



IN THEIR OWN WORDS. . .

Milhaud Describes Polytonality (1923)

The revolution in harmony that characterizes music in the early decades of the twentieth century led composers and writers at this time to look for principles governing new harmonic resources. One such musician was Darius Milhaud, who in music of the 1920s experimented with the simultaneous use of multiple keys, each appearing in different strata of a piece. He called the phenomenon “polytonality,” and in the article excerpted here (written in 1923) tells of its history and theoretical possibilities. Milhaud makes an important distinction between polytonality, which characterizes his own music, and atonality. In the latter phenomenon, he says, melodic lines are based on the chromatic scale, rather than diatonic, and each tone is used with a theoretic equality.

The continual evolution of contemporary music has placed new harmonic and contrapuntal styles—polytonality and atonality—in the hands of composers. Far from destroying the fundamental principles of music, as is often wrongly thought, these styles have advanced these principles, extending the ideas spawned by them as they have been used and enriched by musicians throughout history.

The essential difference separating polytonality from atonality is the same as that separating diatonicism from chromaticism.

Diatonicism implies an acceptance of the triad (made of a fundamental tone, its major or minor third, and its fifth) as a fixed entity (*réalité fixe*). It is built from tones of a major or minor scale which are used by the musician in the composition of his themes. Diatonic melodies use only notes coming from the scale of the key in which it is written. Modulations only bring in a parallel tonal organization having a different fundamental and a different scale and triad. Its relationships are the same as those among the elements of the initial key.

Once we admit the possibility of modulating from one key to another, the existence of the twelve fixed tonalities based on the different degrees of the chromatic scale leads us to study the possibility of superimposing several keys sounded simultaneously. Contrapuntal writing also contributes to this study. **The day when canons were admitted at intervals other than the octave marked the birth of the principle of polytonality.** This type of counterpoint consists in combining two similar melodies, of which one is a second, third, or fourth higher or lower than the other. The transposed melody keeps the same key signature as the other, that is, its apparent tonic is actually only a scale degree—the second, third, fourth, fifth, sixth, or seventh, according to the canon in use. Often, if one reads the two canonic lines separately and horizontally, one sees that they can imply an analogous harmonization in two different keys. The perception of a single tonality that comes from hearing the canon arises since each vertical meeting of tones from the two lines remains within the limits imposed by the laws of harmony and two-part counterpoint. We recognize a tonally independent counterpoint, one that does not suggest a unified key, only when the contrapuntal interplay is [not] controlled vertically. Even with Bach, we sometimes feel that each line could have a separate tonal life. This happens, for example, in a canon where the meeting of notes is poorly explained by harmony and does not make sense unless we admit the superimposition of two tonalities.

In the second of Bach’s four *Duetti* (Peters edition no. 208, p. 40) we have this canon.

Example 1

The musical score for Example 1 consists of two systems of piano music. The first system, measures 1-8, is in D minor. The upper part (treble clef) starts with a piano (*p*) dynamic and includes a triplet of eighth notes in measure 3. The lower part (bass clef) also starts with a piano (*p*) dynamic. The piece concludes with a *cresc.* (crescendo) marking. The second system, measures 9-10, continues the piece. Measure 9 features a forte (*f*) dynamic in the upper part and a mezzo-forte (*mf*) dynamic in the lower part. Measure 10 features a mezzo-forte (*mf*) dynamic in both parts.

Read the two lines separately: the upper part is purely in D minor, despite the passing modulations in mm. 3-5. The lower part is exactly the same as the upper, including the passing modulations, but transposed to the fifth, thus in A minor. Still, the two parts are combined so that vertical chords produced by the two-part counterpoint constitute a harmonization in a single key. Nevertheless, mm. 9 and 10 contain a stylistic impurity that disappears if we admit the conjunction of two tonalities. How do we explain the A on the second beat of m. 9 in the lower part, in relation to the F in the upper part? Is it part of a sixth chord? Two-part counterpoint does not permit the false relation that would arise between the [hypothetical] C-natural, the third of this sixth chord, and the C# in the previous measure.

Appoggiaturas and passing notes also produce non-harmonic tones that seem to belong to foreign keys. Freedom of composition, resolutions of these appoggiaturas, and the stability of the point of arrival of passing notes smooth over this problem and stay within permissible limits [of a single tonality]. But when foreign tones in a chord come to be used as fixed entities—not passing tones and not resolving—we will see the matter differently. If a piece in C major, for example, ends with the chord C E G A,

A musical notation showing a chord in bass clef. The notes are C (two lines), E (first space), G (second space), and A (third space). A yellow speech bubble icon is to the left of the notation.

how will we analyze the A? We could say that it is an upper neighbor of an implied G, to which it does not resolve. But if it did resolve to the G, we would be forced to see the G (the fifth of the C triad) as representing the A. It seems logical in music to take into consideration only those notes that we actually hear, and, consequently, it is hard to replace a G with an A. We could, of course, imagine that the A is the sixth of the chord—the sixth degree of the C-major scale—and an added tone to the triad in the manner of a non-harmonic tone. But in such a case why not generalize and admit the existence of a foreign tonality superimposed on the first one? In the present example let's consider the note A to pertain to the key of A minor, which is in this way superimposed completely on the key of C major since the third and fifth of the A minor chord are present in the key of C, where they form the fundamental and third. Moreover, the analysis of any chord is arbitrary, a matter of convention, and there is no reason, for example, not to consider this 9th chord

A musical notation showing a chord in bass clef, identical to the previous one (C, E, G, A). A yellow speech bubble icon is to the left of the notation.

as the superposition of chords representing G minor and C major. This allows us to contemplate the superposition of two melodies—one based on a C-major scale, the other on a G-minor scale.

If we admit this principle, it is necessary next to study methodically the different harmonic combinations that arise from the superposition of two triads, the inversions of such chords, and the progressions that they can undergo (not to mention the different ways that two simultaneous triads can be expressed—two major, two minor, one major the other minor).

For the sake of simplicity, let us begin with [the tonic chord in] the key of C. We only have to add eleven other chords to see all the harmonic combinations in two keys [Ex. 2].

Example 2

I	II	III	IV	V	VI	VII	VIII	IX	X	XI
6-z19	6-33	5-32	5-21	5-27	6-30	5-27	5-21	5-32	6-33	6-z19

Each chord obtained in this way has four modal variants: [Ex. 3].

Example 3

A	B	C	D

We can also explore the inversions that are obtained for each of these superpositions of two keys [i.e., triads].

Chord II from Example 2 presented as A in Example 3

We repeatedly find in contemporary music examples of bitonality that can be traced back to one of the models in Example 2 presented as one of the chords in Example 3.

At the end of the second tableau in Igor Stravinsky's *Petrushka* (Edition Russe, Berlin-Moscow), we see the superposition of C major and F# major:

This is chord VI in Example 2. It is the same chord found at the beginning of Albert Roussel's *La fête de printemps*, where A major and D# major are heard simultaneously.

Musical notation for chord VI, showing a treble clef with a key signature of two sharps (F# and C#) and a bass clef with a key signature of one sharp (F#). The chord is labeled "6-30".

In *Ondine* from Debussy's second book of Preludes (Édition Durand), we have the superposition of chords in D and F# major.

Musical notation for chord IV, showing a treble clef with a key signature of two sharps (F# and C#) and a bass clef with a key signature of two sharps (F# and C#). The chord is labeled "5-21".

This is chord IV in Example 2.

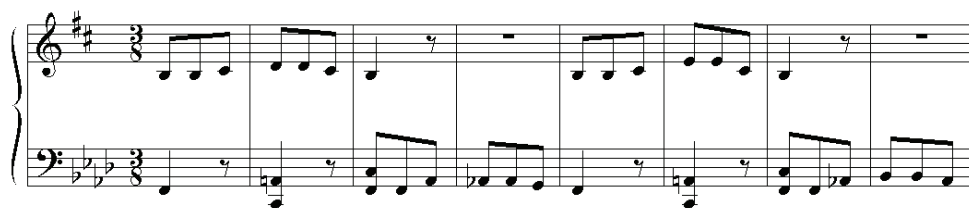
The first of the *14 Bagatelles*, op. 6, by Béla Bartók, composed in 1908 (*14 Zongoradarabja*, Rozsnyai Karoly publishers, Zenemukiadohivatala, Budapest) is written in C# minor in the upper part and in F minor in the lower one. This uses chord VIII in Example 2 presented in the manner of B in Example 3.

Musical notation for chord VIII, showing a treble clef with a key signature of three sharps (F#, C#, G#) and a bass clef with a key signature of three flats (Bb, Eb, Ab). The chord is labeled "5-21".

The chordal progression from Ravel's *Sonata for violin and cello* (Édition Durand) can be considered as a harmonic progression of 11th chords but also as a succession of chords from two keys merged as in chord XI from Example 2 expressed in the manner of D in Example 3.

Musical notation for chord XI, showing a treble clef with a key signature of two sharps (F# and C#) and a bass clef with a key signature of two sharps (F# and C#). The chord is labeled "6-z19".

A bit later in this same *Sonata* we find the violin in B minor, the cello in F (alternating major and minor).



This mixing of F and B corresponds to chord VI in Example 2 expressed as B in Example 3 when the A of the cello is flatted, or as D when the A is natural.

It should be added that at times we suspect independent keys when we really have only one line acting as a pedal. Just as a pedal can lie beneath the passage of chords foreign to the held note itself, so too can a repeated chord or melodic motion act as a pedal with the other melodic line passing momentarily into other keys or freely modulating, forming thus a type of prolonged échappé without creating true bitonality. See this example, from Erik Satie's *Parade* (Rouart Lerolle publishers).



Here we have only a type of échappé that connects the preceding measures to those following and remains unital.

The same observation applies to *Idylle* by the same composer (from *Avant-Dernières Pensées*, published by Rouart Lerolle). The upper part modulates, while throughout the entire piece the lower part acts as pedal made from four notes.



In the first *Mouvement Perpétuel* by Francis Poulenc (Chester), which is clearly in Bb major, the bass plays the role of a pedal, and the upper part sporadically modulates, as in these measures.



It is noteworthy that in most instances of these polytonal counterpoints made from diatonic melodies, the harmonies arising from vertical conjunctions of tones are unanalyzable, and the result is hence atonal.

Before studying the origins and evolution of atonality, it seems to me necessary to open a parenthesis concerning the system based on the **whole-tone scale**. **The chord that provides the basis for this scale is the augmented triad**. This harmonic system, so skillfully used by Debussy, avoids diatonic tonality due to the absence of a scale with semitones. It cannot be part of the domain of atonality, whose existence is based on chromaticism, nor that of polytonality because its scale lacks a perfect fifth. The fifth is the minimal condition for the presence of the triad and other such chords. The whole-tone scale is a very limited resource, and, far from opening a door to new realms of harmonic experience, it restrains the harmonic style to a single chord and melodic writing to only six notes. Atonal music, as its name indicates, avoids any tonal sense, whether by the character of its melodic lines or from harmonic entities coming from their superposition. If **polytonal music is, by origin, essentially diatonic and necessarily melodic**—its harmonies derived from the domain of diatonic harmony and counterpoint—atonal music takes its origins from chromaticism. **Just as diatonicism is based on the triad, chromaticism takes its origin from the chord of the dominant seventh**. This is to say that the triad is considered only as a passing chord that allows a constant movement from one key to another, creating a perpetual transition that invokes the idea of resolution and dominant function. If a chord creates a movement tending toward another chord and serves as its dominant, the goal chord can also be considered as the dominant of some other chord. We can thus imagine a chain of dominant sevenths that creates chromaticism and takes the first step toward atonality.

A melodic line made from the twelve tones of the chromatic scale could plainly coexist with harmonies suggesting a single tonality or polytonality, but in such a case polytonality would come not from the superimposing of several keys, each having its own melody and essential characteristics of a key. The harmonies would instead be the result of a contrapuntal movement that creates chords made by adding thirds atop 7th chords (to create 9th, 11th, 13th chords, etc.)

In the harmonic texture coming from atonal lines, we will always find chords pertaining to diatonic harmony (triads, 7ths, augmented triads, etc.), but they will be isolated, and none of the tones that precede or follow them will justify the existence of one or more definite tonalities. Horizontally, we will always be in the presence of an atonal line; vertically, we will sometimes encounter chords or superimposed chords which analysis will allow to be derived from the harmonies studied in our harmony books. This is the reverse of the situation illustrated in the Koechlin example above, where an atonal harmonic entity comes from a polytonal superposition of melodies having a plainly diatonic character. . . .

In the first of the Three Pieces for Piano, Op. 11, by Arnold Schoenberg (Universal Edition), we have in mm. 3-4 in Example 4 a chromatic line harmonized with two minor triads (D and C# minor) and two augmented triads (G B Eb and Gb Bb D), above an inverted pedal F and a bass line that is atonal. **The last six measures are unanalyzable** since the notes encountered there avoid any combination that could be foreseen in diatonic harmony.



Example 4

The musical score for Example 4 consists of three systems of piano and bass staves. The first system shows a piano part with chords labeled Dm, C#m, G+, and Gb+. Dynamics include *p*, *gebunden*, *cresc.*, and *f*. The second system shows a piano part with dynamics *p*, *sfz*, and *dim.*. The third system shows a piano part with dynamics *pp* and *p.*. The bass line is atonal throughout.

Music based on melodies constructed from the chromatic scale and from a harmonic system that avoids tonality can [further] expand its harmonic means by venturing onto the path of quarter tones

But, in light of the problems that such music has in realization and performance, we have at present only a few examples of the use of quartertones in pieces written for string instruments, as in the violin part of *Mythes* by Szymanowski (Universal Edition) or in the Quartet of Alois Haba (from the same publisher). Polytonality and atonality

are not arbitrary systems. The former results from the development of diatonic harmony and counterpoint; the latter from chromaticism, and they can thus be studied as complementary techniques.

We have seen that despite their quite opposite origins they can merge in certain cases (atonal harmonies coming from polytonal counterpoint, or atonal melodies resting on a harmonic texture made from diatonic elements).

What determines the polytonal or atonal character of a work is less the compositional procedure than the basic melody that forms its source and comes from the “heart” of the musician. It is this absolute and organic necessity of the initial melody that keeps these procedures from congealing into a stillborn system. The life of a work depends only on the melodic invention of its author, and polytonality and atonality can furnish only a large canvas and a rich technical means, a complex and expressive gamut for his sensitiveness, imagination, and fantasy.

Source: Darius Milhaud, “Polytonalité et Atonalité,” *Revue musicale* 4 (1923): 29–44. Translated by Bryan R. Simms © 2006.