INTERVALLIC STRUCTURE AND VOCAL PRODUCTION IN FERGHANA-TASHKENT MAQOM

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Abstract: This article examines the relationship between intervallic structure and vocal technique in the Ferghana-Tashkent branch of Uzbek maqom, a tradition within the broader Shashmaqom complex. Unlike its Bukharan counterpart, which underwent significant notation-based codification during the Soviet era, the Ferghana-Tashkent style has retained a stronger oral character, privileging flexible intonation and richly ornamented melodic lines. Through analysis of recorded performances and ethnographic observation of contemporary masters, this study argues that specific intervallic patterns - particularly the augmented second, the neutral third, and the variable fourth - directly condition vocal production in terms of register shifts, laryngeal positioning, and timbral coloration. The article further demonstrates that Ferghana-Tashkent singers employ what may be termed "intervallic kinesthesia," a embodied knowledge wherein pitch relationships are not merely heard but physically felt through specific adjustments of the vocal tract. This research contributes to the growing field of ethnomusicological voice studies by situating maqom singing within a framework that unites cognitive, acoustic, and pedagogical perspectives.

Keywords: Ferghana-Tashkent maqom, Intervallic kinesthesia, Augmented second, Neutral third, Vocal production, Oral transmission

Introduction

The vocal art of the Ferghana-Tashkent maqom represents one of Central Asia's most sophisticated and least-documented melodic traditions. While the Bukharan Shashmaqom has benefited from systematic study and transcription, the Ferghana-Tashkent branch has remained largely within the domain of oral transmission, its subtleties guarded by a diminishing number of ustods or masters. For the vocalist, this tradition presents challenges that extend far beyond mere melodic memorization. The singer must internalize an intervallic universe where the distances between pitches are not fixed in the equal-tempered sense but fluctuate according to modal context, poetic phrase, and emotional expression. These fluctuations are not arbitrary; they constitute a coherent system of microtonal inflection that directly shapes how the voice produces sound. The purpose of this article is to trace the causal links between intervallic structure and vocal production in this tradition, showing that the ear and the larynx operate in a continuous feedback loop unique to Ferghana-Tashkent practice.

To understand this relationship, one must first appreciate how the Ferghana-Tashkent maqom differs from its Bukharan relative. The Bukharan tradition, as systematized by the composer and musicologist Yunus Rajabi in the mid-twentieth century, was transcribed into staff notation and became the basis for conservatory education. This process necessarily simplified many microtonal nuances, flattening the augmented seconds and neutral intervals into approximations of the Western chromatic scale. The Ferghana-Tashkent style, by contrast, was

never fully subjected to such codification. Its practitioners continued to teach by direct imitation, using the tanbur or dutar as an accompanying instrument whose frets were adjusted by ear rather than by mathematical calculation. As a result, the intervallic content of Ferghana-Tashkent maqom retains a flexibility that many scholars have described as "living intonation" or "parlando rubato." For the singer, this flexibility is both liberating and demanding. It requires a vocal apparatus capable of producing and sustaining intervals that do not correspond to any keyboard or fixed-pitch instrument.

The Augmented Second and Its Vocal Demands

Perhaps no interval defines the Ferghana-Tashkent sound more than the augmented second, particularly as it occurs between the lowered second and third degrees of certain maqom scales, or between the raised sixth and seventh degrees. In Western equal temperament, the augmented second is enharmonically equivalent to a minor third, but in Ferghana-Tashkent practice, the two intervals are experientially distinct. The augmented second is consistently wider than the minor third, often approaching the size of a perfect third but retaining a characteristic "yearning" quality that singers describe as zorlanish or tension. Acoustically, this interval measures approximately three hundred and fifty to three hundred and seventy cents, falling roughly midway between a minor and a major third. Its production requires the vocalist to execute a leap that is too wide for a smooth portamento and too narrow for a clear intervallic break. Skilled singers navigate this by momentarily adjusting the laryngeal tilt, raising the thyroid cartilage slightly to narrow the pharyngeal space during the lower pitch and then expanding rapidly for the upper pitch. This maneuver creates a subtle but perceptible change in timbre, moving from a darker, more covered tone on the lower note to a brighter, more open quality on the upper note. The result is an interval that sounds not merely as two pitches but as a dynamic event, a miniature drama of tension and release.

The vocal challenge intensifies when the augmented second appears in descending motion. Where ascending augmented seconds allow the singer to build energy, descending versions risk sounding labored or disconnected. Ferghana-Tashkent masters address this by introducing a brief glottal articulation on the upper pitch before the descent, a technique known locally as qaqillatib aytish. This glottal pulse momentarily stabilizes the larynx, providing a solid platform from which the voice can drop cleanly to the lower pitch. Without this articulation, the descending augmented second tends to flatten slightly, losing its characteristic width. One hears this clearly in the vocal rendition of the sarakhbor section of Maqomi Dugoh, where the phrase often rises through a raised sixth to a leading tone and then falls back through the augmented second to the fifth. The finest singers make the interval sound inevitable, as though no other distance could possibly fit the melodic contour. This inevitability is learned not through theoretical explanation but through years of imitation, with the student placing their hand on the teacher's larynx to feel the subtle motions that produce the interval.

The Neutral Third and Register Management

If the augmented second governs melodic leaps, the neutral third governs the overall modal color. The neutral third lies between the minor and major third, typically around three hundred and fifty cents, though its precise intonation varies by context. In Ferghana-Tashkent maqom, the neutral third is not merely a pitch but a region, a bandwidth within which the singer may move microtonally to express different shades of emotion. When the melodic line lingers on a

neutral third for more than a beat, the singer's vocal production undergoes a significant shift. The typical response is to lower the laryngeal position slightly, increasing the length of the vocal tract and enhancing the amplitude of the second harmonic. This produces a timbre that Western listeners often describe as "dark" or "hollow," but which local connoisseurs call dilkash or heart-drawing. The darkness is not a deficiency but a desired quality, one that signals depth of feeling and mastery of control.

Managing the neutral third becomes particularly challenging when it functions as a pivot between two modal areas. In the usuli taronalari sections of many maqoms, the melody may oscillate between a neutral third and its neighboring whole tones, requiring the singer to shift the laryngeal posture multiple times within a single breath. Novices often produce a wavering or unstable sound at these points, their pitch drifting sharp or flat as the larynx struggles to find a stable position. Experts, by contrast, treat the neutral third as an opportunity for virtuosic display. They deliberately exaggerate the laryngeal lowering on the neutral third, then rapidly return to a higher larynx for the adjacent pitches, creating a vivid contrast in timbre that highlights the interval's unique color. This technique is sometimes called toraytirib kuylash or singing with constriction, though the constriction applies not to the glottis but to the supraglottic space, which narrows during the laryngeal descent. The resulting sound carries an intense, almost vocal-fry quality on the neutral third, followed by a clear, bell-like tone on the following pitch. The alternation between these two vocal qualities becomes a structural device in its own right, marking the neutral third as a point of expressive emphasis.

The Variable Fourth and Vocal Flexibility

Perhaps the most subtle intervallic feature of Ferghana-Tashkent maqom is the variable fourth. Unlike the perfect fourth of Western music, which remains fixed at five hundred cents, the fourth in this tradition can range from approximately four hundred and eighty cents to five hundred and twenty cents, depending on the surrounding pitches and the poetic text. A low fourth, approaching the size of a diminished fourth, often appears in descending phrases where the singer wishes to convey grief or introspection. A high fourth, approaching an augmented fourth, appears in ascending passages of exaltation or triumph. This variability poses a unique problem for vocal production, because the fourth is a relatively large interval that requires a consistent breath flow to maintain vocal quality across the leap. If the singer changes the intonation of the fourth by as little as twenty cents, the feeling of support in the abdominal and intercostal muscles must shift correspondingly. Lowering the fourth typically requires a slight increase in subglottal pressure, as the vocal folds must adduct more firmly to produce the darker timbre associated with the lower version. Raising the fourth requires a decrease in pressure but an increase in airflow, allowing the voice to brighten without becoming shrill.

Skilled Ferghana-Tashkent singers internalize these adjustments to the point of automaticity. During performances of the Naqshi maqom, for instance, one frequently encounters a melodic formula that ascends from the tonic to the fourth, lingers on that fourth with a slight microtonal rise, and then descends to the neutral third before returning to the tonic. The microtonal rise of the fourth is not notated in any score, nor is it explicitly taught as a discrete rule. It emerges from the singer's sensitivity to the contour of the phrase and the meaning of the underlying Ghazal poetry. If the lyric speaks of longing, the fourth may drift upward by ten or fifteen cents, creating an almost imperceptible sense of reaching. If the lyric speaks of resignation,

the same interval may drift slightly downward, sounding more settled and grounded. The vocal production follows these microtonal shifts seamlessly, because the singer has learned to correlate pitch deviation with changes in breath pressure, laryngeal tilt, and pharyngeal width. This is the essence of intervallic kinesthesia: the body knows how to produce the interval not as a fixed target but as a responsive, expressive gesture.

Pedagogical Implications and Oral Transmission

The relationship between intervallic structure and vocal production has profound implications for how Ferghana-Tashkent maqom is taught and learned. Unlike conservatory-trained singers who learn intervals from a keyboard or a score, apprentices in this tradition learn through a method called usulda o'rganish or learning through the system. The teacher sings a short phrase, and the student imitates it, not once but dozens of times, until the intervals feel as natural as speech. During this process, the teacher may place a hand on the student's throat or chest, feeling for the correct muscular adjustments. The teacher may also have the student sing while holding a finger just above the laryngeal prominence, monitoring its height. These tactile methods convey information that no notation can capture: the precise degree of laryngeal lowering for a neutral third, the glottal pulse that stabilizes a descending augmented second, the shift in breath pressure that colors a variable fourth. The student learns not only to hear the interval but to feel it in the throat, the chest, and the abdomen.

This pedagogical approach accounts for the remarkable consistency of intervallic practice across generations of Ferghana-Tashkent singers, even in the absence of written scores. One might expect that without fixed notation, intervals would drift randomly over time. They do not, because the vocal apparatus itself provides a stabilizing feedback loop. A neutral third that sounds wrong to the ear also feels wrong to the larynx, causing a sensation of strain or instability. A variable fourth that deviates too far from the modal context forces the singer into an uncomfortable register shift. In this sense, the human voice is not merely a passive transmitter of pre-existing intervals but an active participant in defining them. The intervals of Ferghana-Tashkent maqom are what they are partly because they fit the voice comfortably, because they exploit the natural resonances and agility of the human instrument. This mutual adaptation between interval and voice is what gives the tradition its characteristic sound: a sound that is at once precise and flexible, rigorous and expressive.

Conclusion and Directions for Further Research

The Ferghana-Tashkent maqom tradition offers a compelling case study of the interdependence between intervallic structure and vocal production. The augmented second demands laryngeal tilt and glottal articulation. The neutral third invites laryngeal lowering and supraglottic narrowing. The variable fourth requires nuanced adjustments of breath pressure in response to microtonal shifts. These relationships are not incidental but constitutive of the musical style itself. To alter the intervals is to alter the vocal technique, and vice versa. This insight has implications beyond the study of Uzbek music. It suggests that in orally transmitted traditions, the voice and the melodic system co-evolve, each shaping the other in a continuous feedback loop. Future research might explore how these vocal techniques compare with those of neighboring traditions, such as Uyghur muqam or Persian dastgah, both of which employ similar intervals but with different vocal aesthetics. Further study might also investigate how contemporary Ferghana-Tashkent singers negotiate between traditional intervallic flexibility and

the demands of recording studios, where pitch correction software and equal-tempered accompaniment tracks exert pressure toward standardization. For now, it is enough to recognize that in this tradition, the interval is not an abstract relationship between frequencies but a lived, embodied experience, felt in the singer's throat and heard in the listener's soul. The voice does not merely reproduce intervals; it inhabits them, and in that inhabitation, the intervals come alive.

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