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Intonation and tuning as fundamental elements in choral practice according to the Eastern European choral school

Intonation and tuning are the foundations of the sonic world of choral music. In the context of choral performance, accurate intonation and tuning play a key role in shaping a harmonious sound and in influencing listeners' emotions. The Eastern European choral school is renowned for its balanced, rich sound, which is based on meticulous care for these crucial elements.

The development of choral music in Eastern European countries, especially in Ukraine, Russia and Belarus, is inextricably linked with church music and a rich folk singing tradition. Both these sources – sacred music and folklore – had a profound impact on the formation of a unique performance aesthetic in which intonation and tuning play a central role.

The tradition of singing in the East Slavic lands began to take shape as early as the time of Kievan Rus, where musical practice was closely connected with Orthodox liturgy. After the adoption of Christianity from Byzantium in 988, monophonic church chant developed in the form of Znamenny chant, inspired by Greek-Bulgarian models. By the 11th century, the first liturgical books with notated melodies had appeared, and monasteries such as the Kyiv Pechersk Lavra became major centres for cultivating this tradition. Over time, church chant began to take on a local Slavic character, and its further evolution – including the development of polyphony – contributed to the formation of a unique performance aesthetic whose features are present today in the Eastern European choral school.

Church music in the Orthodox tradition followed a different course from musical traditions in the West and was characterised by *a cappella* singing, as instrumental accompaniment is not permitted in the Orthodox Church. An important

aspect of Orthodox services is their length – they last much longer than, for example, Catholic Masses, and choral singing continuously accompanies the liturgy. A typical Sunday liturgy in the Orthodox tradition may last from two to three hours, and on feast days or special occasions services may extend to four or even five hours.

A particular form is the so-called all-night vigil – a service celebrated on the eve of major feasts, which in some traditions could literally last all night, comprising vespers, matins and the first canonical hour. This distinctive character required not only exceptional vocal stamina but also excellent intonation so that the harmony remained pure throughout the entire service. Without instrumental support, choristers relied on harmonic hearing.

As early as the Middle Ages, church music was based on neumatic chant traditions – known in Russia as Znamenny chant and in Ukraine and Belarus as the chant of the Kyiv circle. These melodies developed in various directions, drawing on both the Byzantine tradition and local melodic variants. It was only in the 17th century that Western musical influences began to permeate the region's choral practice, leading to the emergence of a new style – partesny singing.

Partesny singing appeared mainly in Ukraine and Belarus in the second half of the 16th century and flourished in the 17th century. It was polyphonic choral music, structurally similar to European motets and madrigals, based on counterpoint and polyphonic techniques. Partesny singing broke away from the earlier mono- and two-part Znamenny chant tradition and introduced a new approach to harmony and sonorities.

One of the most important composers of this period was Nikolay Diletsky (c. 1630 – c. 1690), author of *A Musical Grammar* (1675), the first known theoretical treatise on harmony in Eastern European music. Diletsky introduced the Western principle of *basso continuo*, while preserving the distinctive features of natural tuning and the characteristic melodic features of church chant. His partesny choral concertos were among the first works to successfully combine the Orthodox tradition with a modern approach to harmony and sound.

Another key composer in Eastern European choral music was Dmitry Bortniansky (1751–1825), considered one of the most important composers of church choral music in the 18th century. Having studied in Western Europe, especially in Italy, Bortniansky not only absorbed the principles of the Western concert style but also created a unique musical genre – the *a cappella* choral concerto.

This was an innovative combination of two traditions:

- Western European instrumental concerto – Bortniansky adopted its contrasting three-part (or, less often, four-part) form, as well as methods of developing musical material such as sonata form, fugue, etc.

- Eastern European church music – he used psalm texts in Church Slavonic, *a cappella* singing and rich choral polyphony.

The composer employed virtuosic solo writing, drawing on the Western concert tradition in which the soloist contrasts with the orchestra; in his works, however, the solo part was contrasted with the full sound of the choir.

The emergence of this genre had far-reaching consequences for the development of choral music. Works of increasing technical difficulty gradually began to emerge, which compelled choristers to develop harmonic thinking and refine their intonation. Performing these works required a high standard of vocal technique and deliberate work on tuning. Consequently, a choral school began to take shape, founded on the systematic development of intonation and harmonic thinking.

Folk singing, alongside church chant, constitutes one of the oldest and most important foundations of the Eastern European vocal tradition. It was practised within rural communities, transmitted orally from generation to generation and almost always performed *a cappella* – without instrumental accompaniment. This form of music-making shaped a specific approach to intonation, sensitivity to sonorities and the ability to tune collectively in an ensemble without an external point of reference.

In many regions – particularly in present-day Ukraine, Russia and Belarus – folk singing was characterised by rich polyphony and the use of natural intervals, making it an exceptionally advanced vocal phenomenon. Phenomena such as “stretched” singing (intentional widening of intervals), micro-intervals or particular types of vibrato were natural elements of performance, requiring a high degree of aural and intonational awareness from singers.

Moreover, local singing styles – for example, Ukrainian “white voice” singing or Russian heterophonic singing – were marked by intensive use of resonance and strong vocal production, which directly influenced the development of vocal techniques in professional choral practice. Many elements originating from folk practices were later reflected in techniques and exercises used in choral education.

One of the most important distinguishing features of Eastern European choral music is the predominance of *a cappella* works. In contrast to Western European music, where oratorios and cantatas with orchestral accompaniment developed, the choral repertoire in Eastern European countries focused almost entirely on unaccompanied singing. Works with instruments are rare in this repertoire. The practice of combining a choir with instrumental accompaniment began to develop only in the 19th century, initially mainly in the context of secular and concert music.

As a result, a distinctive choral school emerged in Eastern Europe, which in later years led to the creation of teaching methods based on conscious harmonic tuning. The rich choral tradition of this region contributed to the development

of a scholarly discipline devoted to choral music – choral studies. From the late 19th century onwards, various methods for working on intonation and tuning in choirs were developed, based to a greater or lesser extent on principles of “zonal” tuning¹. These methods became the foundation of choirmaster training in the countries of Eastern Europe.

Konstantin Pigrov and Pavel Chesnokov were among the key figures who contributed to the development of the Eastern European choral school. Both were outstanding conductors, pedagogues and choral practitioners, associated with both church and secular ensembles. Their work coincided with a period of dynamic cultural and political transformation in the Russian Empire, and later in the Soviet Union, where choral music – especially *a cappella* – flourished as a form of artistic and spiritual expression and also as a tool of ideological education.

Konstantin Pigrov (1876–1962) was a Ukrainian Soviet choral conductor, lecturer and professor at the Odessa Conservatory, today known as the Odessa National Music Academy. He is regarded as the founder of the choral school in southern Ukraine, known as the Odessa choral school, which played an important role in shaping generations of conductors and singers. His most important theoretical work is the handbook *Conducting a Choir* (1956), in which he described his methods and principles for working with a choir, focusing, among other things, on intonational problems and ways of resolving them.

Pavel Chesnokov (1877–1944) was a Russian Soviet conductor, composer, pedagogue and professor at the Moscow Conservatory. Known as the author of more than 500 choral works – mainly sacred – he was not only a practitioner but also a theoretician of choral art. In his handbook *The Choir and How to Direct It* (1940), he presented methods developed through many years of work with various types of ensembles, from church choirs to professional secular choirs.

Pigrov and Chesnokov not only pursued parallel careers during the same period but also knew and respected each other. Importantly, they referred to each other in their publications, as if their concepts complemented one another.

Before discussing their methods, however, it is necessary to explain the basic paradigm on which these methods are founded, namely so-called “zonal” tuning (Russian: зонный строй).

Zonal tuning is a way of understanding sound not only as a specific pitch but as a range of frequencies (a zone) within which a given sound can function. In other words, intonation does not consist in producing a single, exact frequency

¹ Zonal (or sectional) theory of musical hearing was introduced by the music theorist Nikolai Garbuzov.

but in placing the sound within the appropriate frequency band according to the context.

This way of thinking arises from consideration of the physics of sound and overtone structures, which determine our perception of “purity” or “tension” between sounds. In practice, this means that, for instance, a major third in the tonic chord may be slightly lower than the same third in the dominant – not because of harmonic theory as such, but because of its acoustic “placement” in different zones.

Depending on its function within the musical structure, a sound occupies different “zones”: low, middle or high. This concept relates to natural tuning, in which intervals are not equal and the differences amount to “fractions of microtones” – small yet crucial for pure choral sound.

Nikolai Garbuzov’s zonal theory assumes that a sound does not possess a single absolute pitch but functions within a certain frequency range – a so-called sound zone. Depending on the interval, this zone may span from 24 to as many as 70 cents². For example, the note “a¹” may be perceived as correct within the range of 435–448 Hz. Deviations within this range remain imperceptible to the ear, whereas crossing its boundaries results in the impression of singing out of tune. Between the main zones there are also intermediate – unstable – zones, where sounds lose their intonational clarity. A well-developed musical ear, however, can distinguish, for example, “low”, “normal” and “high” intonation within the same zone. This intonational differentiation becomes crucial for unified, in-tune ensemble singing – even if individual singers produce slightly different frequencies.

Importantly, zonal tuning is not an absolute unit; it is difficult to measure or notate precisely – it is based primarily on musical imagination, inner hearing and acoustic awareness. This is precisely why Pigrov’s and Chesnokov’s choral methods place such strong emphasis on developing a mental image of sound and the ability to “hear” it before singing – in relation to other sounds.

In this context, distinguishing between two types of tuning on which both methods are based is particularly important – melodic (horizontal) tuning and harmonic (vertical) tuning³. Melodic tuning refers to the linear succession of sounds – that is, the shaping of melody within a single choral part – and is closely related to musical direction and the tension and release within the vocal line. Harmonic tuning, on the other hand, refers to the relationships within vertical

² Cent – a logarithmic unit used in music theory to measure the interval between pitches. An octave contains 1200 cents, and one semitone in equal temperament is 100 cents.

³ The concept of dividing intonation into melodic and harmonic tuning was extensively discussed by K. Pigrov and P. Chesnokov as one of the fundamental elements of choral practice.

sonorities – between simultaneously sounding notes in different voices – and aims to achieve purity of sound and functional tensions among the components.

In practice, these two aspects of tuning are inseparable and interact with one another – and Pigrov’s and Chesnokov’s methods teach singers to balance them by considering the harmonic role of each sound. Choral practice, especially in a *cappella* performance, requires extremely precise awareness of both aspects. The melodic line must be shaped by the pattern of tension and release, while at the same time each note must blend with the other parts in an intonationally natural way. This approach presupposes that singers rely not on an external tuning source (e.g. an instrument) but on their own auditory perception and a shared conception of tonality and harmonic functions. Particular attention is also paid to the quality of vocal production, uniformity of vocal placement, evenness of dynamics and precision of articulation – all of which directly affect the tuning of the ensemble.

The principles of these methods have been thoroughly developed and are widely used by choral ensembles in Eastern European countries; they are also taught at music academies. They include principles for intoning individual degrees of major and minor scales, as well as for intoning intervals outside the key – which is of particular importance for pure intonation in more complex harmonic structures.

Since functional harmony lies at the core of the Eastern European musical school, these methods develop in singers the ability to hear harmonic functions while singing – that is, to reproduce a sound while understanding its place and significance within a given chord or tonal structure. Each component of a chord performs a specific function – and depending on that function, it should be intoned slightly differently: higher, lower, sharper, with tension, or with grounding.

In short, Pigrov’s and Chesnokov’s methods consist in consciously intoning sounds on the basis of imaginative thinking. The point is not solely the physical sense of hearing but the inner conception of a sound and its role – before it is sung. For this purpose, both authors introduced terms describing the character of a sound, including singing “high”, “low”, “sharp”, “weighted”, and others. These terms are not physical but relational and functional – they help to create a conception of a specific sound and its place in harmonic space.

Such an approach develops not only the ear but also harmonic awareness and zonal perception of sound – which is crucial to zonal tuning. A singer trained in these methods learns to think in terms of tensions and gravitational pulls between sounds, to determine the position of a sound within the harmonic space and to understand its relationship to other components. Thus vocal technique gains an additional dimension – it becomes a tool for expressing not only melody but also the internal structure of the music.

It is also worth emphasising that although these methods were created in the context of tonal music, their principles can successfully be applied to contemporary music, including atonal music. Although the authors did not develop separate systems specifically for atonal music, their approach – based on conscious relational thinking, auditory imagination and precise intonational differentiation – makes it possible to intone structures that lack a traditional tonal centre as well. Imaginative work with sound and intonation thus becomes the key to accurate performance and understanding of contemporary musical languages.

However, Pigrov's and Chesnokov's methods must not be treated as a "magic pill" that solves all intonational problems. Although their approach is based on an extremely well-developed imaginative and functional system, it does not eliminate the influence of purely physiological and technical aspects of singing, which also determine the quality of a choir's intonation. These factors include, among others, breathing, high vocal placement, precise articulation and diction, as well as the singer's physiological condition.

Both Pigrov's and Chesnokov's methods and the general approach of the Eastern European choral school show that intonation depends not solely on hearing or vocal technique but above all on a conscious approach to sound. It is also worth emphasising that these methods are not limited to the mechanical application of rules but serve primarily to develop inner hearing and harmonic awareness. Their effectiveness becomes evident only in practice – in regular work on intonation, which requires time, concentration and experience.

Contemporary choral practice, regardless of style, still faces the challenge of pure tuning. In this context, returning to methods developed within this tradition may be a valuable tool for conductors and pedagogues seeking a deliberately shaped and coherent ensemble sound. This approach teaches attentiveness to sound, sensitivity to harmonic relations and musical thinking that remain relevant across different eras and aesthetic traditions.

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Abstract

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The article examines work on intonation and tuning as key factors in choral performance, using the example of the Eastern European choral school. The analysis covers the historical background of liturgical and folk singing traditions, which have shaped a specific approach to intonation in ensemble practice. The concept of zonal (or spatial) tuning is discussed, along with the methods of Konstantin Pigrov and Pavel Chesnokov, which are based on a functional and imaginative perception of pitch. “Purity of intonation is the cornerstone upon which the choral art is based – without it, there can be no question of creating a choir of genuine artistic value” – Konstantin Pigrov, *Kierowanie chórem* [*Conducting a Choir*].

Keywords: intonation, zonal tuning, choral conducting, Eastern European choral tradition