

Pitch Construction in Regional Contexts: A Study on the Ethnic Characteristics of Pitch Materials in "Light of Northern Xinjiang"

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Abstract: Taking the a cappella choral cycle *Light of Northern Xinjiang* as the research subject, this study systematically explores how the work constructs a pitch system possessing both regional identity and artistic tension through the creative transformation of traditional Mongolian musical elements, from three dimensions: tracing the ethnic origins of its pitch materials, analyzing their morphological characteristics, and mapping their cultural connotations. The study finds that the pitch materials of the work are deeply rooted in traditional genetic sources such as Mongolian *urtyn duu* (long song), *Khorchin* storytelling tunes, and *chuur* music. Using the core intervals of the fourth and fifth as its skeleton, and through modal variations, modular expansion of pitch sets, and onomatopoeic pitch design, the work achieves a musical interpretation of the natural landscapes and humanistic spirit of Northern Xinjiang. This research provides a practical path worthy of reference for the transformation of ethnic elements in pitch organization within contemporary a cappella choral composition.

Keywords: *Light of Northern Xinjiang*; A Cappella Choral Music; Pitch Materials; Mongolian Music; Ethnicity

1. Introduction

The Mongolian musical culture of Northern Xinjiang, with its unique modal systems, melodic logic, and acoustic characteristics, constitutes a significant component of the Chinese national musical treasury. The a cappella choral cycle *Light of Northern Xinjiang* takes the natural landscapes and humanistic spirit of Northern Xinjiang as its creative core, deeply integrates traditional Mongolian musical elements such as throat-singing *chuur*, *Khorchin* storytelling tunes, and *morin khuur* sonorities, and employs modern compositional techniques to construct an artistic expression that embodies both ethnic and contemporary qualities. Current academic research on this work has largely focused on its overall style and structural framework, while specialized deconstruction of its pitch materials and analysis of their ethnic characteristics remain relatively insufficient. This paper takes the pitch materials from the four movements of the work as its entry point, traces their origins in ethnic music, analyzes their morphological features and cultural mappings, aiming to provide theoretical reference for technical research and creative practice in choral works of similar thematic scope.

2. Tracing the Ethnic Origins of the Pitch Materials in Light of Northern Xinjiang

The Mongolian ethnic group, as one of the principal peoples of the Northern Xinjiang region, has developed its musical culture with the grassland as its existential foundation, forming a musical system centered on *urtyn duu* (long song) and *bogino duu* (short song). The pitch genes contained within this system possess distinct ethnic identifiers. Mongolian *urtyn duu* is based on the pentatonic scale, commonly constructing melodies using the five notes-Gong, Shang, Jue, Zhi, and Yu-corresponding to the pentatonic series. The interval relationships are dominated by leaps of the perfect fourth and perfect fifth, supplemented by a small number of stepwise motions like major seconds and minor thirds, forming a melodic style that is resonant, expansive, and free. For example, the frequently employed "Nogula" (ornamentation) technique in *urtyn duu* works, through glissando and vibrato modifications of core pitches, causes the pitch to exhibit delicate fluctuations and variations. This not only mimics the vast, boundless expanse of the grassland but also expresses the herders' reverence and affection for nature. Such ornamentation is not arbitrarily added but is highly congruent with the phonetic rhythms of the Mongolian language, embodying the ethnic musical trait of "pitch following speech."

Furthermore, the pitch organization in Mongolian music also exhibits a characteristic "fluidity." Indeterminate pitch slides often appear in urtyu duu melodies, where the duration of core pitches is significantly extended, and the pitch fluctuates freely within a certain range, forming a melodic morphology of "more melodic elaboration, fewer textual syllables." This approach to pitch treatment is closely related to the nomadic lifestyle of the Mongolian herders, reflecting both the openness of the grassland space and the freedom and unrestrained nature inherent in the ethnic character. In extracting the pitch genes of Mongolian music for *Light of Northern Xinjiang*, the composition not only preserves the core intervals of the perfect fourth and perfect fifth along with the "Nogula" ornamentation technique but also transforms the fluidity of pitch into textural tension within the choral fabric, laying the foundation for the work's ethnic expression^[1-3].

2.1 Extraction of Modal and Interval Genes from the Mongolian Long Song

The Mongolian Long Song is predominantly based on the Yu-mode, with its core pitch set presenting a four-note framework of "Yu, Gong, Shang, and Jue." The frequent use of the intervals of the fourth and fifth endows the melody with a desolate and distant regional character. The second movement, "Distant Melody," in *Light of Northern Xinjiang* directly extracts these core genes of the Long Song. The thematic melody is built upon the foundational pitch set of "Yu, Gong, Shang, and Zhi," restoring the Long Song's rhythmic characteristic of "fewer syllables, longer melodic phrases, and continuous undulation" through fourth leaps (Yu to Gong) and sustained notes. As Ulaan Jer stated, "The soul of the Long Song lies in its interval relationships and breath control; the intervals of the fourth and fifth are the musical ligaments connecting heaven, earth, and the human heart." By consistently employing this core interval, the work constructs a pitch-based identifier of grassland culture.

2.2 Integration and Reference of Rhythm and Pitch from the Khorchin Storytelling Tune

The Khorchin storytelling tune is characterized by the fixed rhythm and melodic leaps of the bass four-stringed fiddle. Its pitch materials are primarily based on the pentatonic scale, frequently alternating between the fifth leap of "Shang to Zhi" and the major second step of "Gong to Shang." The third movement, "Pastoral Dance," incorporates the pitch and rhythmic characteristics of the storytelling tune. It translates the "syncopated rhythm + fifth leap" of the bass four-stringed fiddle into the choral texture: the bass section adopts the fifth leap of "Gong to Zhi" as its core pitch motive, combined with a fixed rhythmic pattern, simulating the percussive sound of striking the resonator and the melodic line of the bass four-stringed fiddle in the storytelling tune. This approach imbues the music with distinct Khorchin cultural features. This transformation achieves a cross-domain fusion of "instrumental pitch to vocal pitch," preserving the narrative quality and rhythmic vitality of the storytelling tune.

2.3 Transformation of Drone and Harmonic Series from Chuur Music

Mongolian Chuur music (including throat-singing chuur) is founded on a sustained bass note, over which harmonics are superimposed to create a three-dimensional sound texture of "fundamental-fifth harmonic-octave harmonic." The first movement, "Desert," transforms the drone of Chuur music into a sustained pitch A in the bass section of the choir. The chest resonance of the bass voices simulates the deep, rich texture of throat-singing chuur. Simultaneously, the soprano section extracts the G and C# notes from the harmonic series, forming a harmonic combination of "G-A-C#" with the sustained bass A. This approach not only preserves the harmonic foundation of Chuur music but also uses the bright timbre of the harmonics to mimic the distant echoes of a desert mirage. Thus, it achieves an innovative choral adaptation of traditional vocal elements.

3. Morphological Characteristics of the Pitch Materials in *Light of Northern Xinjiang*

3.1 Fixation and Contextual Application of Core Intervals

The work constructs its pitch system using the intervals of the fourth and fifth as the core, applying them differentially according to the scenic themes of each movement: In "Distant Melody," the perfect fourth interval "Yu to Gong" is extended through sustained notes, highlighting the vastness of the grassland; in "Pastoral Dance," the perfect fifth interval "Gong to Zhi" is combined with short, brisk

rhythms to simulate the leaping cadence of horse hooves; in "Border Forest," the minor third interval "Jue to Zhi" is integrated with chromatic motion to evoke the tranquil depth of the forest. This approach of "core intervals + contextual adaptation" ensures the unity of the pitch materials while achieving differentiated expression of scenes through subtle variations in interval coloration.

3.2 Modular and Logical Progression in Pitch Set Expansion

The work divides the core pitch sets into a "basic module" and an "extended module," expanding them progressively according to the developmental logic of the movements: The movement "Desert" employs the four-note basic module "G-A-B \flat -C#," using repetition and transposition to simulate the monotony and mystery of the desert; "Distant Melody" adds the note Zhi to the four-note set, forming an extended pentatonic module that enriches the lyrical quality of the grassland melody; "Border Forest," in turn, incorporates auxiliary notes such as Qingjiao and Biangong, forming an extended seven-note module of "Gong-Shang-Jue-Qingjiao-Zhi-Yu-Biangong," creating a sense of layered depth in the forest through chromatic pitch sets. Throughout the process of modular expansion, the stability of the core intervals (the fourth and fifth) is consistently maintained, achieving a pitch development logic of "seeking variation within unity."

3.3 Timbre-based Construction of Onomatopoeic Pitch

As an a cappella choral work, *Light of Northern Xinjiang* extensively employs onomatopoeic lyrics, establishing a triple association of "pitch-timbre-semantics": In "Desert," the word "hush" (wind sound) utilizes a chromatic glissando (C# to D) in the soprano part to simulate the elusive nature of wind; "hum" (camel's breath) adopts a connected pitch line (A-G-F) in the mid-low register of the baritone part to restore the deep rhythmic quality of breathing; in "Pastoral Dance," "tagataga" (horse hoofbeats) employs a major second alternating pitch of "Gong-Shang-Gong-Shang," combined with staccato treatment to mimic the crisp, rhythmic motion of horse hooves. This onomatopoeic pitch design breaks through the traditional melodic logic of choral music, deeply binding pitch with timbre and semantics, thereby achieving the sonic effect of "shaping forms through sound and conveying meaning through voice."

3.4 Plurality and Integration of Modal Alternation

The work employs a poly-modal alternating structure of "Yu-mode - Gong-mode - Zhi-mode," which is deeply aligned with the themes of the movements: "Desert" is dominated by the Yu-mode, highlighting the desolation and mystery of the desert; "Distant Melody" alternates between "Yu-mode and Gong-mode," expressing the vastness of the grassland's history and the vitality of life; "Border Forest" centers on the Zhi-mode, creating the brightness and depth of the forest through modal alternation. Modal transitions are linked by common tones (such as Gong and Shang). For example, the transition from Yu-mode to Gong-mode in "Distant Melody" uses Shang as a pivot to achieve a natural shift. This approach not only preserves the characteristic "modal fluidity" of traditional Mongolian music but also enhances the contrast of modal colors through modern harmonic techniques^[4-6].

4. Cultural Mapping of the Ethnic Characteristics of Pitch Materials

4.1 Extraction and Purification of Ethnic Pitch Elements

The use of ethnic pitch materials in *Light of Northern Xinjiang* is first based on the accurate extraction and purification of the core pitch genes of various ethnic groups. The creator conducted in-depth research into the pitch characteristics of the musical traditions of the ethnic groups in Northern Xinjiang, stripping away non-essential expressive forms to distill the core elements with ethnic identifiers—such as the Mongolian pentatonic scale, leaps of the perfect fourth and perfect fifth, and the "Nogula" ornamentation. These extracted core elements become the "cultural genes" for the work's pitch construction, ensuring the accuracy of its ethnic expression. During the extraction process, the creator focused on grasping the "essential characteristics" of the ethnic pitch elements. For example, regarding the "Nogula" ornamentation in the Mongolian Long Song, rather than simply replicating its free and unstructured expressive form, it was transformed into an ornamental pattern with a clear rhythmic shape. This adaptation makes it more suitable for the unified performance of choral voice parts. This process of "extraction-purification" not only preserves the core qualities of the ethnic pitch

elements but also adapts them to the polyphonic texture demands of choral composition, achieving a preliminary unity between ethnicity and artistry.

Furthermore, the work strengthens ethnic characteristics through the method of "focusing on core intervals." For instance, in passages depicting Mongolian cultural scenes, leaps of the perfect fourth and perfect fifth are intensively employed alongside pentatonic melodic lines to create a rich grassland atmosphere; in sections portraying festive scenes, the music is based on a heptatonic scale to enhance the warm, celebratory ambiance. This focused application makes the pitch characteristics of each ethnic group more distinct and also lays the foundation for the subsequent fusion of multi-ethnic pitch elements.

4.2 Modern Transformation of Ethnic Pitch Elements

To adapt ethnic pitch elements to the aesthetic context of contemporary choral music, *Light of Northern Xinjiang* undertakes a modern transformation of traditional ethnic pitch materials. By integrating them with modern compositional techniques, the work imbues these elements with new artistic vitality. This transformation preserves the core characteristics of the ethnic pitch materials while expanding their expressive potential, thereby achieving an organic unity between ethnicity and modernity.

4.2.1 Modernization of Ornamentation

The work transforms the free-flowing ornaments of traditional ethnic music, such as the Mongolian "Nogula," into ornamentation patterns with defined rhythmic shapes, integrating them into the harmonic textures of modern choral writing. For instance, the free glissando found in Mongolian Long Song is reworked into a gliding figure with dotted rhythms. This approach preserves the subtle pitch variations while enhancing the unity of the vocal parts. Furthermore, the harmonics associated with Mongolian throat singing are incorporated into the harmonic texture. Through the layering of vibrato across multiple voice parts, a rich sonic effect is created, adding depth and dimension to the music. This treatment ensures that traditional ornamentation is not merely a melodic embellishment but becomes a crucial element in constructing harmonic color and driving musical development^[7].

4.2.2 Modern Transformation in Harmonic Configuration

The work breaks through the monophonic or simple harmonic patterns of traditional ethnic music by integrating ethnic pitch elements with modern harmonic techniques, forming a harmonic language that embodies both ethnic character and a modern sensibility. For example, based on the Mongolian pentatonic scale, the work employs quartal harmony to construct a spacious, distant sonic effect. This approach not only aligns with the regional characteristics of the grassland but also reflects the harmonic aesthetics of modern choral music. Additionally, the use of secundal harmony enhances musical tension, thereby intensifying the passionate and unrestrained ethnic quality. Furthermore, the work utilizes modern techniques such as tonal ambiguity and modulating sequences, providing broader developmental possibilities for the ethnic pitch elements and making the musical expression more dramatic and impactful.

4.2.3 Modern Construction of Pitch Development Logic

The work draws upon the developmental techniques of Western modern music, subjecting ethnic pitch materials to processes such as variation, expansion, and contraction, thereby forming a rigorous musical structure. For instance, taking a core Mongolian melodic fragment as a theme, it employs variational techniques including transposition, interval expansion, and the addition of ornamentation. This allows the theme to appear in different forms across various sections, maintaining musical unity while achieving a layered deepening of emotional expression. Furthermore, characteristic intervals are treated as core motives and are developed through techniques such as sequence and contraction, propelling the music forward and contributing to climax building. This modernized developmental logic endows the application of ethnic pitch materials with greater systematicity and rationality, elevating the work's artistic caliber.

The pitch construction in *Light of Northern Xinjiang* is not merely an innovation at the technical level but also a musical expression of the cultural spirit of the Northern Xinjiang region. The fourth and fifth intervals and the treatment of sustained notes derived from the Long Song genes reflect the vast, boundless expanse of the Northern Xinjiang grasslands and the broad-minded character of the Mongolian people. The fusion of pitch and rhythm from the Khorchin storytelling tunes embodies the narrative traditions and vitality of the grassland peoples. The transformation of the drone and harmonic

series in Chuur music demonstrates the Mongolian people's acute perception of natural sounds and their artistic reinterpretation. From the perspective of scenic expression, the four-note set and harmonic combinations in "Desert" simulate both the spacious acoustics of the desert and metaphorically represent the primordial power of nature. The modal pitch lines of the Long Song in "Distant Melody" carry the spatiotemporal sentiment of "the voice of the grassland, echoing at the horizon," conveying a cultural heritage that traverses past and present. The fifth leaps and fixed pitch motives in "Pastoral Dance" recreate the unrestrained energy of the Beleg dance and the resilience of the Mongolian horse. The heptatonic pitch sets and harmonic colors in "Border Forest" resonate with the poetic imagery of "mountains like screens, waters like mirrors," expressing reverence and love for the nature of Northern Xinjiang. This triple mapping of "pitch-culture-scene" achieves a profound unity between technical form and cultural connotation^[8].

The ethnic characteristics of the work's pitch materials hold significant artistic value and cultural meaning. At the artistic level, they provide a creative paradigm of "gene extraction-modern transformation" for the nationalized innovation of choral art, enriching the pathways for expressing ethnic qualities in contemporary choral works. At the cultural level, they construct an artistic vehicle for regional cultural identity, promote the exchange and integration of multi-ethnic cultures in Northern Xinjiang, and infuse new impetus into the inheritance and development of ethnic musical culture. The successful practice of the work proves that the nationalized creation of choral art must both deeply excavate traditional cultural genes and adhere to the spiritual core of ethnic culture, while also courageously drawing on modern artistic techniques to achieve an aesthetic convergence between tradition and modernity. It must both respect the uniqueness of each ethnic culture and seek common ground among different ethnic cultures, realizing the organic symbiosis of multi-ethnic cultures.

Conclusion

The pitch materials of *Light of Northern Xinjiang* are rooted in traditional Mongolian music. Through methods such as the extraction of modal genes from the Long Song, the fusion of pitch and rhythm from storytelling tunes, and the transformation of the harmonic series in Chuur music, the work constructs a pitch system that embodies both ethnic and contemporary qualities. The contextual application of core intervals, the modular logic of pitch set expansion, the timbral construction of onomatopoeic pitch, and the pluralistic modal alternation not only ensure the recognizability of regional culture but also highlight the artistic characteristics of a cappella choral music and the innovative vitality of modern compositional techniques. The pitch construction practice in this work provides an effective path for contemporary choral composition: the modern transformation of traditional elements and the artistic expression of regional culture. It also offers significant theoretical reference for technical research on similar works. Future studies could further expand into the analysis of the relationships between pitch materials, choral timbre, and textual semantics, to more comprehensively reveal the work's creative logic and artistic value.

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