ORGANOLOGICAL AND CONSTRUCTIVE FEATURES OF THE UZBEK GHIJJAK AND THE KARAKALPAK GIRJEK: A COMPARATIVE ANALYSIS

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Abstract:*This scientific thesis presents a comparative analysis of the organological structure, acoustic-constructive features, and distinguishing as well as common aspects in performance practice of the Uzbek gijjak and the Karakalpak girjek—two prominent bowed string instruments in the traditional music culture of Central Asia. The study scientifically substantiates the specific acoustic functions of the soundbox (resonator), neck structure, string system, skin membrane, and bow (tartqich) technique of both instruments.*

Keywords: *Uzbek gijjak, Karakalpak girjek, organology, constructive features, bowed string instrument, resonator, bakhshi art, comparative analysis.*

Bowed string instruments (chordophones) hold a special aesthetic and performance place in the musical culture of the Turkic peoples of Central Asia. Sources of traditional organology formed over the centuries indicate that although the Uzbek gijjak and the Karakalpak girjek share a common genetic root, each acquired an independent constructive form driven by specific vocal-folkloric traits, performance schools, and musical-aesthetic needs of each respective people. The anatomical structure of musical instruments determines their sound production mechanism, timbre coloration, and ensemble or accompaniment functions. Therefore, a comparative study of the constructive features of the Uzbek gijjak and the Karakalpak girjek is of significant scientific importance for Central Asian organology.

1. Constructive evolution and anatomy of the uzbek ghijjak

In the course of its historical development, the Uzbek national gijjak transitioned from a traditional appearance to a refined stage adapted to the demands of modern professional orchestras and academic performance.

- **Soundbox (Resonator) and Skin Covering:** The soundbox of the Uzbek gijjak is usually carved from mulberry, walnut, or other hardwood types into a spherical or slightly flat-oval shape. The upper part of the soundbox is tightly covered and glued with calfskin, goatskin, or sometimes catfish skin, which provides a distinctive acoustic vibration and a sharp timbre.

- **String System and Tuning:** While the traditional Uzbek gijjak formerly had 3 strings, during the modernization phase of the 20th century, it was fully converted into a **4-string system** (tuned in fifths according to violin tuning: G, D, A, E). This modification sharply expanded the instrument's range and enabled the performance of academic compositions and complex maqom melodies.

2. Traditional organological features of the karakalpak girjek

The Karakalpak girjek is one of the instruments that has preserved its archaic constructive and organological state within traditional musical culture, particularly in bakhshi and epic storytelling art.

- **Soundbox and Fish Skin Covering:** The soundbox of the Karakalpak girjek has a more compact shape and is also crafted from local mulberry or other types of wood. The primary constructive uniqueness of the girjek lies in tightly covering its soundbox with **catfish skin** (Karakalpak: jaqqa teri). Aside from being resistant to atmospheric humidity, catfish skin imparts a soft, lyrical, plaintive timbre suited to epic melodies.
- **String System and Tuning:** The Karakalpak girjek strictly features a **3-string** configuration. The strings are traditionally tuned in **fourths** (E, A, D). This tuning system ensures complete harmony with the alamoynaq dutor and the vocal range of the bakhshi.
- **Neck and Fretless System:** The neck of the girjek similarly contains no tied or glued frets. During performance, the musician relies solely on absolute pitch and finger dexterity. The length of the neck and the placement of the tuning pegs (buranglar) are adapted to the vibrations of the 3-string system.

3. Constructive comparison and acoustic-performance differentiation

Constructive Parameters	Uzbek Gijjak	Karakalpak Girjek
Number of Strings and Tuning	**4 strings** (G, D, A, E — tuned in fifths).	**3 strings** (E, A, D — tuned in fourths).
Resonator Membrane	Goatskin, calfskin, or catfish skin (resonant and sharp sound).	Mostly **catfish skin** (soft, lyrical, and archaic sound).
Bow (Tartqich)	Closely aligned with a violin bow; tension is	Traditional bow (50–60 cm); made from horsehair, with the

Constructive Parameters	Uzbek Gijjak	Karakalpak Girjek
	controlled via fingers and frog/spring mechanism.	lower span adapted for epic rhythms.
Acoustic Function	Wide-range performance in solo, ensemble, and symphony-orchestra settings.	Accompanying (janapay) the bakhshi and alamoynaq dutor, enriching epic melodies.

Conclusion

The comparative-constructive analysis of the Uzbek gijjak and the Karakalpak girjek demonstrates that although both instruments derive from a single root, their developmental paths and aesthetic functions differ. While the Uzbek gijjak followed a path of academization and range expansion to assume a 4-string professional form, the Karakalpak girjek preserved its authenticity as an integral and unique part of bakhshi art through its 3-string archaic structure, fish skin membrane, and fourths tuning. The scientific study of these constructive features contributes significantly to the enrichment of Central Asian organology.

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