, Fundamentals of Musical Composition, 94.
negate all conventional formal ideals, which the actual design of the work in no way meets. Rather, we will discover in them a thoroughly directed ‘structure’ and an ‘architecture’ that albeit multilayered, is nevertheless comprehensible, in which it becomes apparent that the ‘restriction’ which Schoenberg had imposed upon himself by renouncing the structuring possibilities of tonality did not necessarily mean the loss of formal design principles, but for the time being, ‘only’ led to an unfamiliar concentration of thematic-motivic processes.49

Mäckelmann astutely points to multi-layered structures, a key concept throughout Op. 16. In “Farben,” the multi-layered structures are embedded within the foreground, where multiple musical ideas impart meaning to the work. As Robert Craft wrote, “The deployment of orchestral timbres is the chief accessory of the form, the means with which the ‘changing chord’ is sustained.”50 The changing chord requires something else to sustain it; alone, it is not enough. Timbre is the means with which Schoenberg chose to supplement the chord and to impart form to the work.

4.4.3 Pitch Content

The pitch content of “Farben” is well-trodden analytical ground. The artfully constructed pitch collection that serves as the basis for the morphing organism can be considered in a number of ways (Example 4.6a). In a conventional pattern of thirds, the collection is a chromatically altered ninth chord in first inversion—a minor triad with a major seventh and ninth—hardly conventional (Example 4.6b). Of course, Schoenberg

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was hardly conventional himself. His discussion of ninth chords in *Theory of Harmony* shows “a few [chromatically altered] possibilities” and how they might be used, keeping to the practice of the modified tone continuing in the direction of its change.\(^5\) The particular chromatic alteration of the “Farben” pitch collection does not appear, though, likely because Schoenberg would have found the major seventh problematic. There are no alterations with the chromatically raised seventh, only the more typical minor seventh. Ninth chords are certainly not novel sonorities in Schoenberg’s œuvre. One of the most famous examples caused an uproar when, according to Schoenberg, the ensemble refused to perform *Verklärte Nacht* (Op. 4, 1899) on account of the chord in mm. 41–42 (Example 4.6c).\(^5\) Schoenberg later explained he used the ninth chord in fourth inversion “without knowing theoretically what [he] was doing—[he] was merely following [his] ear.”\(^5\) Schoenberg finds that it was the inversion with the ninth in the bass that theorists condemned, and that ninth chords in inversions had become commonplace by the time he wrote *Theory of Harmony*.\(^5\) The *Verklärte Nacht* chord is similar to the T11 transposition of the “Farben” pitch collection; only the lowered third and raised seventh differentiate it. This similarity could certainly justify viewing the “Farben” pitch collection as an unorthodox ninth chord; however, the issue of the major seventh remains.

\(^{52}\) Schoenberg, 346.
\(^{53}\) Schoenberg, 345–46.
\(^{54}\) Schoenberg, 346.
Another way to view the T0 pitch collection is as a dominant triad (E₃-G♯-B₅) superimposed on a tonic minor triad (A₅-C₅-E₅). It is certainly possible to hear “Farben” in A minor. If that interpretation is taken, the third of the “tonic” is missing in the T11 transposition when the bass drops out in mm. 11ff. (C♭ enharmonically spelled as B♭). Yet more ways to consider the pitch collection include a form of the ordered pitch class set [01348] or as a construction of fourths, but this last reading is harder to justify theoretically. Perhaps best, we should simply think of the “Farben” pitch collection as a consonance—for Schoenberg they are all consonances; the question is to what degree.

Regardless of how one theoretically constructs the pitch collection, its movement by canon can be confirmed. In Burkhart’s analysis, the *modus operandi* of the pitch transposition from T0 to T11 is canonic movement up a semitone, then down a whole tone in the voice order: 2-1-4-3-5. The first section is simple and straightforward, but the music becomes much more complex after that. Burkhart explains that after the canon ceases at the end of the first formal segment, it returns briefly in m. 29, and again in inversion in mm. 32–38, this time with the voice order 2-4-1-3-5.

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56 Burkhart, 146–47.
The most important aspect of the canon, though, is that it is a process Schoenberg uses to progress from T0 to T11. In post-tonal music, without the chord progressions relied upon for so many generations, other types of processes are of the utmost importance. Many pitch analyses of “Farben” can be misleading because they do not identify whether the tones sound in the background or foreground plane and if they are part of a particular process or not. For example, Mäckelmann’s “Example 20” does not distinguish the source of the pitches and makes it appear as if there is continuous voice leading in mm. 20–21 and 24–25.57 Likewise, Cogan and Escot’s “Example PO.2” places pitches according to register and therefore may fool someone into thinking those pitches are related to one another by progression or a process of some sort.58 Burkhart’s analysis is the strongest in this respect. He not only illustrates the canonic movement, but also describes the voice leading and gives a sense of the processes involved.

Example 4.7 shows the textural analysis version of a planal analysis of “Farben” and will serve as the main analytical example for the following discussion until Example 4.8 is introduced.59 The fundamental pitch movement of “Farben” is easily reducible to a simple lower neighbor motion in the first 32 bars, then a prolongation of T0 through the end. Over the course of the work the pitch content creates two large-scale turns. First, from T0 in the A section to T11 in B, then rising above the original transposition to T2 in the morphing organism before returning to T0. T3 is hinted at in the foreground in m. 20,

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58 Cogan and Escot, Sonic Design, 416.
59 The visual style of Ex. 4.7 is developed from Klangfläche technique. This version of the planal analysis emphasizes textural foreground and background. It preserves the formal divisions of “Farben,” while communicating horizontal connections with slurs. In the second version of the planal analysis (Ex. 4.8), the auditory experience of textural streams formed by timbral lines in “Farben” is more directly rendered.
while T4 is obvious in m. 25. The collective, however, stays within a narrower tessitura.

With the return of T0 and the A’ section, mm. 38–42 betray a tighter turn directly encircling T0 with T1 and T11 before the final measures. The underlying pitch movement can be seen in the “background transposition” in the planal analysis.


While Burkhart’s analysis shows that arrivals on pitch transpositions occur near structurally important places and comprehensible processes do exist, those processes are obscured. He finds the pitch and large-scale rhythms to be as “inert and unassertive as possible.”60 The ear does not necessarily follow the *progression* of pitches; the timbres are what the ear tracks through time. While one can learn to understand the pitch content through careful study, as Rahn admits, the canonic pitch movement is difficult to hear.61 And as Forte puts it, “Important linear [pitch] progressions…are concealed by the complicated orchestral tapestry.”62 Lee Tsang attributes the obfuscation of the pitch process to the “combined perceptual effect of onset synchrony and the lack of timbral differentiation [which] is so powerful that it outweighs the combined effect of all of the principles [of voice leading that] promote the [independent] streaming of the canonic voices.”63

The musical idea of the pitch collection and its transposition is clear. However, it is a background idea that does not govern the whole. It sets the scene, but it does not

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provide the action. Schoenberg’s clever masking of these pitch processes allows the timbre processes to come to the fore, creating the balance for which Dahlhaus called. According to Burkhart, “The changing-chord organism…reveals a very tight and solid pitch construction, but one that is so simple and devoid of pitch embellishment that, by itself, it could not sustain interest.” Of course, the background plane is not actually static, but I conclude as Burkhart does: the pitch content of the background organism aspires not to move, and the basic idea of “Farben” is Farben. But which Farben—which timbres are the main idea of the work?

**4.4.4 Timbre in “Farben”**

Not surprisingly, because we inhabit a pitch-centric field, but utterly shocking because of the nature and reputation of “Farben,” many previous analyses have concentrated mainly on the pitch content and its canonic movement without discussing timbre in a significant way. When it is discussed, many analyses suffer from the same malady of studying only half the music, symptomatic of considering only the background without the foreground. For example, Burkhart, generally the most thorough of the lot, only takes into account the background organism with one exception, the string punctuations. He classifies them as part of the changing-chord organism; but as will be shown below, and as he himself admits, “They are a decidedly separable group.” He disregards the piccolo, harp, and celesta, and therefore, many of the work’s foreground sounds.

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65 Burkhart, 172.
66 Burkhart, 153.
To be sure, the morphing of the background organism is a timbral idea; but it is only one timbral idea. When Burkhart writes, “The dimension of the work that holds us from moment to moment is, of course, color,” he has the pulsating color changes of the morphing organism in mind.\textsuperscript{67} However, the colorations added by the many foreground events and their interactions with the background impart the essence of the composition. According to Burkhart, “The basic idea of the instrumentation of the organism is not only to change on every half-note to a different quintet [or quartet], but, also, never to repeat a particular instrument combination in either original or permuted form.”\textsuperscript{68} In his analysis he finds eighty-seven different quartets and quintets of simultaneous timbres generated in the morphing organism; he calls them verticalities. Apropos of the decade in which Burkhart was writing, he makes much of what he calls a serially ordered passage of verticalities. However, to his benefit, he cautions the reader not to find too much significance in this, for either “Farben” or Schoenberg’s later development.\textsuperscript{69} That Schoenberg uses a particular order and then reverses that order should not be unexpected from the mind that later theorized the tone row manipulations of twelve-tone composition. The serially ordered passage occurs in the second half of the B section, mm. 26–29, and is obscured by the rapid onsets of timbral events in the foreground plane. I will not make the claim that it is impossible to hear, but Schoenberg does not make it comprehensible. The series of timbres and its retrograde is not the main musical idea. Burkhart finds it “powerfully suggestive” that the serially ordered passage is centrally

\textsuperscript{67} Burkhart, 151. 
\textsuperscript{68} Burkhart, 151. 
\textsuperscript{69} Burkhart, 166.
located between two areas of twenty-six different timbral verticalities. However, to find structured serialization of timbres and assign it weight in the compositional process would be speculative. Fortunately, Burkhart stops short of assigning it compositional weight and concludes that a universal system governing symmetries is not to be found in “Farben.” According to him, “[The] large-scale instrumental relations…are not regulated by procedures comparable in scope or strictness” to the serially ordered passage. He finds, “Clear-cut divisions [are]…foreign to this work.” In the end, Burkhart’s analysis of timbre is largely descriptive and does not offer insight into the musical logic of the piece.

As important as Burkhart’s detailed investigation is, Alfred Schnittke’s short analysis is perhaps the most insightful. Even though I disagree with some of his conclusions, Schnittke is the first to discuss timbre in terms of a “principle theme.” He does not fully recognize the timbral morphing itself as the principle theme, nor does he mean a theme in the traditional musical sense. He actually considers the whole first formal section (mm. 1–11) the principal theme but recognizes that in addition to the pitch canon—what could be called the thematic melody of pitches—the first subject is constructed on the basis of a “gradual recoloration of the chords.” He considers the totality of mm. 12–25 the second subject but finds it characterized by contrasting “acute

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70 Burkhart, 168.
71 Burkhart, 168.
72 Burkhart, 168.
73 Burkhart, 172.
75 Schnittke, 113.
76 Schnittke, 114.
timbral jumps.”\textsuperscript{77} He even finds a “development” in mm. 26–31.\textsuperscript{78} By using the terms first and second subject as well as development, Schnittke invokes sonata form. Following his approach, the exposition would be mm. 1–25 (mm. 1–11 are the first subject, and mm. 12–25 are the second subject), the development would be mm. 26–31, and the recapitulation, although he never uses the term, would be mm. 32–44. The obvious imbalance of his formal divisions raises questions about this approach, but the actual experience of the music and the temporal unfolding of its artistic journey—its contrasts, tensions and resolutions, and arrivals through goal-oriented processes—refutes any attempt to force sonata form onto it. To his credit, even though he uses those terms, Schnittke does not claim “Farben” is a type of sonata form.

Although “Farben” is certainly not a tonal work in a standard form, the influence of common practice tonality and formal procedures still weighed heavily on Schoenberg in 1909. If we liken “Farben” to a typical ternary form tonal work, we might expect a large-scale I-V-I architecture with tonal tension built and the need for resolution apparent. Here, instead of emerging through pitch content, tension is relayed through timbre. Schnittke identifies some of the core elements of Schoenberg’s timbral composition but errs when he contends, “The timbral and pitch recolorations of this chord constitute the \textit{sole} [emphasis added] impulse that shapes the work.”\textsuperscript{79} The background layer is indeed the foundation of the work, but it is not the only idea. In fact, Schnittke does identify another aspect of the timbre but is unable to get past his pitch-centric bias to recognize it as a theme in its own right. According to Schnittke, the B section is

\begin{footnotes}
\textsuperscript{77} Schnittke, 114.
\textsuperscript{78} Schnittke, 115.
\textsuperscript{79} Schnittke, 113.
\end{footnotes}
characterized by acute timbral jumps, a breakdown of periodicity, and a “structural instability that admits the intrusion of alien decorative elements.” Not just decorative, these alien elements are actually the increased timbral activity of the foreground plane. According to Schnittke, “[The] chain of timbral continuity” at the beginning of the piece “loses any periodicity whatsoever” when the “destructive, quasi-improvisational elements, which appear first at the end of the first section and continue their depredatory work in [the second] collide with fragmented pieces of what was once a well-ordered structure, but is now, after prolonged internal spasms, disintegrating.” Rather than viewing them through a destructive lens, reframing the increased timbral events positively results in a better understanding of the music.

Building upon Schnittke’s argument, on one level, I recognize the timbral morphing itself as a motive, and the increased timbral activity, those “destructive alien invaders,” as a contrasting motive. The increased activity in the foreground plane decreases the time between timbral events, or their inter-onset intervals. The more rapid timbral onsets have been noted before; Cogan and Escot term them a “constant increase of activity on several different temporal levels.” I call them part of a faster timbral rhythm.

4.5 Timbral Concepts I

4.5.1 Timbral Rhythm

*Timbral rhythm* quantifies the durational change in the specific timbres or the timbral profile of the music; it is similar to harmonic rhythm. Rhythm is commonly

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80 Schnittke, 114–15.
81 Schnittke, 114–15.
82 Cogan and Escot, *Sonic Design*, 419.
associated with measuring the duration of a pitch, but it actually measures the duration of
a tone. Rhythm is concerned as much with timbre as it is pitch. Just as timbre is the
totality of frequencies present in the tone while pitch is only one, more easily measured
frequency, duration and loudness are also part of the indivisible musical tone. The
conjoined quadruplets are all one, yet they are individuals with different capabilities. One
difference lies in how we treat them qualitatively and quantitatively. As established,
A440 played on a violin is a different tone than A440 played on an oboe; the pitch is the
same but the timbre changes and so too does the musical tone. Similarly, A440 and A880
played on the same violin are different musical tones; here, the timbre and pitch have
changed.\textsuperscript{83} However, if A440 is played on the same violin for 0.5 seconds then again for
2 seconds we consider it two occurrences of the same musical tone because the factors
determining timbre and pitch are different than those that determine duration.\textsuperscript{84}
Obviously, a quantity of two tones occurred, and that is what is being measured rather
than their quality.

Rhythm is not just concerned with the numerical quantity, of course, but the
relations of the occurrences. If we analyze the rhythm itself, we could study the
individual attacks, durations, strong and weak beats, emphasis or lack thereof, and the
patterns created by these factors in either the pitch or timbral dimension. With a goal
toward analyzing musical logic through timbre, we consider the sounds made and the
rhythmic patterns created as they occur: we focus on the durational aspects of the timbres
produced, rather than focusing on the relationships created by the durations themselves.

\textsuperscript{83} The timbre has changed because register contributes to timbre.
\textsuperscript{84} Assuming all factors affecting timbre and pitch are unchanged.
In “Farben,” there is an obvious difference between the slow and steady timbral rhythm in the A section and the rapidly increasing timbral onsets as the music approaches its climax in m. 30. The contrast created in the rate of timbral change interests us here. The background and the foreground planes of “Farben” have distinctly different timbral rhythms. The first timbral motif, the steady pulsating of the morphing collective, is like a healthy heartbeat, always there, in the background, but not always the focal point. Growing organically from the basic pulse and demanding attention are the foreground events, the second timbral motif.

Timbral rhythm in “Farben” provides a fundamental contrast that interacts with structure. Schoenberg plainly tells us how he uses rhythm: “In general, rhythmic features help to establish the mood and special character of an individual piece, as well as to provide the structurally necessary internal contrasts.”85 One way Schoenberg uses rhythm is to create structurally necessary contrasts. In music, there is a general tendency for rhythms to change in contrasting formal segments and for rhythmic activity to increase or decrease before a cadential moment. These general tendencies project onto timbral rhythm as well. An increase in timbral activity before a repose or a climactic or structural moment helps create the impact that structural moments of music have. As Burkhart observes, “Pauses in the rhythm of color change” are one of the factors that articulate form in “Farben.”86 The pauses, or moments of repose, that Burkhart mentions are actually timbral cadences.

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4.5.2 Timbral Cadences

A *timbral cadence* is analogous to a tonal cadence; it closes a musical statement by providing a sense of arrival, usually accompanied by a pause. Various types of tonal cadences are defined and debated; some are quite stable, while others may lead to varying degrees of cadential satisfaction. But one thing they all have in common is that they are teleological processes. According to Neuwirth and Bergé, “The concept of closure is no doubt crucial to understanding what many consider the essence of eighteenth- and nineteenth-century music: its emphatic goal-directedness.” Post-tonal music is still goal-directed; however, the goal is not necessarily an arrival on a particular tonal harmony. In 1909, Schoenberg was actively breaking down the traditions of tonality, but there was not yet any set of guidelines as to what would rise in its place. Timbral cadences were one possible way of punctuating the new music.

Timbral cadences are not just the juxtaposition of two sounds, though; there must be something substantive to their nature. To have meaning they must still function as tonal cadences do in musical logic. It is the essence of a cadence that is important in this case; a cadence closes a portion of music by arriving on a confirming statement of some sort. Arrival on a confirmation is accomplished through a contrasting element, often through tension and relaxation. In tonality, for example, a dominant chord provides a compulsion for the tonic. However, in the realm of timbre, which does not have a hierarchical system like that of pitches, tension cannot work in such a plain way. Timbral cadences must be more deliberately composed through contrast and arrival. We have

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already encountered a timbral cadence: the arrival of the clarinets in their middle register at the end of the introduction to Mahler’s First Symphony. Contrasts of instrumental register, rhythm, and texture all contribute to the successful arrival of the timbral process in that tonal environment. More explicit, the timbral cadence in m. 30 of “Farben” is a remarkable example; each of its many facets displays cohesion and logic. But before discussing m. 30, we must develop further our analytical language and timbral theory. Not only do timbral cadences mark structural or transitional moments, but they can also be used to modulate to a new timbre.

4.5.3 Timbral Modulation

Timbral modulation is the progression from one home timbre to a new home timbre, similar to tonal modulation. A home timbre, or timbrality, is the timbral idea that dominates the texture or acts as a reference point for the music. The timbrality is a timbral key of sorts, analogous to the home key being the tonality. Timbral modulations can be accomplished by many of the same methods as their tonal counterparts—techniques to proceed from one timbrality to another can include direct, sequential, common-tone (timbre as the tone), etc. In tonal modulation, pitch cadences often confirm a new tonality or offer a final punctuation of one before departing for another. Similarly, timbral cadences often punctuate beginnings and endings of a particular timbrality.

Timbral morphing, on the other hand, is the change from one timbre to another within the same musical line. It is the line itself that is metamorphosing; its timbre is changing from one sound to another, but the line or idea remains the same. Timbral morphing is similar to progressive orchestration. Goodchild and McAdams define progressive orchestration as “a succession of gradually changing blended or integrated timbres, capable of unifying
all the transitional instrumental combinations into a coherent grouping.” Timbral morphing and progressive orchestration can be methods of accomplishing a timbral modulation from one timbrality to another, but not necessarily so; they may also be present without modulation. The difference between timbral modulation and morphing is important to note.

4.6 Analyzing “Farben” II

4.6.1 “Farben,” mm. 1–11

Consider the opening eleven bars of “Farben.” Schoenberg first establishes the timbre of the morphing organism, like establishing a home key. The pitch content does not change for three full measures; only the steady pulsation of timbres provides musical activity. Schoenberg maintains the same general timbral profile during the slow transposition to T11. Even though the individual timbres change, clearly one idea is expressed; its essence is the same—it continues to be the same morphing organism. There is a nuanced difference from beginning to end, but not nearly enough to consider mm. 9–11 having a different timbrality than the opening measures. As such, there is no timbral modulation through the A section. The first eleven measures of the background collective consist of flute, English horn, clarinet, bassoon, horn, trumpet, and bass; only the viola drops out while the contrabassoon is added. Of course, the cellos enter in m. 10, but they are not part of the background organism, nor are they a continuation of the viola’s C#4 from m. 8; rather, they are a string punctuation, a decidedly separable group. Here, the

88 Goodchild and McAdams, “Perceptual Processes in Orchestration.”
separation is reinforced by the measure-and-a-half rest (mm. 9–10). The contrabassoon B♭2 in mm. 9–11 is the completion of the viola’s C#4 and the canonic movement up by half step then down by whole step. The contrabassoon’s B♭2 also reinforces the solo bass, enhancing the link between the background and the descending gestures in the winds. The timbral idea of the first formal segment is the blended, slowly changing timbres of the ensemble. Although not all instruments are playing, the morphing collective can be thought of as a quasi-tutti timbre; it creates an emergent timbre as a collective. Furthermore, continuity of the timbral collective is maintained because the morphing organism as a whole is one part of the texture. Although there is activity within it, the organism never ceases being a collective and it does not function outside of its own textural layer. The morphing organism is a coherent and comprehensible musical line. As Tsang puts it, the rate of timbral change is sufficiently slow for a single auditory or textural stream to be perceived. Accordingly, in Example 4.7, the morphing organism is represented in the background plane, its pitch content reduced to the fundamental movement of the pitch collection.

4.6.2 Foreground Events

Timbral events that strikingly emerge in the foreground, only to converge into the background as if through acoustic decay, provide much interest in the opening section. Although somewhat subdued, the increased timbral rhythm of their descending short-long utterances helps provide a forward trajectory to the otherwise lethargic morphing. If the foreground events provide a trajectory, though, it must lead somewhere. Indeed, it leads

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to the end of the A section and the work’s first timbral cadence. Just as T11 is the pitch goal of the canon, the *sul C* string timbre in the cellos supported by contrabassoon is the goal of the timbral journey, reinforced by a moment of repose. The fermata in m. 11 confirms the music’s segmentation.

The pitch content of m. 9 is designed so that eleven of the twelve tones are present. The missing C♯ was in the viola and bass the previous measure. Its absence in m. 10 allows the B♭2 of the contrabass and contrabassoon to provide a bass line unfettered by confusion. Indicative of the transitional period of Op. 16’s composition, this passage shows Schoenberg using all twelve tones while still having concern for bass movement, even root progression in this case because B♭ is the “root” of T11. Yet at the same time, the chromatic saturation undermines the primacy of any one pitch center. Also notable is that the open sonorities of perfect fifths in the descending gestures in m. 9 provide an undeniable consonance within the concentration of pitches.

The pitch process of the canon is de-emphasized in the approach to the cadential arrival. Save for the B♭2 in the basses and contrabassoon in m. 9, T11 is inconspicuously reached in m. 8, obscured by the foreground activity. By the time the pitch canon completes its process in m. 9, it falls short of the cadential arrival by one-and-a-half measures. Cadences are a process; and in this case, the progression of timbres continues, evolves, and arrives at a goal, while the pitch process stagnates well before the arrival of the cadential sonority. As such, the pitch canon does not contribute to the cadential confirmation. The fermata in m. 11 extends the *sul C* cellos with only the contrabassoon in support. But here, B♭ is spelled enharmonically as C♯. In this instance, the notational difference indicates a textural shift, a shift from one line to another. The contrabassoon’s
bass tone of T11 is not part of the background canon, but rather part of the string punctuation in the cellos that is subtly layered upon that background. The string punctuation sonority appears to arise seamlessly from the common tones it shares with the morphing organism: but the seam, the point of conjunction between the sonorities, is the switch from B₂ to C₂ (B₄→) in the octave descent of the contrabassoon, coinciding with the entrance of the cellos in m. 10.

In this first cadential moment, and as the music departs from it, the timbres that define the work’s structure become apparent. If previous analyses have failed to find musical logic determined by timbre that is because they were looking for structure in the wrong timbres—only those of the background. What are the right timbres then? The answer is, of course, all of them, but there are four timbral groupings that have function in communicating musical logic throughout “Farben”: first, the morphing collective, consisting of the mixed ensemble but excluding harp, celesta, piccolo, and strings distinguished through playing technique (harmonics and sul C); second, the strings in harmonics or sul C (cellos); third, the harp, supported by the celesta and piccolo; and finally, the clarinet family, occasionally colored by the double reeds, trombone, or bass. Each of these four groups forms a structural timbral line.

4.7 Timbral Concepts II: Textural *Klangfarbenmelodie* and Timbre-melodies

*Timbral lines* are similar to melodic lines; they are cohesive, autonomous constructive unities connected by their intrinsic values that move forward through the music. Timbral lines are *Klangfarbenmelodien* in its literal meaning, timbre-melodies. Once these timbral lines are arranged with a logic that satisfies, there is
Klangfarbenmelodie! That is, there are two definitions of Klangfarbenmelodie: (1) the literal meaning of timbre-melody—a timbral line—and (2) the textural principle that is a stylistic presentation form akin to homophony or polyphony. The former is needed to create the latter.

Pitch-based melodies and the timbre-based lines share the property of being something the ear tracks through the music. They both have a trajectory and are usually part of a teleological process. In pitch-melodies, cohesion is often accomplished through timbral continuity. In other words, timbre is one of the most important ways of establishing coherence, or auditory stream integration. In practice, timbral lines are often the textural streams of the music. All of the many techniques with which composers can unify a textural stream can be applied to timbre-melodies as well. Perhaps the most obvious way to create a connection between timbres is to employ sounds with a timbral affinity, evoking the similarity principle. A timbral affinity is a relationship between tones with timbral characteristics suggesting similarity or facilitating blend. Continuity of the same timbre is an extreme form of affinity. Just as important as timbral affinities is pitch or rhythmic material that connects timbral utterances to each other, evoking other principles such as good continuation or common fate. Of course, repetition also plays an important role. Timbral lines are often created by repeating a pitch or rhythmic pattern in different tone colors. In the case of the background organism, cohesion of the timbral line is accomplished through the overlapping changes that create a bond and the timbral continuity that is maintained within the organism’s timbrality. In addition to the morphing organism, “Farben” has three other timbral lines that seem obvious to the ear but have thus far escaped scholarly attention. Example 4.8 is the second version of planal
analysis, showing a timbral analysis of “Farben.” It illustrates each timbral line, or
textural stream, in a separate plane.

Example 4.8. See Appendix A for: Timbral analysis, Arnold Schoenberg, *Fünf

4.8 Analyzing “Farben” III

4.8.1 The Clarinet Line

We have already seen how the morphing organism behaves as a collective unity
that progresses forward in its own textural layer and how the descending gestures in mm.
7–9 help obscure the pitch process and prepare the timbral cadence in m. 11. Consider,
now, the line the descending gestures create. Texturally distinct, the clarinet-based line
continues through the entire work and can be considered a basic contrast to the morphing
organism collective (Ex. 4.8). The line is composed around the clarinet but that is not its
only timbre. At times, it also includes the double reeds, uses low brass as a coloring
agent, and contrabass to bolster its low end. In auditory scene analysis, when the sound
we hear is not the result of a single source but of a blended set of sources it is called a
chimeric percept.91 In this case, the brain must decide how to classify the sound. Gregory
J. Sandell identifies three types of timbre combinations: heterogenous, augmented, and
emergent.92 Heterogenous timbres maintain their separate identities. However, timbral
blend results from combined timbres that fuse in some way. An augmented timbre occurs
when one timbre embellishes another; an emergent timbre arises when a new timbre is
created from the blend. As Sandell shows, blend is facilitated by close pitch proximity,

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92 Gregory J. Sandell, “Roles of Spectral Centroid and Other Factors in Determining ‘Blended’
common timbral properties (for example, spectral centroid or spatial proximity), loudness (dynamics), and rhythmic characteristics (onset synchrony).\(^{93}\)

The clarinet line employs a mix of heterogenous and blended timbres. Linear coherence is cemented through repetition of pitch and rhythmic content, as well as timbral affinities—that is, through intrinsic values. Rather than just the descending gesture, the clarinet line also connects an ascending one in the contrasting section, but not just any gesture—S4 from ASC 1479. The timbral line progresses from the clarinet through the double reeds, first the English horn then bassoon, to the bass clarinet (Example 4.9). The link between the clarinet (m. 20) and English horn (m. 24) is confirmed by exact repetition, a rarity in Schoenberg’s music. By repeating the gesture at the same pitch level Schoenberg is providing a definitive link between the sonorities. Given his general distaste for exact repetition, this is a significant feature of the music that illustrates its cohesive nature. He makes sure that the timbral line is perceived even though the instruments are from differing families. Throughout the whole line, the rising gesture has fixed pitch-classes, only distinguished by octave displacement. Important to remember when considering timbre is that octave equivalency is a falsehood and register plays an important role. Other than the exact repetition between m. 20 and m. 24, each iteration of the ascending gesture is in its own unique register.

![Example 4.9. Progression of clarinet line in B section, detail of Ex. 4.8.](image)

\(^{93}\) Sandell, 216–17.
The morphing organism and the clarinet line work in partnership. Where the morphing organism is the background of the music, the clarinet line provides foreground activity that helps propel the otherwise languorous advance of the pulsating collective. Together, they form a functional group. The other two timbral lines, the string punctuations and the harp, celesta, and piccolo, contrast with the predominantly wind timbres of the first group to form a second functional group. However, the many-layered relations between all four lines are much more complex than two simple opposing groups.

4.8.2 “Farben,” mm. 12–31: The Harp and String Punctuation Lines

The block chord on the cello C strings is the cadential goal of mm. 1–11, but it also elides with the beginning of the teleological progression from mm. 12–30 when its fermata is extended to the downbeat of m. 14. Through retrospective reinterpretation the cello chord becomes a starting place, but at the moment of unfolding, the harp’s arpeggiation in mm. 12–13 launches the new formal segment of music. The harp’s distinctive timbre is a decisive indicator that a new musical phrase or idea has begun. Clearly, a timbral modulation has occurred. The harp becomes our new reference point awaiting a confirmation of some sort, just as would be needed in a tonal modulation.

After the initial arpeggiation overcomes the inertia of the languid organism, the piccolo and celesta echo the harp’s arpeggiation through *timbral imitation* in mm. 16–17. The four eighth-notes of the statement are still on the beat but are slightly longer than the four sixteenth-notes they mimic, giving the impression of a slightly less defined sound. Schoenberg deepens the echo effect by adding the celesta to only the middle two tones.
The grace notes sound in unison with the piccolo, while the eighth-notes provide harmonic reinforcement at the octave. This timbral imitation clearly substantiates the timbres as part of a cohesive line and confirms the importance of the harp’s earlier statement.

So far, the pitch content of the harp line has been related to that of the organism. The arpeggiation is an incomplete T11; its echo is on B₄, the pitch that completes the T11 collection, as well as a member of T2, the transposition of the background in mm. 16–17. When the line progresses forward, however, it too abandons its roots in the initial pitch collection in favor of the S4 motive. In m. 20, the harp and clarinet double the ascending gesture in unison, linking the two timbral lines and preparing a call-and-response-style contrasting gesture. The descent in mm. 20–21 in the flutes and piccolos answers the ascending S4 gesture. The ascent is supported by the celesta, whereas the descent is supported by the harp and pizzicato violas. Cohesion of the timbral line is reinforced on every level. The distinctive timbres, along with their registral placement above the background, allow the harp and its supporters to be heard as a melodic or thematic progression.

The moment of interaction between the clarinet line and the harp line is punctuated by a statement in violin harmonics. Not only do the string punctuations mark cadential arrivals, but also intermediary structural moments like this one. Rufer pointed out their importance early on. Discussing the transposition changes and formal articulations he observes, “[They are always associated with] a chord in harmonics in the strings, so that one could speak here of a motivically used timbre, which then lingers in a
Burkhart was the first to call these events “string punctuations.” He describes them as “an outstanding detail of the instrumentation that vividly contributes to the articulation of large-scale events in the overall structure.” He skirts his own disregard for the foreground events by finding them part of the changing-chord organism even though he deems them a decidedly separable group made distinct by timbre. However, this insight points to a fundamental truth about music—pitch and timbre operate simultaneously and can both carry functional meaning. The string punctuations operate in both dimensions of the music. Because they sound transpositions of the chord en bloc they are connected to the organism, but because their timbres are distinct from the morphing collective and because their pitches are not generated from the process of the morphing background, they resist assimilation into the organism. Not at all a futile gesture, they form their own cohesive timbral line.

For example, the string harmonics in m. 20 are an independent motive. The pitch process of the background sounds T2 (D♯ F♯ A♯ C♯ B♯), often with enharmonic spellings. The pitches of the violin harmonics in m. 20, though, are not part of the organism but are related to T3, containing G♯, B♯, and D♯, the triadic central part of the pitch collection, as well as G♯, which is related to the S4 ascending gesture in the same measure. The violins’ pitch content is not a result of the background motion, nor does it texturally connect to the background T2 statement. It is in its own distinct textural layer and is not progressed.

96 Burkhart, 153.
97 Burkhart, 153.
to from previous material. The same holds true four bars later in mm. 24–25. The background organism moves from T2 down to T1, but the harmonics of the string punctuation line progress from T3 in the high strings in m. 24 to T4 in the low strings in m. 25. The string punctuations do not arrive through any process of the morphing background chord; rather, they are impressed upon the preexisting texture in their own layer.

Contributing to the cohesion of both the harp line and the string punctuations is their occurrence at periodic intervals. The simplest way of reading the B section is in two parts of nine measures each, within which there is a (1+4+4)+(4+1+4) pattern. Essentially, after the harp’s initial statement there is a significant event every four measures, the penultimate of which is extended by one bar to complete the symmetrical construction of the B section. Four bars after the harp’s arpeggiation is the echo in the piccolo and celesta. Four bars later the important moment at m. 20 with the harp and clarinet lines interacting occurs, punctuated by the strings. At this point the sul C cello chord becomes part of the string punctuation line through retrospective reinterpretation. It has a strong timbral affinity with harmonics, sounds a transposition of the collection, and emerges in a distinct textural layer, all facets of cohesion. The second nine continues the pattern but is bisected by an extension of the string punctuation and a repeated ascending gesture that provides impetus for the increased pace of the timbral rhythm. The final four-bar section is the moment of rapidly increasing timbral onsets that leads to the most important cadence of the piece in m. 30.
4.8.3 Timbral Cadences and Quasi-cadences, mm. 11, 20, and 25

Through the timbral development that punctuates the formal process Schoenberg creates the forward momentum that carries the piece. I do not use the analogy of half cadences in mm. 20 and 25, yet they are quasi-cadential structural points. The difference between them and the timbral cadences at mm. 11 and 30 is the approach to the cadential material and a sense of closure. The cadences in mm. 11 and 30 arrive through progression, whereas the quasi-cadences at mm. 20 and 25 lack such an approach. The divergent pitch material discussed above, as well as the lack of repose does not impart a semblance of cadence in m. 20. However, in m. 25, the extension of the punctuation in harmonics and repetition of motivic material does impart a sense of momentary pause, but not closure, before the pace quickens in its final throes, yielding a fully satisfactory climax and arrival in m. 30.

4.8.4 De-emphasis of Pitch Approaching m. 30

One of the most important aspects of the timbral cadences in “Farben” is that they de-emphasize pitch, allowing timbre to be heard and understood as a defining parameter of the musical logic. At both formal segment articulations, the pitch content arrives at its final resting place well before the actual cadence. Although the pitch resting places do extend to coincide with the formal segmentation, they do not articulate the form; pitch is not the form-bearing parameter in “Farben.” As it did in the approach to m. 11, in the approach to the cadence at m. 30 the pitch content unceremoniously arrives at its goal in m. 29, masked beneath a heavy layer of timbral activity. The pitch process is not cadential, nor does it provide a sense of arrival; it is not the teleological goal of the
music. The timbral cadence governs the music, and the convergence of timbral lines in m. 30 is the arrival, the teleological goal of the music.

4.9 Timbral Concepts III: Timbral Counterpoint

Thus far, we have considered timbral events as they relate to their own lines, textural layers, and the work’s form, but we have not yet fully considered how they interact with each other. Individually, the clarinet line emerged from the collective, the string punctuations mark cadential and quasi-cadential moments, and the harp line initiates the timbral modulation and provides a periodic motivic statement that substitutes for a traditional melody. Together, they create timbral counterpoint.

*Timbral counterpoint* is the textural combination of timbral lines. It creates an example of the new epoch of polyphonic style that Schoenberg sought in his *Theory of Harmony*. Timbral counterpoint is an expression of the textural principle and presentation style of *Klangfarbenmelodie*. Schoenberg envisioned a music where harmonies were justified solely by melodic lines—that is, verticalities by horizontal procedures. When the horizontal procedures are timbral lines, the resulting verticalities are a new type of point against point statement.

4.10 Analyzing “Farben” IV

4.10.1 Cadential Preparation and the Rapid Timbral Onsets in mm. 26–29

The timbral cadence at mm. 30–31 is an exemplary model of timbral lines, counterpoint, modulation, and rhythm, that combines homophonic and polyphonic principles in the happy mixture of *Klangfarbenmelodie* that Schoenberg advocated. The timbral counterpoint builds from the beginning of the piece, adding voices to the texture as it progresses, fortifying each in turn. At the outset, the morphing collective is
established as the main referential timbrality. Then, the clarinet line is brought into being, only to converge back into the morphing collective before it emerges again to become the prevailing textural layer. The cadence in m. 11 brings about the first of the string punctuations in the cellos. In this opening section the base layer of the texture has been momentarily augmented by the beginnings of two different timbral lines. The B section embarks with the harp arpeggiation in m. 12. When the morphing collective begins again in the layer beneath, the harp is still the focal point of the texture. The harp line is reinforced in mm. 16–17 with the echo in the piccolo and celesta. This is where at least two textural layers are sustained, with a clear background and foreground.

The next important structural moment arrives in m. 20, when, for the first time, all four timbral lines are present (See the vertical alignment in m. 20 of Ex. 4.8). At this moment, the first verticality produced through the forward motion of all four individual timbral lines is created; it is a harmony of timbres made polyphonically—a verticality from the horizontal. Each sonority is part of its own coherent timbral line that can be tracked through the music as a textural layer. Trajectories are cohesively outlined by the timbres through the shared intrinsic properties of their lines. The morphing collective is in the background layer. In the foreground, both the harp-piccolo-celesta and clarinet lines participate in the call and response, punctuated with a chord in string harmonics. The viola in m. 20 streams with the harp because of the timbral affinity among plucked strings. Also in m. 20, an increased timbral rhythm becomes noticeable. Earlier, the piccolo and celesta’s echo of the harp closely resembles its model’s rhythmic profile with a deliberate and evenly spaced pattern, clearly imitating the previous material. But here, in m. 20, the pace of the timbral rhythm drastically quickens. The constant, slow
morphing still in the background accompanies the quick ascending and responsive descending gestures in the harp and clarinet. The string punctuation commences in the middle of the measure, providing a new timbral onset on the third beat. The result is a flurry of activity rather than the trudging background pulse. The interaction between the lines is reinforced in mm. 24–25 with each iteration of call-and-response. Rather than a simple “up-down” gestural combination, the forward-leaning trajectory is heightened with an “up-down-up-up” combination (note the first bassoon and bass clarinet in m. 25); the final “down” is delayed until the cadence in m. 30. The unfinished call-and-response statement lends urgency to the following measures, creating tension that must be relaxed. If the unfinished responsive statement was not enough to carry the piece forward, another obvious way to drive toward cadential tension and release is through increased rhythmic activity.

The rapid timbral onsets in the approach to m. 30 are easily recognized as an example of timbral rhythm helping to prepare a cadence. Tension builds through quickly increased activity. As the timbral rhythm accelerates through the section, the slow timbral morphing that characterizes the first motive continues but is gradually overtaken by the increased onsets of timbral events. Through a steady increase beginning in m. 26, by m. 29 the frantic activity completely overwhelms the slow timbral morphing of the background plane. Just as the morphing organism forms its own textural layer, the rapid timbral onsets operate as a single textural unity. Tsang agrees, “At one level, bars 26–29 of ‘Farben’ may be taken as a single textural segment.”⁹⁸ According to Huron, “In dense textures, groups of nominally independent parts frequently amalgamate into a single

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⁹⁸ Tsang, “Towards a theory of timbre for music analysis,” 40.
textural stream.” In this case, speed and density overcome heterogeneity to create an emergent tutti timbre. Momentarily excluding the tremolo ponticello of the middle strings—part of a different textural layer—the rapid timbral onsets are still background elements, albeit with a faster timbral rhythm. Their constant barrage is a stark contrast to morphing organism’s previous quality, providing welcome contrast. They are the background textural layer of the morphing collective becoming more active, vying for contrapuntal prominence against the other, more prominent timbral lines.

A unique timbre in the whole of “Farben,” the tremolo ponticello in the violas and cellos stands apart from the rapid background activity. It is a timbral bridge between the string punctuations and the morphing collective. The use of cellos connects to the sul C cadence at m. 11 as well as the punctuations in harmonics. The violas often offer a supportive timbre; in m. 20, they are employed pizzicato to support the celesta. Here, they bolster the cellos but drop out when the line descends beyond their lowest string before T0 is reached in m. 29. When they do stop assisting the cello, the contrabasses offer pizzicato support instead, also connecting to the background timbral onsets through the descending gesture. The tremolo ponticello descending scalar passage is the final “down” gesture responding to the “up, up” in the first bassoon and bass clarinet in m. 25. The unique tremolo timbre is the most prominent feature of the increased activity and provides a clear trajectory to m. 30—but not to the cadential material. The descending chromatic scale in cellos concludes in bassoons and contrabassoons on the downbeat of m. 30. The cellos are indeed part of the cadential sonority, but not as part of the

100 Though no direct connection has been established, the rapid timbral onsets elicit a comparison with Ligeti’s micropolyphonic Bewegungsfarbe technique.
progression of the *tremolo ponticello* pitch content. That pitch content clearly continues in the background rather than in any of the foreground cadential sonorities. The shift to harmonics signifies the shift in textural layer and line. The dual function of the *tremolo ponticello* passage is that its pitch and rhythmic activity are part of the background plane, but its timbre provides part of the contrasting cadential statement.

Perhaps the most significant factor of the cadential preparation in mm. 26–29 is that the whole orchestra, except harp, celesta, and piccolo, is involved in the increased timbral rhythm. Those three timbres are withheld, however, only to be introduced in the moment of greatest impact—at the cadence in m. 30—when the frantic timbral rhythm comes to a crashing halt and the timbral lines converge for a commanding moment.

### 4.10.2 Timbral Cadence at m. 30: Converging Contrapuntal Timbral Lines

The cadence in m. 30 is the work’s climax and most powerful musical moment. It provides definitive cadential closure after the frenetic combination of timbres. The cadential sonority lasts two measures, lending it more weight in the temporal unfolding of the work. It consists of the harp and string harmonics in m. 30 and the harp, celesta, piccolo, flute, clarinet, and violin harmonics the following measure—all structural timbres from the foreground timbral lines.

The harp’s timbral line is the arrived-upon sonority of the cadence. It bears the most functional weight and is the keystone in the work’s architecture. Returning to m. 20, the harp’s ascending gesture is followed by a chordal statement, masked as it is beneath the responsive descending gesture in the piccolos and flutes. In m. 25, the clarinet’s ascending gestures go temporarily unanswered, interrupted by the rapid timbral onsets.
But they are the call that the cadence answers. The ascending gesture, S4 from the original sketches, is highly prominent. With each iteration, it proceeds to a chordal statement in the harp.\(^{101}\) One more factor corroborates the harp answering the S4 gesture. In m. 12, instead of being preceded by the ascending gesture, the arpeggiation is in the form of an ascending gesture itself. Rather than spanning a major ninth, it traverses a minor ninth, a necessary adjustment so that it sounds members of T11, but still, the similarity is undeniable.

The pitch content also reinforces the crucial role of the harp. The harp’s arpeggiation in m. 12 is the incomplete T11 statement. In m. 20, the harp gives another incomplete T11 iteration, enharmonically spelled and in a different inversion, this time lacking B♭ instead of C♭. At the cadence in m. 30, the harp is the timbre that sounds the original T0. Though not part of the opening morphing collective, the harp articulates the lower neighbor architecture of the whole work. While the harp attacks T-0 in m. 30, the cello and contrabass harmonics sustain it through the length of the cadence. The flutes, clarinets, harp, and celesta reinforce the piccolos in m. 31, recalling the echo of mm. 16–17. T11 reverberates in the violin harmonics, enhancing the pitch ambiguity introduced by the piccolo and its supporters. During this pivotal period of Schoenberg’s career, he has a tendency to include as many pitch classes as possible to obscure obvious relations and confuse tonal expectations. But even with this masking, the pitch content confirms the work’s large-scale reduction to lower neighbor motion. The teleological processes of timbre and pitch are both completed in m. 30. All that remains is a satisfying denouement.

\(^{101}\) Discussed in detail below, the C#s in m. 41 are displaced from the chordal statement in m. 43.
The entire contrasting section is delineated by the harp, but the other timbral lines contribute much to the music. The harp and the strings combine to punctuate the formal repose. The low string harmonics extend the total sonority after the harp’s decay. The descending chromatic scale in the *tremolo ponticello* cellos functions similarly to the responsive descending gestures in mm. 20–21, but also connect to the string punctuation line as a modified string timbre. The morphing organism still resides in the background but drops out for most of mm. 30–31 to allow the cadential timbres to be unfettered by its persistence. The clarinet line operates much as it did at the first cadence in m. 11; it calls attention to the foreground and bonds the morphing organism to the foreground timbral lines. The timbral cadence at m. 30 in “Farben” is exemplary of timbre creating a satisfying and comprehensible musical logic: it seems Schoenberg’s new epoch has arrived.

### 4.10.3 “Farben,” mm. 32–44

After the climax, the A’ section sees the morphing organism return, this time accentuated with occasional timbral onsets providing a trajectory toward the end of the work and recalling previous events. The clarinet is the crucial timbre in the transition out of the cadence in mm. 30–31. Its function as a timbral bridge is evident here. It is a structural timbre and part of the cadential sonority, but it also provides a smooth transition into the morphing background. Its C♯4-B♭3-B♭3 movement in mm. 31–32 provides the inversion of the initial canon, now moving down by whole step then up by half step. It acts with the other structural timbres in support of the piccolo in m. 31, but it elides with the morphing background to restart the slowly pulsating organism after the emphatically satisfying cadential goal.
Once the organism is reinvigorated it is not quite as torpid as before, now layered with more frequent foreground activity. The work ends by recalling the timbres with which it began, thereby providing continuity throughout the piece. The clarinet, trombone, and bass clarinet sound together in mm. 38–39, combing elements that were separate in mm. 7–9. Likewise, the bass augments the harp in m. 39, connecting their timbral events immediately on either side of the formal division in mm. 9–12. The first half of m. 40 recalls the tremolo ponticello prior to the cadence with the same timbre in the middle strings. As before, it is the punctuation before an important event: the return of the ascending S4 gesture.

The piccolos rise above the rest of the orchestra in offering S4’s penultimate ascent before the harp replies with a seemingly out of place C#3. Now, at the culmination of the piece, C# is the bass voice in mm. 41–42 as part of the final canon inversion. This is the only instance in the work of S4 not being immediately replied to with a chordal statement in the harp. Still, the harp is the timbre that replies to S4, and it does not fail to meet expectations in the following measures. After the clarinet makes the final ascending gesture call in m. 42, with the harp offering the contrapuntal F#2 and G#2 no less, the harp again responds with its ultimate T0 chordal statement. This time in the same inversion and lacking the same member of the collection as its T11 statement in m. 12: it sounds an unmistakable V6+1 simultaneity. This moment reinforces the harp as a critical structural timbre in “Farben.” The work ends with a final fermata on the original transposition of the pitch collection in its original timbrality: the morphing collective.
4.11 The Erste Niederschrift

Returning to the sketches confirms our analytical conclusions. ASC 1479 establishes the connection between the morphing organism and the descending gestures. ASC 1478, the Erste Niederschrift (EN), reinforces it by revealing that the descending gestures in mm. 7ff. are connected to the bass line and part of that textural layer (Figure 4.8). Measure 7 of the EN shows the bass clarinet on the same staff as the bass voice of the organism, separated from the upper four voices by one additional staff. The clarinet, trombone, and bassoon articulation in m. 9 is on the intermediary staff, while the final descending gesture in the basses is on the bass voice staff. This arrangement highlights a deep parallel motion in sixths between the main pitch canon and descending gestures, respectively, from C₃ and E₃ (m. 7) to B₃ and D₃ (m. 9).
Figure 4.8. Schoenberg's "Farben," facsimile of Erste Niederschrift (ASC 1478).
Here, the *EN* illustrates a common challenge when analyzing timbre—tone color is not notated as pitch and rhythm are and, therefore, the entire first system gives the impression of one textural layer. However, when timbre is the parameter defining texture, first impressions from reading a score can be misleading. The harp in mm. 12–13 is a prime example; it seems at first glance to be part of a continuous progression of tones, but it would unreasonable to consider its arpeggiation part of the morphing background. Its timbre, the percussive attack of a plucked harp string, is a timbral disparity in stark contrast to the morphing background with its blended sounds and eliminated attacks. Not only is its timbre a startling contrast, but its pitch content and rhythm clearly set it apart. The harp states a triadic $V^6_1$ progression, avoiding the step-wise motion of the canonic background. Although a tonic chord is avoided, a tonally trained ear cannot help but hear such a common progression of tones. Rhythmically, the harp’s evenly spaced, arpeggiated notes allow quick and easy recognition and classification as a unified statement—a single auditory stream. The differences between the harp’s arpeggiation and the background morphing are drastic, yet they are not distinguishable on the *EN*. The harp’s arpeggiation is indicated by a short line above the notes similar to a mordent symbol rather than the more traditional vertical arpeggiation symbol. Schoenberg consistently uses this symbol for arpeggiated chords in his sketches.

The textural stratification in m. 20 is distinct. The violin harmonics, marked *Flag* for harmonics (Gr. *Flageolet*), the ascending gesture (S4), and the responsive descending statement in the piccolos and flutes are notated on separate staves than the morphing organism. Their places within timbral lines are not evident from the *EN* but they are markedly separate from the morphing collective. The significance of mm. 24–25 in the
music is evident from the *EN*. In m. 24, the violin harmonics, ascending gesture, and its descending response appear on separate staves. Here, there is no doubt of their otherness as there is adequate space in the grand staff of the morphing organism to include them had Schoenberg so desired. This point also has the first dynamic marking in the sketch. In the actual music, there are decrescendos and the morphing organism drops out, leaving only the string harmonics and the ascending gestures. But in m. 25 of the *EN*, the string harmonics take the place of the morphing organism in its textural layer. This evidence reinforces the association of the string punctuations with the morphing collective, showing that the punctuations operate in both musical planes. Mm. 24–25 are the last resting place before the increased timbral rhythm takes complete control.

Beginning in m. 26, the increase in timbral rhythm is obvious. Schoenberg notates the rhythm in straight triplets and sixteenth-notes, but this does not convey the complexity of the music. Some indication, however, is given by the vast number of timbral assignments written into the *EN*. Previously, with high-pitched harmonics written in the staff below the morphing organism (mm. 20 and 24), there was clear textural separation. From m. 26 forward though, it seems that staff distribution is related more to registral placement than textural layer. The cadence in mm. 30–31 and the restarting of the morphing collective in m. 32ff. is abundantly clear in the *EN*. If not scrutinized properly, the sketch may seem to indicate a pitch process governing the music rather than the timbral process. But with proper attention to detail, the *EN* shows that the pitch content unceremoniously arrives on T0 before the cadential moment, where Schoenberg clarifies the cadence’s timbres in the sketch. The *EN* supports the analytical conclusions.
4.12 Conclusions

In “Farben,” Schoenberg uses timbre structurally and motivically—emancipated from its tonal burden, timbre determines the inner logic of the work. “Farben” is chromaphonic music.

As the contorted figure in The Scream is the aspect that carries the most significance in Munch’s work, so too are the foreground events in “Farben.” Of course, the individual timbres of the collective have meaning; but in this case, they cohere into an emergent timbre that is the reference point of the music, the home timbrality. Whether called reflections, extra-chordal elements, or even alien invaders, the foreground events cohere into timbral lines of absolute autonomy connected by their intrinsic values—Klangfarbenmelodien (timbre-melodies)! The morphing organism is one timbral line, one Klangfarbenmelodie (timbre-melody) in the complex texture of “Farben.” To lean on an analogy one more time, this time evoking tonality rather than polyphony, imagine that the morphing collective is the pseudo-tonic sonority and the harp, the chief representative of the timbral individualities, is the pseudo-dominant sonority. After an A section that establishes a cadential reference on the pseudo-tonic, the music modulates to the pseudo-dominant and embarks on a development in that timbrality. The developmental B section cultivates the individual timbres of each timbral line and concludes with a cadence confirming the timbrality. After which, exactly as traditional rules of formal procedure dictate, the pseudo-tonic timbrality returns with the A’ section in mm. 32ff, bringing the work to a satisfying closure. The final cadential moment of the piece is a decisive

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102 Klangfarbenmelodie (1) in glossary.
pseudo-dominant harp to pseudo-tonic morphing collective. Although applying this sort of analogy to post-tonal music is difficult, it is illustrative of how traditional musical processes are still at work in Schoenberg’s post-tonal musical language in 1909.

Schoenberg thought he never accomplished *Klangfarbenmelodie*, but that was because he could not conceive of new forms that would replace the homophonic and polyphonic ones. In actuality, *Klangfarbenmelodien* do not require new forms; they only require comprehensibility. “Alas, suppose [the artistic vision] becomes an organism, a homunculus or a robot, and possesses some of the spontaneity of a vision; it remains yet another thing to organize this form so that it becomes a comprehensible message ‘to whom it may concern.’”\(^\text{103}\) Schoenberg never waivers from the idea of comprehensibility as an absolute requirement of music. “To whom it may concern” is an apt description of his musical ideology; he composes what he must as an artist and conveys it through means intended to make the listener understand the musical idea through its presentation in a form.

In 1911, Schoenberg gives what he calls a half-truth, “Chords are formed merely as *accidents of the voice leading*, and they have no structural significance since the responsibility for the harmony is borne by the melodic lines. There you have it!”\(^\text{104}\) In its broader context he is refuting the notion of “non-harmonic tones.” Of course, neither Schoenberg nor I assert that chords bear no structural significance at all. But for Schoenberg, chords can be the result of simultaneous melodies and structures are often built through linear means, a notion of supreme importance for *Klangfarbenmelodie*. As a

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\(^{103}\) Schoenberg, “Composition with Twelve Tones (I)” (1941), in *Style and Idea*, 215.  
textural principle, *Klangfarbenmelodie* is accomplished through connecting the timbral lines of the texture so that they articulate form in some way. When *Klangfarbenmelodie* expresses the logic of the work it must comprehensibly articulate the form and create coherence between the constituent parts. According to Schoenberg, in order to convey its “connections and functions,” the emancipation of dissonance relied upon “something not greatly regarded until then—timbre.”¹⁰⁵ The connections and functions of timbre make *Klangfarbenmelodie* operate with a logic that satisfies, ushering in Schoenberg’s new epoch.

*Klangfarbenmelodie* is a happy mixture of contrapuntal and homophonic principles—the new textural form of presentation Schoenberg sought to develop in music.¹⁰⁶ In fact, my formulation of *Klangfarbenmelodie* as a textural principle composed of lines of timbre is not so foreign. Schoenberg himself wrote that composers have been composing *Klangfarbenmelodie* for generations.¹⁰⁷ Since pitch cannot exist without timbre (and vice versa), if there is a pitch-line there is a timbre-line; *Klangfarbenmelodie* is omnipresent in music, the question is simply one of degree and how those structures are employed. Although we disagree on much, Schnittke astutely points out, “When Schoenberg formulated the idea of *Klangfarbenmelodie*, it is unlikely that he had in mind the withering away of the realm of pitch. Rather he envisaged a shift of the center of gravity to timbre, while retaining the significance of melodic energy, albeit manifested in a concealed form.”¹⁰⁸ Schnittke asks what the idea of the music is by considering a

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¹⁰⁶ *Klangfarbenmelodie* (2) in glossary.
dialectic; whether it is “color or line, timbre or pitch.” Rather than this antagonistic approach, we might consider the possibility of lines of timbre and colors of pitch, both of which are aspects of music. Lines are created by the connection of musical tones, not just in their pitch-element but also through timbre. Keeping Dahlhaus’s equilibrium of pitch- and timbre-melody in mind, balance in music is maintained by process. Musical progression, regardless of whether it is harmonic, melodic, rhythmic, or timbral, is the sine qua non of music. The interaction of the timbral lines creates the textural Klangfarbenmelodie in “Farben.”

Schoenberg’s new directions did not eliminate his need for tension and resolution. He simply shifted the onus away from dominant and tonic triads to allow other ways of building contrast through tension and relaxation to flourish. In “Farben,” timbre is the parameter that creates the referential point whose departure from and return to provides the artistic journey of tension and resolution. Timbre is the stuff of “Farben.”

A true litmus test of an analytical approach is to do as Rahn instructs: “Always go back over an analysis and relisten to the piece until everything that makes musical sense in the analysis is audible.” While one can certainly learn to hear the canonic movement and understand it through careful study, the timbres are much more readily comprehensible to the educated listener. One can hear the creation of lines, counterpoint, and formal divisions through timbre, while the pitch content is cleverly masked. There are still pitch relations; pitch still moves in canon; and pitch is still a structural element. But timbre is also a structural element that is only now beginning to be understood. By

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109 Schnittke, 118–19.  
110 An example of colors of pitch is Debussy’s use of non-functional harmony for a coloring effect.  
111 Rahn, Basic Atonal Theory, 67.
listening for the lines, divisions, and interactions created through timbre, we can comprehend the *Klangfarbenmelodie* presented and recognize that “Farben” is chromaphonic music.
5. Different Paths to the New Music: Webern and *Klangfarbenmelodie*

The ultimate principle in the presentation of a musical thought is comprehensibility. – Anton Webern\(^1\)

For the uninitiated, the above epigraph may seem incongruous in relation to the music of Anton Webern (1883–1945), but this chapter sets out to make Webern’s claim manifest for all through the lens of timbre and planal analysis. One of the organizing principles of Webern’s aphoristic music is *Klangfarbenmelodie*. Even in his later work, after he embraced dodecaphony, timbre is foundational to his musical thought.

The previous two chapters discussed Schoenberg’s conception and application of *Klangfarbenmelodie*. This chapter demonstrates that Webern composed his *Klangfarbenmelodie* music with strict formal and logical precepts. Two competing definitions of timbre-melody were imposed by the critical reception that accrued in the decades after the term became part of the musical lexicon. Contrary to these popularized dissimilarities, Webern’s conception of *Klangfarbenmelodie* was quite similar to Schoenberg’s. Both composers were concerned with the logic of its combinations of moving voices. Furthermore, Webern sought Schoenberg’s approval of his *Klangfarbenmelodie* compositions; and when he received it, he was elated.

5.1 Different Paths, Same Destination

Webern’s 1932–33 lectures, compiled into the book *The Path to the New Music* (*Der Weg zur neuen Musik*), illuminate the transition from pre-WWI chromaphony and free atonality to the later dodecaphony.\(^2\) Familiar and as expected from Schoenberg’s

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student, throughout the lectures Webern is overridingingly concerned with the comprehensible presentation of the musical idea (especially evident from his third and fourth lectures of 1933). It is clear from the lectures that Webern and his colleagues were connecting with and extending musical tradition in a tangible way. According to him, “[Tonality is] the only one of the old achievements to have disappeared; everything else is still there.”

He goes on, “…for we too are writing classical forms, which haven’t vanished. All the ingenious forms discovered by these composers [the canonized masters] also occur in the new music.”

In order to find “meaningful expression in sound,” Webern seeks a style “whose formal construction relates the two possible types of presentation to each other [emphases original].” By this, Webern means the homophonic and polyphonic forms of presentation. As we would expect from Schoenberg’s disciple, the principles that led to the formulation of Klangfarbenmelodie hold sway over Webern as well. He recounted that the style they were seeking was “a new inter-penetration of music’s material in the horizontal and vertical.”

Dodecaphony was “the path to the new music” on which the triumvirate eventually settled. But before dodecaphony was promulgated by Schoenberg and adopted by Webern and Alban Berg, Klangfarbenmelodie was the path they explored. Careful consideration of Webern’s music demystifies the kaleidoscopic meanings of Klangfarbenmelodie created by early critics.

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3 Webern, 42.
4 Webern, 35.
5 Webern, 61.
6 Webern, 35.
5.2 *Klangfarbenmelodie and a Bach Fugue*

Schoenberg’s writings from 1911 to 1951 consistently deal with

*Klangfarbenmelodie* from a logical perspective, describing it as an organizational principle of music. Webern’s writings do the same. Webern’s known texts on

*Klangfarbenmelodie* are from three letters, dating from 1911, 1935, and 1938. The subject of the earlier letter can be narrowed down to a small group of possible works whose consideration forms the main thrust of this chapter. The latter two letters are specifically about Webern’s 1935 arrangement of the *Fuga (Ricercata) a 6 voci, No. 2* from J. S. Bach’s *The Musical Offering* BWV 1079 (1747). On May 16, 1935 Webern wrote to Franz Rederer that for a London radio broadcast he conducted the first performance of

…my orchestral arrangement of a fugue by Johann Sebastian Bach, a totally unknown and wonderful work. Abstractly notated in the original, as are the later fugues in the Art of the Fugue, it is unspecified as to whether it should be sung or played, whether it should be performed fast or slow. It is without tempo markings, included no dynamics, in short, nothing by which one normally indicates how things are to be understood or performed. And now I have transformed this abstract conception into a ‘*Klangfarbenmelodie.*’

From this letter we learn that Webern thought Bach’s work was originally abstract—that is, not comprehensibly presented—and that by making it “a

*Klangfarbenmelodie*” he has remedied this issue. In a famous letter from 1938 first published in *Die Reihe*, Webern explains in more detail. His goal was to “make it

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available.”

He exclaims, “What music it is! … Is it not worth while to awaken this music asleep in the seclusion of Bach’s own abstract presentation, and thus unknown or unapproachable by most [people]? Unapproachable as music!” The functional use of timbre is the vehicle Webern chose to enhance the work’s musical comprehensibility.

The Klangfarbenmelodie of Webern’s Fuga is the logic of his organizational scheme, not just the morphing-timbre-melodies (Klangfarbenwechsel melodischer Tonfolgen) of its outward manifestation. He writes, “My orchestration is intended (and I speak of the whole work) to reveal the motivic coherence.” And that is exactly what it does. Webern uses a strict organizational pattern to elucidate the motivic cells of Bach’s tonal melody. He divides the whole melodic statement into four motives of five tones each, using the central E♭ of the chromatic descent as an elided pivot point for the middle two pairs (Example 5.1). He explains, “If you count the E♭ twice, you again have five notes (from E♭-B). The construction therefore appears to me as follows: 5 notes then 4+1 and 1+4, which is twice 5, and at the end another 5 notes.”

Example 5.1. Fugue subject with groups of five note motives (5a–d).

In his morphing-timbre-melodies, he assigns timbres according to this motivic segmentation using a pattern of three different tone colors plus harp. The first group of five tones is presented in Timbre 1, the second motivic cell is then given in an alternating

9 Webern, letter to Hermann Scherchen, 19.
10 Webern, 19.
11 Webern, 19.
instrumentation: Timbre 2-Timbre 3-Timbre 2. The tone counted twice, E♭ in the tonic subject, is assigned to Timbre 2 as part of the second motivic group and to the harp as part of the third motive, which continues with Timbre 1 again. The harp is used consistently throughout the entire work. The final motivic cell recalls Timbre 2 and then progresses to Timbre 3 joined by the harp. The harp doubling in the final motivic cell of each statement of the subject reinforces the elided tone that serves both middle cells since the first of the two tones it sounds is the same pitch class as the pivot tone. Table 5.1 illustrates the timbre distribution by motivic grouping. The sixth statement of the subject (actually an answer) in mm. 49–56 represents the completion of the fugue’s exposition. Webern affords the sixth statement a special place by using a bowed string timbre in a complete statement of the subject for the first time. The cello, Webern’s own instrument, signifies the formal division, as does the reversal of order between the cello and bassoon in the final motivic cell.
Table 5.1. Timbre distribution by motivic grouping in Webern’s *Fuga*

<table>
<thead>
<tr>
<th>Motivic Group</th>
<th>Group 5a</th>
<th>Group 5b</th>
<th>Group 5c</th>
<th>Group 5d</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm.</td>
<td>Timbre 1</td>
<td>Timbre 2</td>
<td>Timbre 3</td>
<td>Timbre 2</td>
</tr>
<tr>
<td>1–8</td>
<td>Tbn. (m)</td>
<td>Hrn. (m)</td>
<td>Tpt. (m)</td>
<td>Harp</td>
</tr>
<tr>
<td>9–16</td>
<td>Fl.</td>
<td>Cl.</td>
<td>Ob.</td>
<td>Cl.</td>
</tr>
<tr>
<td>95–102</td>
<td>Bsn.</td>
<td>B. Cl.</td>
<td>Tbn.</td>
<td>B. Cl.</td>
</tr>
<tr>
<td>115–22</td>
<td>Tpt. (m)</td>
<td>E. H.</td>
<td>Hrn. (m)</td>
<td>E. H.</td>
</tr>
<tr>
<td>145–52</td>
<td>Hrn. (m)</td>
<td>Tbn. (m)</td>
<td>Tpt. (m)</td>
<td>Hrn. (m)</td>
</tr>
<tr>
<td>171–78</td>
<td>Cl.</td>
<td>Tpt. (m)</td>
<td>Hrn. (m)</td>
<td>Tpt. (m)</td>
</tr>
</tbody>
</table>

* The assignment of violoncello and bassoon are reversed in Group 5d of the subject’s sixth statement.

Though composed in 1935, Webern’s *Ricercar* is not dodecaphonic; it is a chromaphonic interpretation of a tonal work. Because timbre and pitch both operate on different levels, Webern is able to create a new timbre-based organizational structure superimposed on Bach’s original tonal logic. It is both tonal and chromaphonic, another type of happy mixture of new music. The strict and undeniable logic of timbres reveals motivic coherence by illuminating the moving voices that comprise the dense polyphonic fugue. Through *Klangfarbenmelodie*, Webern renders the abstract comprehensible.

Webern’s arrangement of the Bach fugue is evidence of his lifelong obsession with *Klangfarbenmelodie*. By 1935, he was already a devoted serial composer. Even in these later years, when composing with strict adherence to twelve-tone techniques, timbre
and *Klangfarbenmelodie* played a large role in his composition. But some twenty years earlier, they were at the forefront of his musical development.

Webern’s letters from the 1930s explicitly link his conception of *Klangfarbenmelodie* to logic and the comprehensibility of music. Even in his later works, Webern used timbre structurally; but his main experiments with *Klangfarbenmelodie* came in the pre-WWI years. Between the advent of free atonality with Schoenberg’s Second String Quartet (Op. 10) and the development and adoption of twelve-tone technique with Schoenberg’s Opp. 23–25 and Webern’s Op. 17, lies the experimental period when both composers were on the path to a new type of music and were experimenting with chromaphony. For Webern especially, *Klangfarbenmelodie* was the path to the new music before dodecaphony.

### 5.3 *Klangfarbenmelodie* in 1911

The different paths Webern followed to the new music employed timbre in unique ways. Characteristic of his music (and one reason it is so compelling) is that he fully devoted himself to the idiom in which he was composing at the time. Once Schoenberg turned to dodecaphony, Webern was fully committed to it. And similar to his wholehearted embrace of twelve-tone composition, Webern was absolutely determined to compose *Klangfarbenmelodie* in the early years of atonality. On November 12, 1911 he was in Zehlendorf, just outside Berlin, and wrote to his friend, musicologist and conductor Heinrich Jalowetz:
Zehlendorf, Nov, 12 1911
To Heinrich Jalowetz

...Schoenberg very much likes my essay about him. Likewise, my new compositions. He had a great impression of them. He even wants to write something about them. He thinks that they are already a melody of timbres.
I am happy!¹²

Webern beams with pride at Schoenberg thinking he has composed

*Klangfarbenmelodie*. It is impossible to know whether or not there is significance to Webern writing a “*Melodie der Klangfarben*” versus “*Klangfarbenmelodie*.”

Unfortunately, there is simply not enough evidence to argue for any one interpretation of the phrase over another. What we do know is that Webern showed Schoenberg some of his pieces wanting them to be *Klangfarbenmelodie*, and Schoenberg thought they were. This letter shows how important *Klangfarbenmelodie* was to Webern in 1911. Without a shred of doubt, Webern’s goal, or at least one goal, was to compose *Klangfarbenmelodie*.

It is a relatively straightforward task to identify the possible pieces Webern showed to Schoenberg in Berlin in 1911. The possible candidates are *Sechs Bagatellen für Streichquartett*, Op. 9, Nos. 2–5 and *5 Stücke für Orchester*, Op. 10, Nos. 1 and 4.

Still, both opuses have complicated gestations.

5.3.1 *Sechs Bagatellen für Streichquartett, Op. 9*

As Hans and Rosaleen Moldenhauer detail, Bagatelles Nos. 2–5 were composed in 1911 and finished by Webern as his Second String Quartet.¹³ In 1913, he composed

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another string quartet in three movements: the outer movements of which became Bagatelles Nos. 1 and 6, while the middle movement, which also had a texted vocal line both sung and treated with *Sprechstimme*, remained unpublished. Webern refers to the 1911 string quartet movements in a number of letters. To Schoenberg on August 7, 1911, Webern wrote that he was writing a string quartet and was anxious to show it to him.\(^{14}\) The quartet was complete by August 23, 1911 when Webern wrote, “I can hardly wait to show you these [Op. 9/2–5] and my seven orchestral ‘chamber pieces’ [including Op. 10/1, 4]. What will you say to them? They consist of a change of colors in sixteenth and thirty-second notes.”\(^{15}\) We learn from a later letter to Schoenberg, dated October 7, 1913, that when organizing a concert Webern distinguishes between “the four pieces I showed you in Berlin [in 1911] and the three pieces (the middle one with voice) that I wrote this summer [the 1913 quartet pieces].”\(^{16}\)

Already evident in these letters is Webern’s concern for timbre. He does not highlight pitch or rhythmic processes; rather, he wants to show Schoenberg his latest innovations in timbre-composition. Again, he highlights timbre in these works in a letter to Berg dated May 23, 1913: “You must look closely at the instrumentation. You have to imagine very precisely these mixtures and alterations of the various bowing possibilities (col legno, sul ponticello, naturale, etc.).”\(^{17}\) Three letters from Webern to Schoenberg allow us to deduce that the quartet he sent to Berg in May of 1913 consisted of the 1911 Bagatelles. Dated June 3, June 28, and July 10, 1913 the three letters detail the progress

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\(^{14}\) Moldenhauer, 190–91.  
\(^{15}\) Quoted in Moldenhauer, 195.  
\(^{16}\) Quoted in Moldenhauer, 191–92.  
\(^{17}\) Quoted in Moldenhauer, 191.
of the 1913 string quartet—respectively, the stages they represent are: I will write a string quartet, my string quartet will soon be complete, and my string quartet is finished. From these we learn that he had not yet started the 1913 quartet pieces in May of that year.

Another strong link between the Klangfarbenmelodie works in the Jalowetz letter and the Sechs Bagatellen is that Schoenberg wanted to write something about the pieces referred to in the letter. And of course, Schoenberg famously did just that with the Bagatelles, albeit, some thirteen years later. In 1924 Schoenberg wrote a preface to accompany the Universal Edition publication of Webern’s Op. 9; it is reproduced in full in Style and Idea.

Evidence mounts that Bagatelles Nos. 2–5 could be the Klangfarbenmelodien that so excited Webern in his letter to Jalowetz. But there is another set of pieces that is possible as well: his “seven orchestral chamber pieces” referenced in the letter of August 23, 1911. These are associated with his 5 Stücke für Orchester, Op. 10.

5.3.2 5 Stücke für Orchester, Op. 10

The five pieces of Op. 10 are an extract of eighteen that Webern composed between 1911 and 1913. Of the eighteen pieces, eleven were published: five as Op. 10 (1911–13, published by Universal Edition, 1923), five as the Orchestra Pieces, Op. Posthumous (1913, published by Carl Fischer, 1971), and “O sanftes Glühn der Berge,” which became No. 3 of the Three Orchestral Songs 1913–14 (published by Carl Fischer, 1968). The dates of the Op. 10 pieces are as follows, reported by Moldenhauer:

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18 Moldenhauer, 191.
19 Schoenberg, Style and Idea, 483–84.
20 Moldenhauer, Anton von Webern, 194.
21 Moldenhauer, 194.
10/1: 28 June 1911
10/2: 13 Sep 1913
10/3: 8 Sep 1913
10/4: 19 July 1911
10/5: 6 Oct 1913

Similar to Op. 9, the 5 Orchestra Pieces were compiled from works composed in 1911 and 1913. On July 6, 1911, Webern wrote to Schoenberg that he had already composed the first two of his new short pieces for orchestra. All seven of the 1911 orchestra pieces were complete by August 23, as revealed by the above quoted letter. Webern completed the remaining eleven orchestral pieces by December 22, 1913. Of the eleven 1913 pieces, Webern elected to include three in Op. 10.

The letter to Jalowetz dates from November 1911. Adding the two orchestral pieces from Op. 10 known to be composed prior to Webern’s 1911 trip to Berlin to the four string quartet Bagatelles of the same year, we have six pieces that may be the Klangfarbenmelodie to which Webern referred: Op. 9 Nos. 2–5 and Op. 10 Nos. 1 and 4. Analysis of these works reveals Webern’s use of Klangfarbenmelodie as a governing principle in musical structure.

5.4 Issues in Analyzing Webern’s Music

Webern’s pre-war free atonality occupies a theoretical lacuna that lacks the same level of explication as his dodecaphonic works. Recognizing that these works are chromaphonie and considering parameters other than pitch helps create a better understanding of this music. The analytical corpus of studies on the free atonal works of Webern is largely based on a monumental assumption: as Allen Forte puts it, “Pitch is

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22 Moldenhauer, 194–95.
23 Moldenhauer, 196.
24 Webern’s Op. 9, Nos. 2–3 are not analyzed here; they will be included in a later version of this work.
assumed to have been Webern’s primary concern as he composed this music, with other musical parameters being significant, but conceptually secondary.” While this is just one author’s comment, it is generally representative of many previous approaches. Certainly, pitch is of primary importance in much of Webern’s serial music. However, the same may not be universally applicable to the pre-WWI chromaphonic music. Many scholars have used pitch-based methods to great advantage. Set theory certainly shows important structural relationships, and it is quite enlightening for Webern’s intervallic language. However, according to Regina Busch, attempts at using theoretical concepts like the basic cell and its metamorphoses on Webern’s works are anachronistic and cannot bear the burden of explication. To her, many theories seem like precautions against the music; she explains, “Since the music is not trusted, the traditional music-theoretical concepts presented by Webern (and Schoenberg, too) are also regarded as unsuited for coping with the music.” Busch’s view may overstate the lack of applicability of “traditional music-theoretical” approaches. Nonetheless, recognition of timbre as an additional organizing principle of the music relieves many of these intellectual tensions.

Another important stream in analytical studies of free atonal music is semitone and whole tone relationships. As a product of Webern’s intervallic language, octatonic

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28 Busch, 2.
relationships can be easily found whether or not they are structurally relevant. Another approach to his intervallic language is the chains of chromatic connection that Henri Pousseur found in Webern’s Bagatelles.\textsuperscript{29} Though Richard Chrisman problematizes the direct and indirect connections necessary for Pousseur’s harmonic fields,\textsuperscript{30} they at least recognize the fallacy of octave equivalency in this music. In composing specifically nontonal music, Webern logically avoided creating harmonies that might override all else in the listener’s ear. Since repetition creates a sense of centricity, octave doublings were generally avoided. But vital for understanding the music as Webern composed it, Pousseur recognized that repetitions of the same pitch class are “absolutely different notes.”\textsuperscript{31} Repeated pitches, or octaves, could cause intractable theoretical issues: however, simply recognizing that a pitch class repetition is not necessarily a repetition of the same musical tone solves these theoretical problems.

A more recent way to approach intervallic language in atonal music is through altered octaves (augmented or diminished). Alfred Cramer submits that Schoenberg and Webern “used the characteristic beating and roughness of the altered octave as a color structurally equal to the colors of the traditional consonant intervals.”\textsuperscript{32} As Cramer suggests, “Early atonal expressionist compositions are constructed to promote the coloristic blend of separate voices.”\textsuperscript{33} The altered octave is one tool in the atonal arsenal

\textsuperscript{31} Pousseur, “Webern’s Organic Chromaticism,” 54.
\textsuperscript{33} Cramer, §6.
to create subgroupings. In this way, composers can create variety within unity. One of the most insightful analytical approaches is Benjamin K. Davies’s chromatic wedge theory. According to him, “Chromatic wedges do not form the material of Op. 9 in any thematic or motivic sense. Rather, they are employed in what might be termed the structuring of tonal space: in short, they serve to configure the pitch-register field within which fully articulated textures coalesce.”

Yet, in many of these analyses there is something missing—the role Webern placed on all those aspects of the musical tone that are not pitch class. Ethan Haimo exhaustively shows that Schoenberg and his school did not compose with pc sets in mind. While many pitch-based theories can provide a useful way to describe certain characteristics, they are not built for chromaphonic music. Pitch is so much more than pitch class. Pitch is contained within timbre; they are inseparable. For example, the differing compositional meanings of a G#3 played pizzicato by the second violin and A♭4 arco in the first violin are important, as we will see in the Fifth Bagatelle. As Webern’s

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34 Cramer, §12.
36 Davies, 29. Davies still argues that pitch is the structuring parameter and all others are subordinate. Relying on Reinhold Brinkmann’s description of the manuscript sources (see Bibliography), he argues that Webern struggled to attain the optimum instrumental assignment of a pre-established pitch-registral structure, and therefore timbre is secondary to pitch (Davies, 32). Equally as important as which pitch is assigned to which instrument is the question of instrumental articulation. Are the tones assigned arco or pizzicato, am Steg or am Griffbrett? Judgment on these matters must be withheld until the document in question can be examined first-hand and these questions can be answered.

letters show, and as the analyses do as well, timbre was his primary concern in some of his works in 1911.

The most powerful thread in the theoretical narrative of Webern’s music is symmetry, and as will be shown, it is foundational to his musical logic. As he developed his twelve-tone technique, Webern’s works show an increasing reliance on symmetry. In his earlier works, symmetry ranges from being the obvious basis of the form (Op. 10/1) to emerging in a variety of more veiled fashions. As Kathryn Bailey notes, Webern’s predilection for symmetrical constructions and their concealment are a vital part of his musical language.38 Through planal analysis and consideration of timbre as a functional parameter, I show that Webern consistently relied on symmetrical constructions as part of his musical grammar.

5.5 Timbral Concepts: Block Topography

Thus far, no analytical apparatus has been able to illuminate fully the functional relationships of Webern’s music. In Haimo’s words, these works have “stubbornly resisted attempts to provide convincing answers about their structure.”39 Planal analysis overcomes the stalemate between composer, listener, and analyst. The ability to compare, contrast, and evaluate timbre (or any other parameter) along with pitch yields new insight into these works. Auditory scene analysis provides analytical assistance. Similar to the chunking process that Goodchild and McAdams describe,40 through the integration and segregation of musical blocks—music that streams together or coheres into the

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40 Goodchild and McAdams, “Perceptual Processes in Orchestration.”
presentation of a comprehensible musical idea—we are able to readily hear and comprehend the musical logic of these complex works.

The arrangement of musical blocks in chromaphonic music is similar to Bailey’s topographical arrangement of tone rows in dodecaphony. Row topography is a way of describing how the rows are put together in the musical texture. Bailey develops what she calls “block topography” and “linear topography.”\footnote{Bailey, \textit{The Twelve-Tone Music of Anton Webern}, 31.} For her, block topography consists of the sequential presentation of rows one after the other and is an earlier style of the Second Viennese School. In linear topography, on the other hand, the rows progress simultaneously in many voices. My interpretation of her terms is that they create monophonic and polyphonic topographies, respectively. Row topography is a powerful textural tool. Adapting it for timbral purposes, in the organization of musical blocks in planal analysis we use the following topographical classifications:

- \textit{Monophonic block topography} is the sequential presentation of musical blocks without overlap.
- \textit{Homophonic block topography} is the simultaneous presentation of multiple musical blocks with a dependent foreground and background textural relationship.
- \textit{Polyphonic block topography} is the simultaneous presentation of multiple musical blocks as independent lines or voices.

### 5.6 Analyzing the Six Bagatelles for String Quartet, Op. 9, Nos. 4 and 5

#### 5.6.1 Timbral Language in the Bagatelles

Throughout all six of the Bagatelles there is a pervasive de-emphasis of pitch through playing technique. Above all, Webern’s extensive use of \textit{am Steg (sul ponticello)} bowing is a concrete, physical move away from pitch primacy. Bowing at the bridge
actually reduces the sound level of the fundamental frequency in comparison to its overtones—so much so, that depending on the performer’s technique, a fundamental may not even be discernable. Physicist Joe Wolfe has shown that the second, third, fourth, and sixth harmonics are much more prominent than the fundamental in at the bridge bowing.\textsuperscript{42} Patricia and Allen Strange describe it well: “The nebulous environment suggested by \textit{sul ponticello} is created by the narrow boundary between a slight pitch and the production of a non-pitched timbre.”\textsuperscript{43} More accurately, bowing at the bridge can produce a timbre of indefinite pitch.\textsuperscript{44}

Second, artificial harmonics reduce the fundamental in favor of the much more prominent overtone of the fingered node. Webern regularly employs artificial harmonics with resultant tones two octaves above the stopped fundamental. They are still pitched tones, but compositional weight is placed on the timbre over the pitch. If the pitch was all that was important there would be no need for the harmonics; the instruments could play the same absolute pitches in pure tones if Webern would have wanted that. In the Bagatelles, harmonics elevate timbre to a compositionally important position.

Third, Webern uses mutes extensively. Both the Fourth and Fifth Bagatelles analyzed herein are entirely muted. All types of mutes reduce frequencies in the band of 1.5–2.5 kHz, the most sensitive part of the ear.\textsuperscript{45} It has also been shown that mutes may


\textsuperscript{43} Patricia Strange and Allen Strange, \textit{The Contemporary Violin: Extended Performing Techniques} (Berkeley: University of California Press, 2001), 3.


\textsuperscript{45} For a general discussion of the effect of mutes see Strange, \textit{The Contemporary Violin: Extended Performing Techniques}, 185–89. For a detailed discussion of the effects of mutes on string instruments see: Benjamin Elie, François Gautier, and Bertrand David, “Acoustic Signature of Violins Based on Bridge
create frequency spikes closer to the fundamental than the upper harmonics they typically
damp out. As Huron states, “…higher pitched tones will tend to mask lower-pitched
tones more than vice-versa.”46 These frequency spikes may mask any harmonics,
including the fundamental, beneath what is known as the masking skirt.47 Formulating a
rule applicable to all types of mutes is impossible without rigorous scientific testing. But
if we are able to extrapolate from tests performed on Sihon-Roth style mutes, quite
plausibly some masking of the fundamental may occur.48 Regardless, the extensive use of
mutes is a physical reduction of pitch across many of its properties.

The remaining techniques also work to elevate timbre over pitch. Playing at the
fingertip (am Griffbrett) changes the spectral characteristics of the tone. It does not
reduce the fundamental in the same way playing at the bridge does, and correspondingly,
is not employed with the same regularity. When used, it moves the sound away from
prototypical unmodified arco tones, yet it allows a certain degree of continuity with the
“normal” arco tones (muted) that Webern employs. Tremolo de-emphasizes pitch by
creating a constant state of acoustic attack, eliminating the more stable sustain portion of
the tone’s ADSR spectrum. In combination with am Steg, tremolo at the bridge heavily
masks the fundamental pitches sounded by the technique. Finally, Webern’s instruction
an der Spitze—at the tip [of the bow]—shows the familiarity he had with string
instruments and an incredible insight into timbral control. By playing at the tip of the
bow, its weakest point, additional bow pressure may be required from the performer. This

46 Huron, Voice Leading, 52.
47 For an introduction to harmonic masking and masking skirts see Huron, Voice Leading, 41–62.
increase in pressure also increases the amount of bow noise present at the beginning of each stroke. Playing at the tip is yet another, more subtle way to understate pitch.

Composing is an act of auditory scene setting. As Huron maintains, “A composer sets a stage, populates the acoustical scene with one or more sounds, and choreographs their mergers, contrasts, evolutions, fragmentations, and final exits.”49 Analyzing, as well as listening and understanding, is an act of auditory scene parsing. We must make sense of what we hear; my analytical approach and the analyses that follow keep this maxim as the ultimate goal.

5.6.2 The Fifth Bagatelle

Many approaches to Webern’s Op. 9 have struggled to makes sense of the Six Bagatelles for String Quartet. Schoenberg foresaw such issues, but on account of their brevity rather than their musical language. With sincere veneration he wrote in the preface to the 1924 edition, “Think what self-denial it takes to cut a long story short. A glance can always be spun out into a poem, a sigh into a novel. But to convey a novel through a single gesture…”50 Even though the Fifth Bagatelle is the longest of the six, at thirteen measures, it epitomizes Webern’s aphoristic style.

There are two levels of structural organization—timbre and pitch. A chain of nine musical blocks comprises the movement. Example 5.2 sets out the third version of planal analysis: a block topography analysis. As seen in Ex. 5.2, each block of the Fifth Bagatelle contains a complete aphoristic musical phrase consisting of a timbral idea, dynamic swell, and unique tetrachord. The result is a series of clearly audible, distinct

49 Huron, Voice Leading, 178.
50 Schoenberg, Style and Idea, 483.
phrases presented sequentially in a monophonic block topography, usually separated by rests. Each phrase is refined to its purest form, each one a microcosm of a larger musical universe, and each one a Klangfarbenmelodie in its own right.


The form is binary, defined by two complete aggregates of chromatic saturation rather than by the phrase blocks themselves. In addition, the structure has two concise closing statements: a reflecting statement (x) and a coda (c), resulting in an ABxc form. In his 1932–33 lectures, Webern famously said, “About 1911 I wrote the ‘Bagatelles for String Quartet’ (Op. 9)…. Here I had the feeling, ‘When all twelve tones have gone by, the piece is over.’”^52^ Chromatic aggregates are structural in Op. 9, but they should not be considered equivalent to twelve-tone aggregates in serial music. In the free atonality before WWI, chromatic saturation is often a goal, not the goal; nor is it a strict rule. Pitch repetition is rife compared to the later style. However, there is still a sense of progression through the aggregate rather than emphasis on repeated elements. Webern alleviates all doubt as to the formal organization of the 1911 pieces when he continues, “The most important thing is that each ‘run’ of twelve notes marked a division within the piece, idea, or theme.”^53^ In the Fifth Bagatelle, each phrase block contributes to the aggregate, and when the chromatic “run” is complete, so too is the large-scale formal unit. The chromatic aggregates provide the skeletal structure, but not the substance of Webern’s music. They are the blank canvas stretched across a frame, waiting for the artist’s paint.

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^51^ Reflecting statements are discussed in detail below.
^52^ Webern, *The Path to the New Music*, 51.
^53^ Webern, 51.
Rendered upon that structure are tetrachords and timbres, and these swells of sound make the aggregates comprehensible as a form.

Webern’s pitch vocabulary is quite consistent through the Bagatelles. He favors tetrachords consisting of two semitonal pairs that are separated by differing intervals. Indeed, this type of tetrachord is pervasive in Webern’s pitch-vocabulary of the freely atonal era. The tetrachords themselves, however, do not impart the musical logic. They are Webern’s voice in the pitch realm, but not they are not the language of his music. Webern crafts his phrases through the refined control of timbre. After all, this music is chromaphonic. An examination of the phrase blocks reveals Webern’s undeniable musical logic, consistently crafted through timbre.

**Block 1**

The first phrase (m. 1) highlights the tetrachord C₄ C♯₄ D♯₄ E♭₄ [0134]. Recalling that all tones are muted through the entirety of the piece, Webern encapsulates the arco melodic statement C♯₄-D♯₄ within their outward chromatic neighbors played at the bridge (am Steg). Webern contains the pure arco timbre within a shell of noise. It is chromaphonic homophony in miniature: a two-tone melody and its two-tone accompaniment with textural layers defined by timbre—Klangfarbenmelodie. The dynamic swell imparts an arch-shape, providing a sense of trajectory and completion of the aphoristic statement.

**Block 2**

Block 2 (mm. 2–4.1) implies another homophonic texture, this time of the pizzicato line in Violin I supported by tremolo at the bridge in the Violin II and Viola. Since the pizzicato line and the tremolo am Steg have asynchronous onsets, they do not
stream together. Rather, two distinct timbral ideas are pitted against each other. The pizzicato line is given first, perhaps because it would be too easily lost under the constant attack of noise generated by playing tremolo at the bridge. Webern unifies the two timbres through increasing the dynamic level of the pizzicato at the time of the onset of the second timbre. As with the first phrase, the dynamic wave imparts an arch-like structure. In a combination of moving voices, the pizzicato line operates alongside tremolo at the bridge, creating a second aphoristic \textit{Klangfarbenmelodie} statement. The swell, consistent with the previous block, helps emphasize the timbral rhythm that develops.

The pitch content of this block is $D_{n4} E_{b4} E_{b4} F_{n4} [0123]$ with an additional $B_{n3}$. This $B_{n3}$ is the first of three tones in the entire work that augment their respective tetrachords. Taken together, the three tones are $B_{n3} C_{n5} B_{n3}$ (mm. 3–4, 5, and 13 respectively); they will contribute to an architectonic unit that becomes apparent only at the end of the work. Additionally, the $B_{n3}$ may function either as a distractor against or a coloring agent of the $E_{n4}$. Perhaps Webern added the $B_{n3}$, a member of the following Block 3 tetrachord, to avoid making $E_{n4}$ a unique timbral articulation, and therefore, too commanding a statement. Without the additional tone, the \textit{am Steg} tremolo might place too powerful an emphasis on a single tone, thereby too strongly associating the timbre with a specific pitch. Regardless, the synchronous onsets and timbral similarity of the \textit{am Steg} tones in mm 3–4 cause them to stream together.

\textbf{Block 3}

In a powerful statement, Block 3 (mm. 4.2–5) emphasizes the $C_{n5}$ external to its tetrachord, $F_{b3} G_{b4} B_{b3} B_{n3} [0156]$. The $C_{n5}$ in m. 5 is an important structural tone in the
work, representing the first phase of registral expansion from the initial tetrachord an octave below it (m. 1). Webern crafts emphasis through timbre allowing the tone to ring out above the rest of the phrase as its highpoint. Coming on the heels of pizzicato and tremolo am Steg, comparatively, the pure arco tones (still muted) soar with clarity. The viola’s specific tone is more strident compared with the violin tones, which are in a lower register on their respective instruments, and therefore allow the viola’s proportionally higher-register tone to stand out. This timbral accentuation is supported by the dynamic swell. Furthermore, the intensity of the cello’s F♯4 is diminished through its decrescendo. The sehr zart (very tender or soft) marking indicates the player should expressively minimize the tone’s brilliance. Webern emphasizes the C♯5 in m. 5 through refined dynamic and timbral control. Brian Ferneyhough calls this type of separation timbral alienation, meaning that a particular element is segregated from its environment.54

**Blocks 4 and 5**

Blocks 4 and 5 (mm. 6–7) are elided by means of the A♯3 sustained through the entirety of m. 7 by the first violin. This A♯3 is the last tone of the first chromatic aggregate and the first tone of the second aggregate. Completing the first “run” of twelve tones, as Webern calls it, the A♯3 in m. 7 signifies the end of the A section and the beginning of the B section. The fourth phrase’s tetrachord is F♯4 G♯4 A♯4 A♯3 [0123]. The second aggregate, and Block 5, begins with the tetrachord G♯3 A♭4 A♯3 B♭4 [0123], just one semitone higher than its predecessor. For Davies, the two A♭s in mm. 6–7 bear

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repetition because they are part of separate chromatic wedges. However, A₄ played natural arco by the viola is a different tone than A₄ played pizzicato by the cello. Once the two circuits of chromatic saturation are considered, the repetition of the pitch class A₄ in the two different musical tones is perfectly comprehensible as part of different aggregates.

Symmetrical constructions are important throughout Webern’s oeuvre, and Op. 9 is no different. Rather than an axis of symmetry around a particular pitch or interval, the form is built around the symmetry of two aggregates. The first complete statement of all twelve tones culminates with the A₃ in m. 7, midway through the piece. The second aggregate elides with the first at the midpoint. The aggregates have a vaguely symmetrical layout. The second aggregate is not a retrograde of the first, but it does foreshadow the later compositional strategy. B₄-G₄-A₄-A₃ are the last four pitch classes that complete the first aggregate. Although the order is not preserved, the first four tones of the second aggregate are A₄-G₄-B₄-A₄. Finally, the second aggregate ends with a tetrachord involving C₄ and C♯5 (mm. 9–10), two of the pitch classes from the opening statement. Symmetry is apparent in the construction.

Block 4 completes the timbral journey of the first aggregate by returning to the initial combination of arco and am Steg, providing a sense of symmetry and timbral

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56 We might note that the A♯₄ in m. 11 could be considered the final tone of the second aggregate if the A♯₃ in m. 7 is assigned only to the first chromatic grouping. If that interpretation is taken, then another level of symmetry arises from each aggregate combining four phrase blocks. In this case, the reflecting statement is elided with the end of the B section. This view is not at all problematic, but I prefer the elision of the aggregates in m. 7 because it maintains the phrases and tetrachordal groupings across the entire piece, as well as better compositional pacing. Most convincing, it maintains the independence of the reflecting statement. Once the timbral lines and registral expansion and contraction (discussed below) are considered, the independence of the reflecting statement becomes apparent.
cadence to conclude the first half of the piece. The fourth phrase sees the first variation in the dynamic blueprint, signaling a change in formal outline. Instead of the crescendo-decrescendo pattern established by each phrase thus far, the design is reversed over the two connected phrase blocks, thereby emphasizing the end of the first aggregate and the start of the second with a crescendo. In a timbral inversion of the initial phrase, the arco G₃ in the second violin and the arco A♭₄–B♭₄ in viola surround the elided structural tone of A₃ played at the bridge in the first violin in m. 7. This timbral inversion contributes to the timbral cadence and the formal division of the work.

**Blocks 6 and 7**

Much like the third phrase, Block 6 (mm. 8–9.1) highlights a particular musical event, another timbral alienation: the pizzicato glissando in the cello in m. 9. The tetrachord is D₃ E♭₄ E₄ F₄ [0123]. Remarkably, other than the octave displacement, this is the same tetrachord as Block 2 (of course, without the additional B♭₃). Further enhancing Webern’s symmetrical tendencies, both instances of this tetrachord are the second phrase in their respective aggregates.

The compositional pace quickens with Block 7 (mm. 9–10), the concluding phrase of the second formal segment. Just as with the aggregates, Blocks 6 and 7 are combined through a shared event. It is not truly an elision, since the two phrases are not sharing any one element. But the merging of the two is cemented by the unique timbral event in the cello. The pizzicato glissando that completes the sixth phrase slides seamlessly into the beginning of the seventh. With virtuosic technique, the player should be able to engage the bow in an unspoiled transition during the glissando. However, in practicality, more often there is a slight separation between pizzicato glissando and the
arco C#5. That slight separation notwithstanding, the gesture is a cohesive one that imparts urgency to the trajectory.

The pitch content of the glissando gesture is also crucial. Both the low note, D₄3, and the high note, C#₅, are an expansion of registral space. The first expansion occurred just before the completion of the first aggregate in m. 5. This second registral expansion comes before the completion of the second aggregate, only four bars after the first expansion. Webern quickens the pace by one measure in both chromatic saturation and registral expansion.

Increasing the sense of progression, the dynamics of Block 6 crescendo again, as in the previous phrase. In the second aggregate, Webern has not yet employed the swell pattern. Block 7, however, relaxes the tension of the forward push with a decrescendo-crescendo-decrescendo pattern. With the return of the arch-shaped swell, dynamic relief is secured. With this sense of trajectory and release, the second aggregate comes to a close. Block 7 offers the only tetrachord in the piece that is not a semitonal pair: B₃₄ C₄₄ C#₅ G₄₄ [0127]. This departure ensures the completion of the second aggregate in three phrase blocks, expertly quickening the compositional pace and allowing room for additional closing statements while maintaining formal symmetries.

**Block 8 (I)**

Block 8 (mm. 11–12) is highly significant and will be discussed alongside *Klangfarbenmelodie* in Op. 9/5 below.

**Block 9 and the Combination of Blocks**

Block 9 (m. 13) is the coda. Its tetrachord is C#₃ D₅₅ E♭₄ E₃ [0123], and, similar to Block 2, it has an additional B♭₃. The essence of the coda is the viola’s pizzicato C#₃-
D₅⁵: it is the final expansion of registral space that develops outward in a registral wedge from the initial C#₄ of the constricted opening measure (Figure 5.1). The wedge’s upper trajectory highlights C₅⁵-C#₅⁵-D₅⁵ (mm. 5, 9, and 13), while the lower route is B₃-D₃-C#₃ (mm. 3–4, 9, and 13).  

Figure 5.1. Webern, Op. 9, No. 5 registral wedge.

There are three seemingly out-of-place tones throughout the work from the perspective of pitch: the C₅⁵ in m. 5 and two B₃s (mm. 3–4 and 13). Once the overall structure of the Bagatelle is considered, though, these tones fall into place in the musical logic. The C₅⁵ (m. 5) is part of the registral wedge’s chromatic ascent (C₅⁵-C#₅⁵-D₅⁵); and likewise, the first B₃ (mm. 3–4) is part of the descending portion of the registral wedge (B₃-D₃-C#₃). The second B₃ (m 13) contributes to the symmetrical construction of the coda. It is the timbral axis of symmetry in the distribution of the final measure’s musical material:

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57 The registral wedge that I find is in many ways similar to Davies’ result; however, our methods are quite different. Davies, “The Structuring of Tonal Space in Webern’s Six Bagatelles, Op. 9,” 42–45.
D₄ 5 pizzicato (Viola)
Eb⁴ am Steg (Violin I)
B₃ 3 pizzicato (Violin II)
Eb₃ am Steg (Cello)
C♯3 pizzicato (Viola)

As will become apparent below, symmetry and wedge constructions are the basis of Webern’s musical language in this work.

**Klangfarbenmelodie in Op. 9/5 and Block 8 (II)**

Pitch aggregates define formal segments of the Fifth Bagatelle, but *Klangfarbenmelodie* is the essence of the chromaphonic music stretched across the blank canvas of chromatic saturation. We have already seen that each phrase block contains its own aphoristic *Klangfarbenmelodie* statement. Whether through timbral encapsulation, combinations of moving voices, or accentuation through keen awareness of timbral differences in the instruments, Webern masterfully composes timbre-music. Large scale timbral processes occur as well. While the registral wedge shown above (Fig. 5.1) is at work in the pitch domain, three timbral lines emerge in the realm of tone color: the *am Steg*, arco, and pizzicato lines.

In the Fifth Bagatelle, there is an overall trajectory of containment to escape in both the timbre and pitch domains. The timbral encapsulation of arco within *am Steg* of Block 1 sets the stage for work’s *Klangfarbenmelodie*—both its timbre-melodies and its textural presentation. Each stratum of timbre-melody in the music echoes the wedge of registral expansion (Example 5.3).
The *am Steg* line is not a background, but it is the most consistent aural reference through the piece; and it has the narrowest tessitura. Webern shows the same concern for the timbral lines as he does with the formal structure. The *am Steg* line matches the aggregates in its compositional pacing. It begins with the C₄ in the viola and E₄ in the cello. Already we see the reversal of traditional instrumental roles, a hallmark of Webern’s style. The *am Steg* line divides along with the binary form, creating two line segments or phrases. The first *am Steg* line runs from the beginning to the end of the A section. The A₃ (m. 7) that elides the aggregates is its lowest and final tone. The second *am Steg* line begins in m. 8 and culminates in the cello’s E₃ final measure. The highest *am Steg* tones are in the cello (G₄ in mm. 6 and 12), occurring one measure before the line’s corresponding low points. Again, Webern reverses the instrument’s traditional registral assignment. Only as part of the coda does the *am Steg* cello go lower than the other instruments’ *am Steg* assignments. Together, both *am Steg* lines highlight the structural points at the beginning, formal segmentation, and end of the work.

Within the space outline by the *am Steg* line in m. 1, the arco line begins with the C₄-D₄. Passing through the emphasized C₅ (m. 5), the upper trajectory of its wedge arrives at C₅ in m. 9. Meanwhile, the arco line’s lower trajectory exceeds the depths of the *am Steg* line by a whole tone with its arco G₃ in m. 7. Reminiscent of arco’s escape from the clutches of *am Steg* in the first measure, the second *am Steg* line begins between the arco line’s low and high points.

Extending the theme of escape from containment, the pizzicato line begins with D₄—the tone registrally within the arco line’s opening C₄-D₄. Over the course of the piece, the pizzicato line escapes from the arco line’s enclosure of it. The pizzicato line’s
D₃ (m. 9) and C♯₃ (m. 13) are the lowest tones of the work; while in the upper range, the viola’s ultimate pizzicato D₅ (m. 13) rises higher the cello’s arco C♯₅ (m. 9). By the end of the work, the pizzicato line encircles both other lines. Similar to the am Steg line, the pizzicato line is in two phrases. The first culminates with the arco line in a timbral cadence. Unified by the cello’s unique pizzicato-glissando-to-arco timbral event (m. 9), this first timbral cadence in the piece reinforces the reversal of timbral encirclings: pizzicato and arco now join to surround am Steg (mm. 8–9 in Ex. 5.3 above).

Returning to Block 8 (mm. 11–12), it presents a reflecting statement, so-called because it either echoes (direct imitation) or mirrors (inverse imitation) large-scale musical constructions on a smaller scale or reflects components of itself as in voice crossings or contrary motion. Reflecting statements are an important part of Webern’s musical language used consistently in the Bagatelles. In the Fifth, the reflecting statement is a complete aphoristic phrase in itself, resembling a type of closing argument. It is not a coda; but it is a formal unit distinct from the A and B sections which are defined by the chromatic aggregates. It is set apart from the surrounding music by rests on both sides, a clear signal that it is something other than the preceding music. The rests also inversely reflect the elision of the aggregates in m. 7 through separation instead of overlapping. The reflecting statement employs a tetrachord with enharmonic spelling: G₄ G♯₃ A♭₄ A♯₄ [0112].58 Analytical methods based on pitch class alone may have difficulty with this concept, but there is absolutely no doubt that A♭₄ arco is a different musical tone than G♯₃ pizzicato. The register of the pitches and how they are made to sound (their timbres)

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58 In set theory, [0112] would be inappropriate and the set would be rendered [012]. However, set theory is not at work here, and [0112] allows a rendering that better shows the pattern of semitonal pairs that emerges in Webern’s music.
are imperative to understanding fully this passage. The reflecting statement inversely emulates the pattern of registral expansion Webern employs throughout the work: pizzicato statements contract via contrary motion to arco foregrounded over *am Steg* (Figure 5.2).\(^{59}\)

![Reflecting statement](image)

**Figure 5.2.** Webern, Op. 9, No. 5, reflecting statement.

Example 5.4 shows a *Klangfarbenmelodie* analysis of the Fifth Bagatelle. Almost like a seal, Webern impresses the reflecting statement into the musical form. The phrase presents an entire aphoristic *Klangfarbenmelodie* by itself, but also adds a contrasting statement to the large-scale processes of the work. The reflecting statement combines the

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\(^{59}\) In his investigations of the manuscript sources Davies shows that m. 12 was subject to an “extreme level of revision,” and the G♯4 in m. 12 is “afforded an almost exaggerated prominence” in the Berlin manuscript (Davies, “The Structuring of Tonal Space in Webern’s Six Bagatelles, Op. 9,” 45). The manuscript sources will be subject to study in later versions of this research.
three articulations of the timbral lines, unifying them. Its contraction of registral space provides an important layer of compositional contrast. The other lines, both pitch and timbral, expand in registral space. The contraction adds a layer of balance to the movement.


In many ways, Webern’s Op. 9/5 can be heard as a response to Schoenberg’s Op. 16/3. Its underlying structure is not the same, but on the surface, the contours of its timbral events and climaxes are often analogous. The undulating dynamic swells create an effect similar to the articulation pattern in the morphing organism of “Farben.” The timbral lines of *Klangfarbenmelodie* are transformed into undulating timbral blocks that yield more of a sense of static pitch with changing timbres than the morphing organism of “Farben” does. Of course, pitch is not static, but each timbral block consists of a single tetrachord that remains fixed and results in a sense of pitch stasis within the unit. The pizzicato glissando is a unique timbral event in the cello that could be heard as corresponding to the tremolo descent of the violas and cellos in mm. 28–29 of Schoenberg’s work. The timbral cadence provided by the pizzicato and arco lines in m. 9 resembles the timbral cadence in m. 30 of “Farben.” In all these ways, Webern’s work seems to parallel that of his teacher. The Fifth Bagatelle hints at Webern’s later development of the dynamic type of *Klangfarbenmelodie* (morphing-timbre-melody) while at the same time, evoking the static *Klangfarbenmelodie* associated with “Farben.” True to the Second Viennese School’s goals, Webern’s Op. 9/5 presents a new type of happy mixture.
5.6.3 The Fourth Bagatelle

The Fourth Bagatelle exhibits strong similarities to the Fifth. The work is again structured in blocks. However, rather than the more transparent, sequential and symmetrical presentation, Webern elects to overlap the blocks asymmetrically. In the block topography analysis serving this analytical discussion (Example 5.5), the six musical blocks are numbered in their entrance order. The blocks combine into three musical phrases: (1) Blocks 1 and 2, mm. 1–3; (2) Block 3, mm. 3–5; and (3) Blocks 4–6, mm. 5–8. The Fourth Bagatelle has a homophonic block topography with Violin I texturally stratified from the other three voices throughout the entire work. As such, in the planal analysis that serves as the analytical reference for this discussion, Violin I is set apart from the other three voices. Within the homophonic block topography two timbral lines dominate the texture.

Example 5.5. See Appendix A for: Block topography analysis, Anton Webern, *Sechs Bagatellen für Streichquartett*, Op. 9, No. 4.

As with the Fifth, and consistent with Webern’s 1932 comments, the form of the piece is determined by “runs” of complete chromatic saturation. The pitch content of the Fourth Bagatelle is governed, as it was in the Fifth, by aggregates of chromatic saturation and tetrachords constructed of semitonal pairs. The Fourth Bagatelle has the same form as the Fifth: ABxc—that is, binary (AB) with a concise reflecting statement (x) and a coda (c). And just the same as in the other Bagatelle, although the pitch aggregates provide structure, the timbre processes make the music comprehensible. Though not mentioned at every discussion of timbre, the whole movement is performed with mutes (*mit Dämpfer*).
Blocks 1 and 2

Block 1 (Violin II, Viola, Cello in mm. 1–3) contains the entire first aggregate, and with it, defines the A section of the form. Viewed melodically (polyphonically), on the pitch level, the tetrachords G\#4 G\#4 B\#3 B\#4 [0134] (Violin II, mm. 1–3) and C\#3 D\#2 F\#2 F\#3 [0145] (Cello, m. 2) are both constructed of semitonal pairs, consistent with Webern’s intervallic language. Although normalized in the above construction, B\#3 is the first tone of the work and is emphasized by its duration. The remaining tones of the aggregate form yet another tetrachord with one semitonal pair: A\#3 C\#5 D\#4 E\#6 [0367]. Worthy of note, each tone in this tetrachord appears in a different octave. The viola’s descending gesture in mm. 1–2 bridges registral space between the upper oscillating figure and the lower lines of Block 1. What could be heard as a vestige of tonality, the descending viola arpeggiation of E\#-B\#-C\#, is not actually that. Still, in 1911, Webern is not so far removed from tradition that occasional remnants of the older epoch’s musical language cannot be found. The E\#6 in m. 1 is important because its inclusion here allows the E\#4 at the bridge of Violin I in mm. 3–5 to belong to the next phrase block. Analysis corroborates audition. Clearly, the first violin’s am Steg E\#4 streams with m. 4 and the first sixteenth-note of m. 5. Any analysis that does not distinguish these phrases necessarily fails its listening test.

Unfortunately, Forte misreads the piece when he cites the viola harmonic F\#6 in m. 4 as the first of its pitch class. The cello has F\#2 in m. 2. Regrettably, the mistake compounds because it leads him to conclude that the first chromatic aggregate completes later than its actual completion in m. 3. Forte, The Atonal Music of Anton Webern, 185.

A harmonic reading of Block 1 results in the tetrachords B\#3 B\#5 C\#5 E\#6 [0126] (Violin II and Viola, mm. 1–2) and D\#4 G\#4 G\#4 A\#3 [0456] (Violin II, mm. 2–3) in addition to the same tetrachord in the cello in m. 2. While not problematic, a polyphonic reading is preferred here based on the principles of polyphonic composition Webern (and the rest of the Second Viennese School) were pursuing in 1911.

The listening test of an analysis is to listen to the piece following along with the analysis to see if it makes reasonable sense.
Block 2 (Violin I in mm. 1–2) is the textural foil in the A section. The E♭5-A♭6 are not actually part of the aggregate proper; rather, they foreshadow the final two tones of the chromatic saturation in Block 1. Webern extracts the final two notes of the first aggregate and reframes them in a unique timbral voice: the high register am Steg oscillating leap in mm. 1–2. Its E♭5-A♭6 are drawn from the A♭3-D♯4 in m. 3, spelled enharmonically in retrograde. But its timbre is a stark contrast to that of Block 1. Indeed, the contrast between the leaping am Steg gesture and the legato lines of Block 1 are fundamental to the piece.

**Block 3**

As previously mentioned, the first violin’s am Steg E♭4 belongs to the phrase extending through the first sixteenth-note of m. 5: Block 3 (mm. 3–5). This block begins the second aggregate with the tetrachord E♭4 F♭6 B♭5 B♭2 [0167]. In the block topography analysis, it takes its position behind Blocks 1 and 4 because the repeated gesture in Violin I is metrically overlapped by both the end of the first phrase and the first thirty-second-note of Block 4. Timbrally, Block 3 is dominated by the repeated tone sounded at the bridge of the violin. It is a timbral morphing of the am Steg in Block 2. The manner of bowing is consistent between the high oscillating gesture and the repeated tone, while the pitch and intervallic content (the latter’s interval is the unison) is adjusted. The articulated pattern of the first violin’s E♭4 becomes a crucial factor in the continued timbral morphing of the line in following phrase block.

**Blocks 4 and 5**

Block 4 (Violin II, Viola, Cello in mm. 5–7) combines aspects of Blocks 2 and 3 into a cohesive unified statement. The am Steg oscillating leap, now registrally
centralized from its high position in mm. 1–2, is incorporated with two levels of repeated
tones issuing from the previous block. The three lower voices are stacked in a
proportional rhythmic design with onsets at the ratio of 6:9:12.\(^{63}\) Like raindrops falling
from different clouds, the three lower lines stream together in a shower of metrically
displaced dribs. Closely related to the tetrachord announced by the cello in m. 2, Block
4’s tetrachord, C\(^\#\)4–D\(^\#\)5–F\(^\#\)4–G\(^\#\)3 [0156], is distributed vertically rather than horizontally.

Block 5 (Violin I in mm. 5–8) is the textural counterpart of Block 4. Considered
on its own, it could almost be called a “melody.” However, that would unjustly impart
thematic status to this part. It is not a theme in the traditional sense. Instead it is a timbral
statement and the completion of the metric object established in the lower voices. It
realizes the full proportional rhythmic design with the next decreasing factor, making the
proportion of onsets 4:6:9:12 (1:2:3:4) between all four voices.

Even though intimately entwined with the other voices rhythmically, the timbral
contrast causes Block 5 to segregate and create a homophonic texture in the final
measures of the piece. In a complex multilayered web, Webern uses multiple parameters
both to join and to distinguish. He exerts refined compositional control linking timbre,
 rhythm, and register (a timbral concern) in a way that both integrates and segregates—
that is, he creates variety within the unity. Timbrally, the second violin’s am Steg
oscillation and the viola’s pizzicato are different enough to stream separately. However,
the harmonics in the cello tie to those in first violin, creating unity within the texture.
Webern uses bowing articulation to distinguish between them. The slurred legato of

\(^{63}\) While 6:9:12 may be reduced to 2:3:4, the larger numerals reflect the actual number of eighth-notes
Webern employs.
Block 5 is set against *staccatissimo* at the tip (*an der Spitze*) of the bow.\(^6\) Furthermore, Webern ensures that the textural layers do not stream together by assigning the two harmonics parts the most diverse rhythms. Rhythmically, the timbrally segregated viola has the closest onset pattern to the segregated Violin I line, but it is the furthest from it in pitch space, thereby minimizing stream integration. Registrally, the lower three voices are contained within G\(\natural\)3 to F\#4. The D\(\natural\)5 that extends beyond this tessitura is slurred with the C\#4, and functions as a coloring agent to the lower tone; it is anchored within the lower range, maintaining textural unity with the rest of Block 4. On the other hand, Block 5 begins with C\#7, over two octaves higher than the F\#4. Their registers set them apart.

**Block 6**

Block 6 is the reflecting gesture in m. 7 (Violin II and Viola). As with the reflecting statement in the Fifth Bagatelle, it is an aphoristic phrase that represents one of the basic musical ideas of the movement. Separated by rests, the crossing statement’s pizzicato timbre does not impart any semblance of sustained tone that can be merged into the next. The complete isolation allows its reflection of the main form to be unfettered by linear relationships with other blocks. Most importantly, just as the reflection in Op. 9/5 contracted the registral space opened by that movement, here, the reflecting gesture expands the registral space contracted throughout the Fourth (Figure 5.3). Both reflecting statements take on the opposite shape from the overall shape of the movements that contain them, generating contrasting elements of musical interest. The only tone after the

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\(^6\) If the performer were to use a series of upbows instead of changing bow direction that would increase the amount of bow noise at the beginning of each stroke. This slight timbral effect would accentuate Webern’s score indication.
Fourth Bagatelle’s reflecting statement is the G#6 of Block 5. As aphoristic as possible, this solitary note is the work’s coda.

Figure 5.3. Webern, Op. 9, No. 4, reflecting statement.

*Klangfarbenmelodie in the Fourth Bagatelle*

Rather than an aphoristic *Klangfarbenmelodie* in each phrase block, the Fourth’s *Klangfarbenmelodie* stretches across the work. Crossing timbral lines comprehensibly present a constriction of registral space to the listener (Example 5.6). The two timbral lines in the Fourth are the legato line and the *am Steg/staccato* line. The oscillating *am Steg* music, even though it is a slurred gesture, streams with the repeated staccato tones for two reasons. First, the registral leap within the gesture separates the tones. Probably not coincidentally, Webern chooses Eb5, a tone that cannot be played on the open E
string. By requiring a stopped lower string Webern eliminates the possibility of slurring the A₄6 with an open string, a gesture that would create a greater sense of connection between the tones. The slight separation gained is enough to influence interpretation of the oscillating gesture as part of the staccato line. Second, bowing at the bridge clearly aligns the oscillating gesture with the staccato of Block 3. The legato timbral line is made up of the legato bowings, in pure arco and harmonics.65


The *am Steg*/staccato line is easily identifiable beginning with the repeated E₄4 in Violin I, and its continuation with the quartet’s lower three voices in Block 4 is equally as obvious. This latter portion of the line combines the short, repeated tones of Block 3 with the *am Steg* timbre oscillation of Block 2, extending the timbral signature across the whole of the work. A single, cohesive line develops that spans from the A₄6–E₅5 oscillation through the E₄4 repetition, culminating with the Block 4 unit. The *am Steg*/staccato line traverses a descent of over three octaves, from A₄6 to G₃4 (Viola, mm. 5–6).

The extended descent of the *am Steg*/staccato line is mirrored by its counterpart: the legato line. It connects from Block 1 through the viola’s harmonic F₄6 in m. 4 to the first violin’s line of legato harmonics. Slurred arco bowings span across the line. The harmonic F₄6 in m. 4 is arco *marcato tenuto* (Viola), distinguishing it from the pizzicato tones that are not accented. With the onset of the harmonics in m. 5, the connection through the m. 4 harmonic tone is evident. In opposition to the *am Steg*/staccato line, the

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65 Again, it worth remembering that the entire movement is performed with mutes.
legato line highlights a drastic ascent from D♭2 to C♯7 at its limits. The bowed tones of Block 1 highlight the lower registers of their instruments. The lowest tone here progresses from D♭2 in m. 2 to B♭2 in m. 4, where it coincides with the viola’s upper harmonic, preparing to make the five-octave leap to C♯7. Webern overlaps the two registral extremes in order to prepare the listener for the jump.

Pizzicato is the chameleon timbre of the movement; it changes its colors in the midst of the work. First of all, the initial descending arpeggio-like figure is part of Block 1. In m. 4, the tenuto pizzicato tones (Violin II and Cello) are synchronous with the arco harmonic tone (Viola). Here, they may act as a coloring agent to create an emergent timbre, or they may simply be part of a harmonic statement. Either way, the tenuto pizzicato tones stream with the viola’s F♯6 harmonic because of their common onsets. Starting in m. 5, though, pizzicato becomes firmly entrenched in Block 4, as part of the am Steg/staccato line. In this way, the pizzicato tones of Block 3 enable the crossing gesture; they are the intersection of the cross.

*Klangfarbenmelodie* unveils the compositional trickery that Webern employs in the second “run” of the twelve tones. The second aggregate seems incomplete until the am Steg/staccato timbral line brings it forth. From the tones in Blocks 3–5 the aggregate lacks only A♯ and D♯/E♭. The A♯ is provided in the reflecting statement in m. 7, but it still leaves the second aggregate incomplete without the D♯/E♭. Webern ingeniously displaces the final tone of the second aggregate from the end of the piece to the beginning. In this way, the crossing architecture makes reference to the completion of the aggregate and the timbral connection solidifies the aggregate’s coherence.
We might possibly force a differing view upon the aggregates, but to do so ignores musical phrasing to the point of absurdity. If the Eb5 and A♯6 of the high oscillating gesture are included in the first aggregate, then the final two tones of the second violin in m. 3 could be grouped with the second aggregate. However, auditory streaming dictates that the A♯3-D♯4 at the end of the second violin’s statement in m. 3 belong with the second violin’s continuous phrase initiated in m. 1 with B♭3 (as does Webern’s notation). The composer dictates by the slurred articulation as well as the decrescendo that these two tones belong with the tones to which they are notationally tied. Measures 1–3 in Violin II certainly represent a cohesive musical statement, complete with its own arch-shaped contour and dynamic swell, characteristics recognized from Op. 9/5 and typical of Webern’s phrases in the 1911 string quartet works.

All aspects point to the same conclusion: Block 1 contains the first aggregate and the Eb5 of Block 2 is displaced from the second aggregate. The bond created between the leaping am Steg bowing in mm. 5–6 and the repeated staccato tones in Block 4 is so strong that it is unfathomable not to link it to the leaping am Steg bowing in mm. 1–2. The cohesive single line is cemented by the compelling connection between the crossing statement and m. 1. Throughout the movement, the timbre-melodies make clear the musical connections and the logic behind them.

5.6.4 Same Form, Same Scheme

Webern’s musical language is consistent throughout the Bagatelles. As can be seen in both the Fourth and Fifth, timbre does not replace pitch, but is elevated to the same structural significance. The two movements approach the idea of the expansion and contraction of register from opposite ends, but they share the same musical language.
Both works have the same form: binary plus a concise reflecting statement and coda (ABxc). Symmetry is crucial within both. On the pitch level, both are functionally governed by two complete “runs” of the chromatic aggregate, and they share the same non-functional pitch language based on tetrachords of semitonal pairs. In the realm of timbre, they both offer a new way of composing *Klangfarbenmelodie*. The Fifth connects a monophonic topography of blocks, each one containing its own aphoristic *Klangfarbenmelodie* phrase, into extended timbral lines that create an expanding registral wedge. The Fourth uses two distinct timbral lines to contract registral space in a crossing architecture. In addition to the self-contained reflecting statements themselves, Webern makes consistent use of wedges and crossing gestures, both of which offer reflections in their own right. In the Bagatelles of 1911, Webern uses consistent musical logic and language to convey related contrasting ideas.

### 5.7 Analyzing the First Orchestral Piece, Op. 10, No. 1

The first of Webern’s *5 Orchestral Pieces* is similar to the Bagatelles in many ways. It is constructed in timbral blocks, is highly symmetrical, has both functional and non-functional elements of pitch, and is governed by timbral lines of *Klangfarbenmelodie*. Its four timbre blocks form a polyphonic topography. The form is symmetrical, articulated by timbre and defined around the timbral axis of the trumpet and trombone brass choir in mm. 6–7. This structural marker also provides Webern’s signature reflecting statement. Rather than place the reflection at the end of the work as he did in the Fourth and Fifth Bagatelles, here it is the keystone of the form, spanning mm. 6–7, the mid-point of the twelve-bar work. The strings and brass instruments are
muted throughout. Example 5.7 offers the block topography analysis accompanying this discussion; it is notated entirely in concert pitch.


**Block 1: The Introduction, Main Line, and Coda**

Block 1 consists of three sections unified by timbre: the introduction, main line, and coda. The introduction, the opening B₄⁴-C₅⁵ in the first beat of m. 1 and its anacrusis, is distilled to an aphoristic antecedent and consequent of one tone each. It is a minute timbre-melody. Rather than creating emergent timbres, each constituent timbre in this introduction plays a foundational role in the structure of the movement. The trumpet will sound again as part of the symmetrical form’s axis as well as in symmetrical references to the introduction. The harp is used structurally by itself as well as in combination with other instruments. It is often the medium to which other timbres are added.⁶⁶ Like the linseed oil in a painter’s stock, coloring agents are blended with it to create the artistic hues. The harmonics in the harp unite with those in the bowed strings. The qualities of the harmonics and those of the celesta lend themselves to creating a timbral affinity, as do the trill in the celesta and the flutter-tongue of the flute, which reference each other throughout the work.

The main timbral line of the work begins with the harp and flutter-tongue-flute B₄⁴ in the latter half of m. 1. The timbral qualities that bind the introduction also create coherence in the main line. Although the introduction and the main line are both part of Block 1, they are set apart with the triplet-eighth-note rest. The main line consists of the

⁶⁶ In many ways, Webern’s use of the harp is similar to the function it performs twenty-four years later in his Bach Fugue arrangement.
harp (except when it is joined with the strings in mm. 4–6), glockenspiel in m. 2, celesta, flute in flutter-tongue articulation, trumpet (except when part of the brass choir in mm. 6–7), and the cello in harmonics. It forms the foundational stratum of the music. Not precisely a background or substrate, it is only interpreted that way because, other than the introduction and coda, the rest of the music is framed by the main line due to the symmetrical form of the piece. The main line is an independent voice in the music. Nevertheless, it provides reference for the echelons of music layered upon it.

The coda, m. 12, employs structural timbres from earlier in the piece. Its coherence is further guaranteed through the repetition of the pitch F₄. The intricacies of this self-contained, aphoristic phrase’s thoughtful construction are discussed in regard to symmetry and Klangfarbenmelodie below. It is the final section of Block 1. All three sections of Block 1 share specific timbres and articulation techniques promoting coherence across the movement.

**Block 2: A Subject**

Block 2 consists of the clarinet in mm. 3–6, the cello in mm. 7–8, and the violin in mm. 7–10 along with the glockenspiel’s G₇ in m. 9. Timbral unity is attained by joining the violin and clarinet through the cello, as well as through their slurred articulation patterns. As Schoenberg’s student, Webern would have inherited, or at least been keenly aware of, his teacher’s opinion that the clarinet is the most melodic woodwind.⁶⁷ Paired with the violin, the most traditional melodic instrument of the orchestra, these two instruments carry the legato line that most closely resembles the old style of melody. This

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timbral block has one additional tone: the glockenspiel’s G♮7 in m. 9. Because of its synchronous onset of an octave doubling, it streams with the violin’s simultaneous G♮6 and acts as a coloring agent of the violin’s tone.

The line created within Block 2 represents what is closest to a traditional “melody,” but it is not the sequence of specific tones—their timbres, pitches, or durations—that make up the subject. The idea of “a melody” itself is the subject. The musical idea presented in this voice of the work is that old-fashioned notion of melody. It is a cohesive musical idea, but it is only one of the moving voices of *Klangfarbenmelodie*, and not the main line of the work. It is *a* subject, not *the* subject, and it combines with other voices to create the complex mixtures of homophony and polyphony that Webern presents.

**Block 3: A Countersubject**

If the previous block presents a subject, Block 3 presents a countersubject. It consists of the flute in regular tonguing, harp, violin, and viola, all unified by their shared rhythmic profile into a choir of mixed timbres. The countersubject is the homophonic accompaniment of the melody, traditionally assigned to sections or choirs of instruments. As with the subject, the musical idea expressed is not the specific tones of the accompanimental figure. Instead, the countersubject is the notion of homophonic accompaniment itself. Webern is actively engaging with the orchestral tradition from which he is in the process of breaking away. The homophonic texture created in conjunction with Block 2 becomes a polyphonic voice as a unit that is then entwined in polyphony with the independent main line. Webern composes a happy mixture of homophony and polyphony through *Klangfarbenmelodie*. 
The Cello: A Timbral Bridge

The cello, Webern’s own instrument, holds a special place in the piece. Borrowing articulation patterns, it bridges the different timbral blocks to create organic unity within the variety. The short durations of m. 6 echo Block 3 in the previous measures. The cello’s slurred statements link the clarinet to the violin, uniting the two timbres of the legato line. Finally, the G#4 in harmonics (m. 10) integrates with the timbres of the main line and recalls the viola in m. 1. Its pitch content also reinforces its function as a timbral bridge. In mm. 6–7 the pitches chosen for each borrowed articulation correspond to that which was borrowed from. In m. 8, the A♮4 corresponds to A♮5 in mm. 4–5 (Block 2), while the C♮5 relates to the C♮4 in m. 5 (Block 3). Again, Webern creates unity within the variety, reinforced on several levels.

Block 4: The Timbral Axis of Symmetry

Block 4—the brass choir in mm. 6–7—serves multiple functions. Most importantly, it is the form’s axis of symmetry. As such, its formal implications are discussed below. As a timbral block, it is distinctive as a “brass section.” It is the only use of trombone in the movement, bolstering the axial point of the work with a more pronounced sound and distinguishing it from solo trumpet. Joining with the previous block’s instrumental “section,” the trumpet and trombone create a brass choir. The triplet rhythms of the brass reinforce their connection to the previous timbres of Block 3. Moreover, the brass instruments are joined to the strings and winds by their combinations into sections representing the traditional orchestra within the soloistic chamber orchestra setting. Texturally, Block 4 participates in the homophony of the Blocks 2 and 3, but it is also its own independent voice in the polyphony.
**Symmetrical Form**

The symmetrical form of Op. 10/1 is defined through timbre. The brass choir of trumpet and trombone is the axial timbre in mm. 6–7. Expanding outward, the structural timbres on either side of the axis are: flutter-tongue flute in m. 8–9 mirroring the flute in mm. 4–5 and the trill of the celesta; glockenspiel in mm. 9 and 2; harp in mm. 9 and 1; celesta colored with bowed string harmonics in mm. 10 and 1; and the harp in mm. 10 along with the trumpet in m. 12 mirrored by trumpet combined with harp in the anacrusis. The structural symmetry of the work is illustrated in the block topography analysis (Ex. 5.7). Upon close scrutiny, numerous other levels of timbre-symmetry emerge. The clarinet (mm. 3–6) and violin (mm. 7–10) of the legato line in Block 2 reflect around the axis of the trumpet and trombone. The coda, the timbre-melody on F₃ in m. 12, forms the postaxial side of its own symmetrical process. The introductory timbres—trumpet with harp and celesta with harp and viola harmonics—in mm. 9–10 serve as axis for this timbral symmetry. Mirroring the timbre-melody in m. 12, expanding to the preaxial side of the introduction timbres are the flute in mm. 8–9, trumpet in mm. 6–7, and celesta starting in m. 3.

**The Reflecting Statement**

The reflecting statement of Op. 10/1 is in its timbral axis of symmetry (Block 4). The brass partners navigate paired voices that both echo and mirror each other, an aspect of Webern’s musical language familiar from the Bagatelles (Figure 5.4). The down-up pattern in the trombone’s G♭₃-F♯₃-F#₃ is mirrored in contrary motion by the up-down pattern of the trumpet’s E♭₄-G♭₄-F♯₄ (solid line in Fig. 5.4). Once the trumpet adds G♭₄, contrary motion becomes down-up parallel motion with G♭₄-F♯₄-G♭₄ (dashed line in Fig. 5.4).
5.4). The shortened eighth-note values in the trumpet lend weight to the presence of both types of motion.

Figure 5.4. Webern, Op. 10, No. 1, reflecting statement.

**Pitch in Op. 10/1**

Although pitch is not the main structural parameter of Op. 10/1, there are organizational aspects in the pitch realm. Perhaps, the most important pitch-feature is that the introduction and coda highlight B₃ and F₃ respectively, a symmetrical tritone apart.

The pitch content of the reflecting statement reinforces the timbral symmetry. In both instrumental lines, F₃ can be seen as a lower neighbor to the main F#/Gb and G₃. More importantly, however, the F₃ contained within the crossing statement prepares the F₃ of the coda. At this important structural point of the work, B₃ occurs in the cello. So, veiled as it may be, Webern provides the structural tritone at the axis as well as at the beginning and end, just as we would expect in a symmetrical form.
A loose symmetrical pitch process also exists, but it is not nearly as well-defined as the strict timbre process. Expanding out from the crossing gesture: the E₄ in the trumpet in m. 6 is ornamental, but it also serves to balance the symmetry in opposition to the prominent A₄s in m. 9; the D₄s and D₅s in mm. 4–6 are mirrored by the B₄ and B₅s in mm. 10–11. The pitches in m. 2 summarize the preaxial side of the symmetry, but no such recapitulation exists for the postaxial side. While this weakly organized symmetrical pitch process exists, it lacks the structural vigor to be convincing as a form-bearing element.

There is one complete aggregate of chromatic saturation in the work; however, it does not provide structure as it did in the Bagatelles (Op. 9). Here, it concludes mid-phrase with the E₄ in the flute in m. 8. Additionally, there are many repeated tones within it and there is not a complete second “run” in the work. Nothing indicates that this aggregate bears compositional weight; it is, in effect, incidental.

Particularly noteworthy, however, is that the timbre blocks that make up the body of the work are composed of sets of nine of the twelve tones. There does not appear to be a relationship established between the included or missing tones of each three-quarter-aggregate. As with the tetrachords in Op. 9/5, the nonachords are not structural in this movement, but they are a way of organizing pitch for Webern, and they do have structural implications for the other movements. Table 5.3 illustrates their distribution.

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68 Nine tones make a nonachord; the corresponding term dodrant-aggregate is a three-quarter-aggregate.
69 As will be seen, the nonachords are structural in Op. 10/4.
Table 5.3. Distribution of three-quarter-aggregates in Blocks 2–4 of Webern’s Op. 10, No. 1

<table>
<thead>
<tr>
<th></th>
<th>Timbre Block 1 (Not including Intro. and Coda)</th>
<th>Timbre Block 2</th>
<th>Timbre Blocks 3 and 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>G#/Ab</td>
<td>✓</td>
<td>✖</td>
<td>✖</td>
</tr>
<tr>
<td>G♭</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>F#/G♭</td>
<td>✖</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>F♮</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>E♭</td>
<td>✓</td>
<td>✖</td>
<td>✖</td>
</tr>
<tr>
<td>D#/E♭</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C#/D♭</td>
<td>✖</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C♮</td>
<td>✖</td>
<td>✖</td>
<td>✓</td>
</tr>
<tr>
<td>B♭</td>
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<td>✓</td>
<td>✓</td>
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<tr>
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</tr>
<tr>
<td>A♮</td>
<td>✓</td>
<td>✓</td>
<td>✖</td>
</tr>
</tbody>
</table>

Analytical Conclusions for Op. 10/1

Of all the pieces discussed so far, the First Orchestral Piece of Op. 10 is the one that minimizes pitch-structure the most. There are still pitch processes, to be sure, for timbre cannot exist without pitch. But in Op. 10/1 Webern de-emphasizes pitch to the point of not allowing it to create the formal structure of the work. Timbre’s rigorous organization, on the other hand, clearly indicates that it was Webern’s primary concern in the composition of the movement. As in the Six Bagatelles, Webern’s reflecting statement is an important formal marker. But here, it is joined to the axial timbre, allowing for strict formal procedures to emanate from its central position.

In composing this piece, Webern takes concrete steps on Klangfarbenmelodie’s path to the new music. By presenting the musical meta-ideas of “melody” and “homophonic accompaniment,” his orchestral language explicitly refers to symphonic tradition. He uses this reference to build upon that tradition and to create a new textural Klangfarbenmelodie. It is a polyphonic block topography. Blocks 2 and 3.
form a homophony, a melody with its accompaniment. As a unit, that homophony is then treated in a polyphonic manner with Blocks 1 and 4. In this work, Webern finds another way to create the happy mixture of presentation styles. The rigid timbral structure of this movement is consistent, well-formed, and logical. Webern organizes the combination of moving voices into a logic that satisfies through symmetry. *Klangfarbenmelodie* is achieved on every level.

5.8 Analyzing the Fourth Orchestral Piece, Op. 10, No. 4

The Fourth Orchestral Piece of Op. 10 is only six measures long. Yet it has provided fertile analytical ground for generations of scholars. As abstract as the Fourth Orchestral Piece may seem, it is actually one of Webern’s most “old-fashioned” aphoristic works. The Fourth is much more traditional than the First, and likely, easier to comprehend. He combines its clearly audible homophonic texture with his typical symmetrical musical language. Webern’s musical language is consistent through both of the 1911 orchestral pieces included in Op. 10. The form is binary with a short introduction (iAB). It is governed by a homophonic block topography that neatly partitions by formal segment and by textural foreground and background. In the block topography analysis (Example 5.8), the musical blocks are numbered in the order they first occur in the music. Block 5 is the timbral axis of symmetry; the other six blocks fashion three homophonic pairs. Each homophonic pairing has its own timbrality.


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70 As mentioned, Block 4 serves the dual function of joining in the homophony of Blocks 2 and 3 as well as acting independently.
Blocks 1 and 2

Blocks 1 and 2 (the anacrusis and m. 1), form the introduction. In traditional homophony, the mandolin provides the melody with the harp in accompaniment. Immediately, Webern establishes a melodic contour of two ascending dyads followed by a descending dyad. This “up-up-down” gesture is the primary thematic element of the piece. The mandolin’s melody is echoed in the foreground of each subsequent homophonic grouping. The trichord in the harp in m. 1 could be construed as a chord in fourths, extending tonality in the way Webern spoke about in his 1933 lectures, in which he points to fourth chords in Schoenberg’s Kammersymphonie, Op. 9 (1906) as a step on the path toward the catastrophe of breaking tonality’s neck.\(^71\) Perhaps Schoenberg’s fourth chords were still influential on Webern in 1911; after all, the teacher’s Chamber Symphony made a “colossal impression” on the student.\(^72\)

Blocks 3 and 4

Blocks 3 and 4 (mm. 2–4) have the melody in the trumpet and trombone (both muted), while the accompaniment is in the muted viola harmonic and clarinet. The up-up-down melody is obvious to the ear, as is the timbral segregation of the brass instruments from their accompaniment. In the background, the A\(^4\) of the clarinet and B\(^\flat\)5 of the viola harmonic share the prolongation of single tones and are further linked through shared dynamic shaping. The A section is separated from the introduction by an eighth-rest, and it is clearly partitioned from the B section with the same value. Only the sound of the snare drum penetrates the silence.

\(^{71}\) Webern, *The Path to the New Music*, 48.
\(^{72}\) Webern, 48.
Block 5

The snare drum in m. 4 is Block 5, the axis of symmetry and the only sound of indefinite pitch in the work. The movement’s symmetrical properties are discussed below.

Blocks 6 and 7

Blocks 6 and 7 (mm. 5–6) are the B section of the form. The muted violin is the melody, accompanied by the repeated tones throughout the rest of the chamber orchestra. Webern reverses the contour of the melody, creating a responsive statement and a sense of closure. The resulting down-down-up gesture is foreshortened from six tones to five. The consequence is a quickening of the compositional pace similar to that witnessed elsewhere in Opp. 9 and 10 and consistent with Webern’s compositional style.

Symmetry and the Reflecting Statement in Op. 10/4

Though not symmetrical in form, there are elements of timbral symmetry in Op. 10/4. On either side of the snare drum axis are harp joined with mandolin, clarinet, and a solo string. The only non-direct pairing of timbres is the celesta matched to the brass instruments. Even though the form is not defined by these symmetrical timbres, it is consistent with Webern’s technique in Op. 10/1. Again, he shows remarkable regularity in his musical language.

As we expect from Webern, he composes a type of reflecting statement into the piece. Here, the register of the textural layers crosses, similar to the lines of Klangfarbenmelodie in the Fourth Bagatelle. In mm. 2–4, the melody in the brass is registrally below the accompaniment of clarinet and string harmonics. Then, in mm. 5–6, the melody in the violin is in the traditional upper voice above an accompaniment that is
in a lower register. This type of crossing statement is not the same as the reflecting statements discussed above; but nonetheless, it is a mirroring of textural voices that imparts the familiarities of Webern’s compositional language.

**Pitch in Op. 10/4**

The pitch content of Op. 10/4 is governed by nonachords—that is, groups of nine tones. Each of the three homophonic combinations of blocks is assigned a unique nine-tone grouping.\(^{73}\) If this seems coincidental, all doubt is eschewed upon realizing that the stratified foreground (Blocks 1, 4, 7) and background (Blocks 2, 3, 6) layers each contain a collection of nine tones as well (Table 5.4). Some previous analyses have focused on the hexachord created by the first three mandolin tones and the trichord in the harp to extrapolate structural formations.\(^{74}\) However, that approach does not consider the work’s natural phrasing. The continuation of the mandolin line to its completion yields the more cohesive nonachord as the pitch unit. Advancing from these initial nine tones, a chromatic aggregate is completed with the first three tones of Blocks 3 and 4 (\(A^\#4, B^b5, B^b4\)). However, similar to the chromatic aggregate in the First Orchestral Piece, here it does not provide structure. As it did in the earlier piece, the aggregate concludes mid-phrase, there is not a complete second “run” in the work, and nothing indicates that it bears compositional weight. As with the previous work’s aggregate, it is incidental. The harp harmonic tone in mm. 4–5 is unique in this work. It streams texturally and timbrally with Block 6, but its pitch, \(F^\#5\), is part of the Blocks 3–4 nonachord. It is an elision. Rather than a single pitch serving two structural units though, here, the elision is of

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\(^{73}\) See below for discussion of the \(F^\#5\) in mm. 4–5 belonging to the previous group of nine.  
\(^{74}\) Lewin (1993) and Forte (1973 and 1998).
timbre and pitch—two different dimensions of the musical tone. The pitch serves the three-quarter-aggregate of Blocks 3–4, while the timbre serves the textural background of the homophonic accompaniment. In this way, the harp in mm. 4–5 connects the music across the axis of symmetry.

Table 5.4. Distribution of nonachords in Webern’s Op. 10, No. 4

<table>
<thead>
<tr>
<th></th>
<th>Blocks 1–2</th>
<th>Blocks 3–4</th>
<th>Blocks 6–7</th>
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<th>Textural Background</th>
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</thead>
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<td>✓</td>
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<td>∅</td>
<td>✓</td>
<td>∅</td>
</tr>
<tr>
<td>F#/G♭</td>
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<td>✓</td>
<td>∅</td>
<td>∅</td>
<td>✓</td>
</tr>
<tr>
<td>F♭</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>E♭</td>
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<td>∅</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>D#/E♭</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>∅</td>
</tr>
<tr>
<td>D♭</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>∅</td>
</tr>
<tr>
<td>C#/D♭</td>
<td>✓</td>
<td>∅</td>
<td>✓</td>
<td>∅</td>
<td>✓</td>
</tr>
<tr>
<td>C♭</td>
<td>✓</td>
<td>∅</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>B♭</td>
<td>∅</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>A#/B♭</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>A♭</td>
<td>∅</td>
<td>✓</td>
<td>∅</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

* The harp harmonic tone in mm. 4–5 streams texturally and timbrally with Block 6, but its pitch, F♯5, is part of the Blocks 3–4 nonachord.

Pitch is structural in that every formal segment and textural layer has a unique nonachord, but pitch does not take part in a process or progression that leads to the perception of the musical organization. Hypothetically, the composer could change the specific pitches or even the intervals between them, but as long as the general intervallic shape is maintained the effect of the music would likely be the same. Indeed, Webern appears to have done just that in the sketches that Forte so aptly points out are first drafted for full orchestra, conveying timbre’s central role in the compositional process.75

The gestural shape and timbral/registral distribution conveys the musical idea. The

75 Forte, *The Atonal Music of Anton Webern*, 224–25. The sketches will be subject to study in later versions of this research.
musical organization is communicated through textural stratification and segmentation, with the rests clearly demarcating transitional points.

**Chromaphony in Op. 10/4**

Allowing musical common sense to inform the analysis, the first phrase ends after the first nine tones at the rest on the third beat of m. 1. The second phrase lasts through the G♭3 in the trombone in m. 5. The snare drum stands alone as the axis of symmetry, and the remainder forms the final phrase. Slightly more complex than the simple division of nonachords and phrase blocks, though, the F#5 in the harp in mm. 4–5 is an excellent example of how a tone can function one way on the pitch level and another way on the timbre level. The F#5 is part of the A section’s nonachord, but the harp’s timbre is part of the final homophonic phrase group. In tonal music, the hegemony of harmony may subjugate timbre to its purposes. But in this music, timbre overpowers pitch for perceptual prominence and the harp in mm. 4–5 streams with the clarinet, mandolin, and celesta as part of the homophonic background in mm. 5–6. Similar to a pivot chord that functions in two keys during a modulation, the F#5 harp harmonic tone functions in two organizational groupings—in other words, it facilitates timbral modulation. The transition to the new timbrality is seamlessly achieved by connecting back to the previous phrase through pitch.

The Fourth Orchestral Piece is chromaphonic music. Pitch is de-emphasized, albeit, not nearly as much as in the First. The axis of symmetry is a timbral event, not a pitch construct. Rather than being based on specific pitches, the crossing gesture is registral and textural. Yet pitch is still structural. Three-quarter-aggregates help to define
each segment of the work. But in the end, timbre and texture define the aural experience and communicate the musical logic of Op. 10/4.

5.9 Conclusions

Webern’s *Six Bagatelles for String Quartet*, Op. 9 and *5 Orchestral Pieces*, Op. 10 show that well-defined forms, musical ideas like expansion and contraction, and lucid textures are all consistent aspects of the composer’s musical language in his aphoristic works. Bailey calls Webern’s Opp. 9–10 the “epitome of musical aphorism as it is generally understood—those wisps of music in which one ephemeral gesture follows another for no very apparent reason.”76 The reasons become apparent through the lens of *Klangfarbenmelodie*; the ephemeral wisps logically convey well-articulated musical ideas. Discussing unity, which for Webern was the “utmost relatedness between all component parts,” he states, “[Tonality is] the only one of the old achievements that has disappeared; everything else is still there.”77 My analyses have shown that form, phrase structure, textural delineation, and comprehensible musical ideas are all still there.

Opp. 9/4–5 and 10/1 demonstrate the essence of *Klangfarbenmelodie*. They are works that explore some possibilities with timbre as the medium for artistic expression. The key to understanding these works is to think in combinations of moving voices, that is, to think in *Klangfarbenmelodie*. In that way, words such as René Leibowitz’s no longer apply. He writes, “[Upon] first hearing, [Op. 10]…is utterly bewildering.”78 A timbral approach clearly disproves the unfortunate reputation that Webern’s works of this

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77 Webern, *The Path to the New Music*, 42.
period are “generally understood to be composed in an unsystematic, intuitive fashion.”

Swept away by the tides of serialism, the musical establishment seems to have lost track of some of the other ways to create musical logic to which Schoenberg unswervingly adhered and that Webern dependably applied. Instead, critics transmitted a reception of *Klangfarbenmelodie* that focused only on the outward manifestations of unchanging pitch or pointillistic fragmentation.

The works chosen in this chapter demonstrate Webern’s remarkably consistent compositional strategies. Webern removes the Bagatelles from the timbral identity of a string quartet through such extensive use of bowings at the bridge, harmonics, and mutes. He establishes a new timbral identity for “the new music.” He unequivocally de-emphasizes pitch, but at the same time he uses chromatic aggregates as functional structures. His music offers a seamless blending of pitch and timbre. He is able to craft organizational structures in both realms. He adheres to well-defined forms in all. There is consistency in the pitch language of aggregates, tetrachords, and nonachords. Timbral lines create long-term processes that clearly communicate compositional ideas such as wedges, crossing, and reflecting gestures and the expansion and contraction of registral space. Each work analyzed illustrates a new way of presenting *Klangfarbenmelodie* through varying block topographies, yet they share a well-defined musical language and coherent, comprehensible musical logics.

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6. Conclusion

The emancipation of timbre in music occurs when timbre gains functional meaning in conveying musical logic. Timbre does not replace pitch; the two parameters complement each other. Not surprisingly, equality of timbre and pitch arose during the same period that the tonal system was being stretched, broken down, and torn into new directions. In a way, timbre’s release from restraint could be considered the emancipation of the musical tone. A musical tone is a timbre that contains pitch (definite or not) and lasts a certain duration. For Robert Hasegawa, “If we…explore timbre ‘as the main topic,’ we find that timbre can be promoted from its traditionally secondary role…to a central category, perhaps even the [emphasis original] central category, of musical perception.”¹ No longer restricted by its pitch, the totality of the musical tone becomes functional.

6.1 Klangfarbenmelodie and Chromaphony

*Klangfarbenmelodie* is timbre conveying musical logic and the comprehensible presentation of a musical idea. For both Schoenberg and Webern, it was one of the primary modes of musical composition in the years immediately preceding World War I. From Schoenberg’s original declaration of the concept through his 1951 writings on the matter, he remained steadfastly devoted to *Klangfarbenmelodie* as a combination of moving voices whose relations with one another convey the musical idea with a satisfying logic. In “Farben,” Schoenberg composes both timbre-melodies as tone

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progressions and as stratified textural layers that interact with each other. Used structurally and motivically, timbre determines the inner logic of the work. The background morphing organism coheres into an emergent timbre that is the home timbrality of the music. But the foreground timbral lines impart much of the work’s musical logic. As a textural principle, *Klangfarbenmelodie* is one way to create the happy mixture of homophonic and polyphonic principles Schoenberg and his school sought to develop in the new music.

Richard Strauss anticipated the Second Viennese School’s happy mixture of styles when he observed Wagner’s synthesis of the *symphonic* (polyphonic) and *dramatic* (homophonic) styles of music. This combination of textural styles is evident as early as the *Klangfläche* technique employed in many of the nature scenes in Richard Wagner’s music-dramas. In “The Forest Murmurs” from *Siegfried*, the arboreal background is an accompaniment to the foreground’s avian activity, yet each textural layer maintains its independence, resulting in a texture somewhat between homophony and polyphony. *Klangfläche* technique and the compound homophony that it creates occupy a unique place in the transition from tonal to post-tonal music. As a tonal construct designed to suspend harmonic progression, *Klangflächen* facilitate timbre’s advance to increased compositional salience.

The development of timbral lines and processes in Mahler’s music is a direct predecessor of *Klangfarbenmelodie*. Timbral delineation of the musical idea is at the very core of Mahler’s orchestral technique. His orchestration is often described as analytical—

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that is, it illuminates the pitch-based motives and themes by timbrally highlighting them.

As Mitchell describes:

The shift from solo instrument to solo instrument, and from group to group, spells out—sounds out—the actual motivic architecture of the theme; and when, as frequently happens in Mahler, the motives become detached in the development and are re-ordered and combined in an unexpected polyphony (a mode of development at the center of Mahler’s composing method), a complementary polyphony in the field of timbre is obligatory if the motivic structure of the development is to be clarified.3

Mahler’s orchestrational practices profoundly influenced Schoenberg and Webern. The type of analytical orchestration to which Mitchell points is often associated with Webern’s arrangement of the Bach Fuga. Mahler’s influence on Webern can also be seen in the large orchestras that are used as a multifarious palette for soloistic and chamber-style orchestrations. Much more than merely clarifying motivic structures with timbre, though, all three composers use timbral lines for directed musical processes that convey musical ideas.

Early reception forged conflicting interpretations of Klangfarbenmelodie that pitted teacher and student against each other. Much easier to grasp than the deep and rich musical logic of Klangfarbenmelodie were the surface features latched on to by the critical response. These early misunderstandings persisted throughout the intellectual history of the term. The dichotomy was improperly perpetuated through Schoenberg’s later writings, which at first glance may seem to imply some ill will, but actually reveal Schoenberg’s attempt to protect his legacy (as he was wont to do). Far more revealing are Webern’s letters to members of his circle in 1911. As is evident from these letters,

3 Mitchell, Gustav Mahler: The Wunderhorn Years, 213.
Webern clearly had intent to compose *Klangfarbenmelodie*, and he was eager to obtain Schoenberg’s approval (as he was wont to do).

Webern elevates *Klangfarbenmelodie* beyond Schoenberg’s original conception of it. Webern’s music offers a seamless blending of pitch and timbre. Even when he fully embraced serial techniques in the later stage of his career, Webern never released his grasp on *Klangfarbenmelodie*. In doing so, the enormous influence he would have on later schools of composition would bring about a new revolution in sound. By crafting well-defined organizational structures in his *Klangfarbenmelodie* compositions, Webern established timbre as a primary parameter of his music. Only recognizing that *Klangfarbenmelodie* is a higher principle of structural organization allows us to perceive its musical logic. Hearing and identifying the combinations of moving voices, that is, the textural *Klangfarbenmelodie* made up of timbre-melodies, provides a means of comprehending Webern’s seemingly abstract works.

### 6.1.1 Chromaphony Before Dodecaphony

Chromaphony was the path to the new music before dodecaphony. The fundamental difference between freely atonal and twelve-tone artistic outlooks can also be framed as pre- and post-WWI, or, as chromaphonic and dodecaphonic. While Schoenberg did not formally announce dodecaphony until 1923 with his essay “Twelve-Tone Composition,” the Second Viennese School’s work had been trending in that direction for some years. The problem Schoenberg and his circle experienced with *Klangfarbenmelodie* was one of extended forms. Though the happy mixture of textural styles was accomplished rather quickly in the early years of atonality, comprehensible

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4 Schoenberg, “Twelve-Tone Composition,” 207–8.
and surveyable forms were harder to produce. The result was some of the shortest works in the canon. Abandoning tonality meant that the most important means of building up longer forms was lost. Through dodecaphony Schoenberg and his school found a new, firm footing on the path to extended forms. As Webern points out:

All the works created between the disappearance of tonality and the formulation of the new twelve-note law were short, strikingly short. The longer works written at the time were linked with a text which ‘carried’ them (Schoenberg’s Erwartung and Die glückliche Hand, Berg’s Wozzeck), that’s to say, with something extra-musical.\(^5\)

Had it been given time to flourish, Klangfarbenmelodie could also have been a path leading to extended forms. However, the horrors of WWI bifurcated the compositional practice of the Second Viennese School. Had it not been for the cultural upheaval of the Great War, perhaps Klangfarbenmelodie would have been the path trodden all the way to the new music, but with the end of the war there was a renewed need for structure and law to prevail. That post-WWI need for rule of law coincided with the rise of dodecaphony.

While the Second Viennese School took the dodecaphonic path to the new music, Klangfarbenmelodie as timbre-music launched chromaphony on its stratospheric trajectory. Chromaphony holds a significant place in twentieth-century artistic development. There has been a monumental amount of timbre-music composed in the post-tonal era. The idea of timbre-music that Schoenberg articulated, and that Webern elevated and amplified, had an enormous impact on twentieth-century composition. In the 1920s, many composers outside Schoenberg’s immediate sphere took up the mantle of chromaphony: examples include composers such as Edgard Varèse, Henry Cowell, and

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\(^5\) Webern, The Path to New Music, 53–54.
Maurice Ravel. While there may be relatively few pieces of *Klangfarbenmelodie* music as strictly defined by Schoenberg’s and Webern’s practice, numerous twentieth-century compositional trajectories adopted timbre as their primary aesthetic concern. The pre-dodecaphonic period was surely not a vacuous time devoid of musical evolution. On the contrary, it was full of innovation, and *Klangfarbenmelodie*, the most potent invention of the era, sparked a musical revolution.

### 6.2 Timbral Analysis and Planal Analysis

Timbral analysis is the study of how timbre is employed in music composition to create musical logic. A grand theory of timbre is premature; instead, our purpose has been to understand how timbre is used to convey the musical idea. By developing analytical language based on the established lexicon of harmony, we free discussions of timbre from burdensome efforts to describe familiar processes in novel terms. The timbrality of a work is akin to the tonality of a work. Timbralities modulate just as tonalities do. The pace of timbral rhythm generally changes before a timbral cadence the same way harmonic rhythm usually does before a harmonic cadence. To this extent, then, timbre behaves similarly to the other musical parameters.

*Klangfarbenmelodien* (1)—timbre-melodies or timbral lines—combine in timbral counterpoint to create *Klangfarbenmelodie* (2): a new textural style of presentation.

Throughout this dissertation I have developed three different styles of planal analysis: textural, timbral, and block topography. The first evolved from the multiple perceptual planes of *Klangfläche* technique, organically illustrating the perceptual process of the music’s textural unfolding. Timbral analysis, the second style, imposes a more structured analytical apparatus by stratifying the textural/perceptual layers to
illustrate timbral lines and their interactions as textural voices. A powerful addition to planal analysis is the use of varying block topographies, giving rise to the third style: block topography analysis. We gain precious insight into musical structure by analytically organizing the music into its constituent textural streams. All three styles have analytical value. In conjunction with the principles of music cognition and auditory scene analysis, textural, timbral, and block topography analyses enable new ways to study and rethink musical elements and their interactions.
Glossary of Selected Terms

ADSR: The four phases of a tone’s amplitudinal envelope: attack, decay, sustain, and release.

Block: See *musical block*.

Block Topography: The textural presentation style of musical blocks.

- Monophonic block topography: The sequential presentation of musical blocks without overlap.
- Homophonic block topography: The presentation of multiple musical blocks with a dependent foreground and background textural relationship.
- Polyphonic block topography: The presentation of multiple musical blocks as independent lines or voices.

Chromaphony: Music that elevates timbre, color, or the sound itself to a compositionally forward position. Music whose primary aesthetic goal or means of communication is inherently timbral in nature.

Compound homophony: A texture composed of one clearly foregrounded textural stream and at least one *supporting but independent* background textural stream.

Emergent timbre: A new timbre made by combining two or more concurrent sounds that blend.

*Klangfarbenmelodie* (1): A timbral line, literally a timbre-melody. Timbral progressions that are cohesive, autonomous constructive unities connected though intrinsic values that move forward through the music.

*Klangfarbenmelodie* (2): The textural principle that is a stylistic presentation form akin to homophony or polyphony—a type of chromaphony.

Musical block: Music that streams together or coheres into the presentation of a comprehensible musical idea or textural layer.

Musical plane: The perceptual foreground, middleground (if there is one), and background in music. Often times the same as a textural layer or stream, and often times delineated by timbre.

Musical tone: A timbre that contains pitch (definite or not) and has duration.

Plane: See *musical plane*. 
Planal analysis: Analytic method developed in this dissertation placing one or more musical features in a separate plane from one or more other features in order to consider how those musical elements interact. Often times the analytical planes are the same as the perceptual musical planes; the analytical planes may also be separated musical parameter or other feature.

Reflecting statement: Musical constructions that either echo (direct emulation) or mirror (inverse emulation) other musical constructions or reflect components of itself as in wedge and crossings formations.

Timbrality: A home timbre that dominates the texture or acts as a reference point for the music, just as the home key is the tonality.

Timbre: The totality of a musical tone (or any sound) not including pitch class or duration.

Timbre/timbral affinity: A relationship between instruments with timbral characteristics suggesting similarity or facilitating blend. (Opposite of timbral disparity)

——— alienation: Segregating or separating out a given element from its environment.

——— blend: The perceptual fusing of timbres.

——— cadence: Analogous to a tonal cadence; it closes a musical statement by providing a sense of arrival, usually accompanied by a pause.

——— counterpoint: the polyphonic combination of timbral lines. Timbral counterpoint is an expression of the textural principle and presentation style of Klangfarbenmelodie.

——— disparity: A relationship between instruments with timbral characteristics suggesting dissimilarity or inhibiting blend. (Opposite of timbral affinity)

——— imitation: Using one timbre to sound like or evoke another timbre.

——— line: Klangfarbenmelodie (1).

——— modulation: Going from one home timbre to a new home timbre; analogous to tonal modulation.

——— morphing: Change from one timbre to another within the same timbral line.

——— progression: The directional process of moving from timbre to timbre in music; analogous to harmonic progression.
rhythm: Quantifies the durational change in the specific timbres or the timbral profile of the music.

substitution: When a passage is given in a timbre other than that prepared or expected.

Tone: See *musical tone*.
Appendix A: 11x17” Planal Analyses

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