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Research Article

Unified Kanun: A new instrument model from the perspective of Turkish and Western organology[1]

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Abstract

This study focuses on a new instrument model developed within the framework of Turkish musical culture and the science of organology, called the Unified Kanun. Designed by integrating two kanuns into a single body, this instrument transcends the performance possibilities of the traditional kanun, offering expanded technical capacities. This article examines in detail the rationale behind the emergence of the Unified Kanun, the patenting process, and findings based on academic research. The fundamental feature of the Unified Kanun is that the playing responsibility of both hands can be undertaken by a single hand, while allowing simultaneous modification of levers (mandals) in different octaves. This innovation facilitates polyphonic performance and makes it possible to play works from diverse musical disciplines, including guitar and piano repertoires. From the perspective of Turkish organology, the naming of the Unified Kanun aligns with traditional naming practices observed in instruments such as the Yaylı Tanbul and the Cümbüş. From the perspective of Western organology, it corresponds to the "combined/unified" instrument approach described in the classification system of Curt Sachs and Erich von Hornbostel. In this regard, the Unified Kanun maintains terminological accuracy in both local and universal contexts. The Unified Kanun is not only a technical innovation but also an original model that contributes to the literature of organology. This article thus introduces a novel approach with the potential to enrich both Turkish musical culture and the international field of organological studies.

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Introduction

This study represents a significant breakthrough in the field of organology both in Türkiye and worldwide. It is noted that national inventions in the field of music in Türkiye began in 2002, and there were 20 inventions between 2002 and 2018. According to the information presented in the light of statistical data, the scarcity of studies conducted in the field of organology is noteworthy (Şakalar, 2024: 44). Based on the fact that any kind of organological research will contribute to the field, a new instrument was created through a physical and technical innovation applied to the *kanun* instrument.

The attempt to use a different playing technique on the *kanun* and the consideration of its organological structure to suit this technique can be regarded as the reason and justification for the emergence of this new instrument. In the intended technique, the new instrument was expected to allow both hands to change levers (*mandals*) in different octaves. Moreover, this instrument was designed with the idea that a single hand could perform the tasks normally

[1] This study is derived from the first author's doctoral dissertation

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carried out by both the right and left hands. The inability of the traditional *kanun* to provide this capability and to meet these needs made such a structural change necessary. Accordingly, a new instrument was designed by connecting two *kanuns* via the bottom block.

The technical work on the "Birleşik Kanun" (*Unified Kanun*) began in 2004, and its patent was obtained in 2017. In Çalkap's (2019) master's thesis related to this instrument, five expert *kanun* performers (academics and State Artists) were selected. Three pieces (*Rast Saz Semaisi* by Benli Hasan Ağa, *Nihavent Sirto* by Göksel Baktagir, and the *Carmen Habanera* section by Georges Bizet) were recorded and shown to the experts. No technical details on how the instrument was performed were provided, and no exercises were demonstrated. The videos were shown to the experts, questions were asked, and the answers were analyzed.

In this thesis study, the name "Useful Model Kanun," registered at the patent institute, was used, and no additional name was assigned. In this article, however, a new model different from the initial prototype is presented. Over time, the organological shortcomings and errors identified in the first prototype were corrected, and this new instrument was rebuilt with the desired structure.

Organological Basis of the Term "Birleşik Kanun"

From the Perspective of Turkish Organology

In the Turkish organological tradition, it is observed that structural innovation in newly developed instruments is directly reflected in their names. For example, *Yaylı Tanbur* is a version of the classical *tanbur* played with a bow, and *Cümbüş* is a hybrid instrument born from the combination of the *ud* and the *banjo*. Similarly, the term "*birleşik*" (*unified*) has been used in models such as the "*Birleşik Ney*," which emerged from the combination of *neys* of different sizes.

In this context, naming the new instrument — which emerged from the organological integration of two *kanuns* into a single body — as "Birleşik Kanun" (*Unified Kanun*) can be considered a consistent approach in line with the Turkish organological tradition.

From the Perspective of Western Organology

In Western organology, one of the fundamental references is the classification system *Systematik der Musikinstrumente* (1914), developed by Curt Sachs and Erich Moritz von Hornbostel. In this system, instruments are classified as "simple," "composite," and "combined/unified."

For example, in cases like the *double harpsichord* or *combined lutes*, where multiple instrument structures are integrated into a single body, the terms "combined" or "unified" are used to describe them (Sachs & Hornbostel, 1914). Thus, the term "Birleşik Kanun" (*Unified Kanun*) is also compatible with the terminology of Western organology.

The Importance of the Term "Birleşik Kanun"

The name "**Birleşik Kanun**" represents an approach that integrates both the naming tradition seen in Turkish organology and the classification terminology of Western organology. This name clearly and scientifically reflects:

- Its organological innovation (the combination of two *kanuns*),
- Its patent and utility model background,
- Its terminological compatibility recognized in international literature.

In this respect, "Birleşik Kanun" stands out as an appropriate term that can be used in both local and global organological literature.

The Necessity of the "Birleşik Kanun" Instrument

The *kanun* instrument, with its polyphonic structure and the advantage of using ten fingers, makes the performance of many different musical genres possible. With this advantage, the *Birleşik Kanun* introduces an even richer organological structure compared to the traditional form. The developed *Birleşik Kanun* has been designed to be suitable for a wide range of repertoires, from guitar literature to piano repertoire and many different genres and disciplines of music.

The dual-use nature of the instrument allows lever changes in different octaves to be performed simultaneously. Along with this feature, the *Birleşik Kanun* provides significant convenience and advantages, such as reading double treble clefs, performing certain piano works, and incorporating some stylistic characteristics of *bağlama* playing techniques.

Organology of the Birleşik Kanun

In the instrument classification introduced by Curt Sachs and Erich von Hornbostel, the founders of organology and pioneers of instrument classification, the kanun is categorized under chordophones, specifically composite chordophones and plucked chordophones (Zeitschrift für Ethnologie, 1914: 554–590). The kanun model proposed in this study, due to its physical structure formed by the combination of two kanuns, belongs to the group of instruments in which the strings, the way they are held, the materials used to pluck them, and their integration with a resonator or soundbox are considered together. Therefore, the proposed Combined Kanun is thought to belong to the same group as the traditional kanun in the instrument classification by Curt Sachs and Erich von Hornbostel.

In this study, which presents the physical structure and technique of the Combined Kanun in detail, the physical structure of the Combined Kanun will first be described. With its physical structure, the Combined Kanun is clearly distinguished from the traditional kanun at first glance. Unlike the traditional kanun, the Combined Kanun is an organological structure formed fundamentally by connecting two kanuns to each other with a single membrane and a single bridge, with their inner cavities left open and facing one another.

Photo 1. The first prototype made for experimental purposes in 2004 (Çalkap, 2019, p. 10)

The first double-kanun prototype shown in Photo 1 was protected by obtaining its patent on 21/07/2017 and its design registration certificate on 15/06/2016.

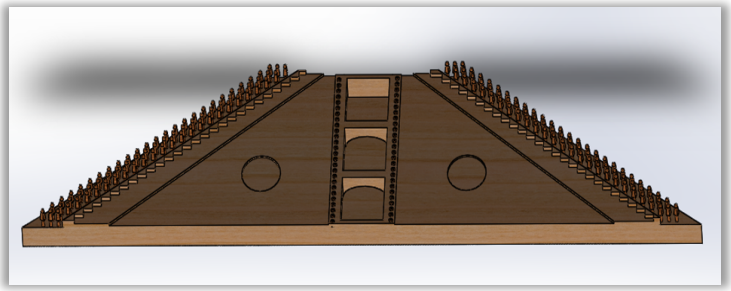

Photo 2. 3D drawing of the Unified Kanun instrument

The 3D drawing shown in Photo 2 differs from the first prototype. With a time span of thirteen years between the first prototype and the Unified Kanun, the instrument has been tested in every aspect organologically, measured, and redesigned in accordance with the possibilities of the developed techniques and the dynamic structure of the instrument. For this reason, there are changes in the 3D drawing shown here compared to the drawing in the patent document of the first prototype. The Unified Kanun was built based on this newly designed 3D model.

Photo 3. Final version of the Unified Kanun instrument

Photo 3 shows the designed and completed final form of the Unified Kanun.

Photo 4. Skeleton form of the Unified Kanun during the construction stage

Photo 4 shows the skeleton form of the Unified Kanun, where the pegboards of both kanuns are fixed to the upper and lower edges together with the internal braces.

Photo 5. Unified Kanun with the back cover attached

As seen in Photo 5, the internal braces are carved in such a way that sound can be transmitted into the sound chambers of both kanuns. This allows the sound to be distributed evenly from both instruments.

Photo 6. Close-up view of the Unified Kanun with the back cover attached

As seen in Photo 6, both kanuns are connected to each other through internal braces. In the construction of the Unified Kanun, two long longitudinal braces were added to these internal supports to increase structural strength.

Photo 7. Unified Kanun with the top boards attached and the tuning peg boards glued

In the Unified Kanun shown in Photo 7, there is a plywood panel covering the area where the skin will be stretched, creating a raised section. This part is designed to be more durable, as it is where the strings will be attached and the pegs will be seated.

Photo 8. Final state of the middle section of the Unified Kanun before drilling the pegs

As seen in Photo 8, the Unified Kanun is designed with three sound holes. It can also be designed with four sound holes, depending on preference. This variation changes according to the sound color the player wishes to achieve on the instrument.

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Photo 9. Close-up view of the pegs through which the strings pass in the Unified Kanun

The pegs shown in Photo 9 are made of fiber material, and holes have been drilled in them for the strings to pass through. These cylindrical pegs have a notch or an incomplete circular gap on the side facing the tuning peg area after the strings are inserted. The purpose of this feature is to allow the peg to be easily removed from its position, enabling it to be lifted and taken out of its slot without difficulty.

Photo 10. Glued and painted leather part of the Unified Kanun

In Photo 10, the leather of the Unified Kanun is shown after being glued and varnished. Following this stage, the positions of the pegs will be marked and drilled, the tuning peg holes will be opened, and the strings will be attached and tuned. Once the tuning of the kanun is fully stabilized, the installation of the levers (mandals) will begin.

Photo 11. Drilled area for the placement of plugs in the Unified Kanun

In Photo 11, the area where the plugs will be placed has been reinforced and elevated with a plywood section to ensure durability and structural strength.

Photo 12. The drilled area where the plugs will be placed in the Unified Kanun

In Photo 12, the area designated for the plugs has been reinforced and elevated with a plywood section for durability.

Photo 13. Close-up view of the right side of the Unified Kanun

In Photo 13, the close-up image of the right side of the kanun shows the state of the plug areas before drilling. Additionally, the painted and leather-covered Unified Kanun is visible.

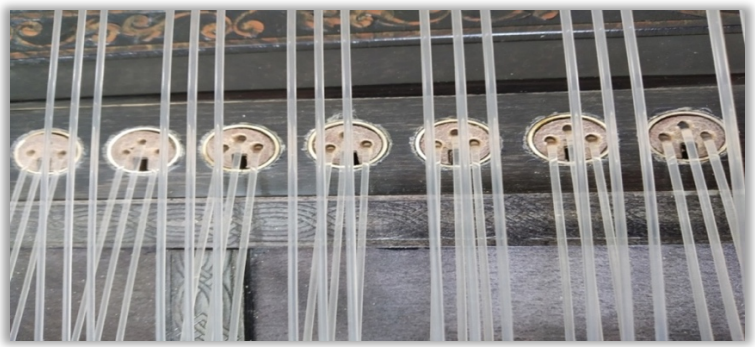

Photo 14. Strings attached to the plugs on the Unified Kanun

In Photo 14, the string connection plugs leading to the kanun on the left side are shown. To make the plug areas more durable, rings have been inserted into the plug holes. This application has created a more resistant area against the pulling force of the plugs.

Photo 15. Strings attached on both sides of the Unified Kanun

In Photo 15, the strings on the right and left sides of the kanun pass through each other at the same level as they cross the bridge. The bridge of the Unified Kanun is designed to be thicker than that of the traditional kanun. It is a bridge built to withstand the weight and pressure of the strings attached from both sides.

Photo 16. The pegs and strings attached on the right side of the Unified Kanun

In Photo 16, a close-up image of the pegs on the right side of the Unified Kanun is shown. In addition, the levers (mandals) have been installed, tuned, and the instrument has reached a playable condition.

Photo 17. The levers and strings attached on the left side of the Unified Kanun

In Photo 17, the levers on the left side of the kanun are shown installed using a six-lever system. This system is the same as the lever mechanism used in the traditional kanun instrument.

Photo 18. The levers and strings attached on the right side of the Unified Kanun

In Photo 18, the levers on the right side of the kanun are shown installed using a six-lever system. This system is the same as the lever mechanism used in the traditional kanun instrument.

Photo 19. Close-up view of the central part of both sides of the Unified Qanun

Photo 19 shows a close-up view of the final version of the Unified Qanun, constructed with three membranes and interconnected inner chambers. The produced Unified Qanun uses a pin system. Without using the pin system, end blocks can be placed on both sides of the central part, allowing the strings to exit from the back. In such a system, the inner chambers would remain more enclosed, making the instrument more suitable for use as an electro-acoustic system. Although the acoustic sound level would be relatively low, magnetic pickups placed on the bridges would allow the instrument to produce a sound close to an acoustic tone through the connected amplification system.

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Photo 20. Close-up of the Strings Intersecting Each Other in the Unified Qanun

In Photo 20, it can be seen that the strings of the qanun on the right and the strings of the qanun on the left pass through each other as they cross the bridge. This method of application differs from the first prototype. In the arrangement created in the first prototype, there was a 3 mm distance between the corresponding strings of the right and left qanuns. In the Unified Qanun, this distance was precisely calculated, and the strings of both qanuns were prepared at the same distance, running parallel to each other. As a result, the Hüseyni pitch on the right qanun and the Hüseyni pitch on the left qanun are aligned along the same axis.

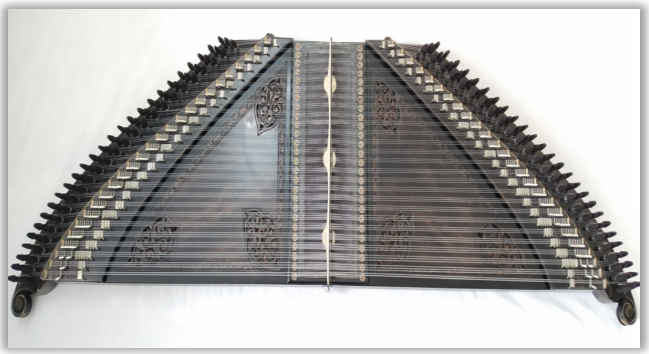

Photo 21. The Completed Form of the Unified Qanun

In Photo 21, it can be seen that the Unified Qanun has a significantly high volume level, meaning its sound intensity is quite strong. Elements such as the string attachment points, the evenly distributed sound, the use of the bridge, the shared bridges inside the soundbox, and the shortening of string lengths in the lower registers all contribute to an organological structure that differs from the traditional qanun.

Conclusion

This study introduces a remarkable innovation in the field of organology, both in Turkey and internationally. The "Unified Qanun," which represents an important example of the increasing number of national musical inventions since the 2000s, is an instrument created by combining two separate qanuns into a single body from an organological perspective. This innovation is of great significance as it enables the performer to change levers (mandals) in different octaves simultaneously, thereby expanding the traditional performance limits of the qanun.

The documentation of this instrument through the patent process and academic theses demonstrates that it is not merely an individual experiment but a contribution to the field of organology. The name "Unified Qanun" aligns with the naming tradition in Turkish organology (e.g., Yaylı Tanbur, Cümbüş, Birleşik Ney) and also corresponds to the "combined/unified" terminology used in the Sachs and Hornbostel classification system in Western organology. This shows that the naming of the instrument is based on both local and universal foundations.

The findings of this study indicate that the "Unified Qanun," with its adaptability to various musical genres—especially guitar and piano repertoires—can open new horizons in performance practice. With its polyphonic structure and technical advantages, this instrument offers a creative breakthrough in Turkish musical culture and makes a significant contribution to the development of organology. In conclusion, the "Unified Qanun" is not only an instrumental innovation but also an original model that can be evaluated within the context of musical performance and the theoretical framework of organology.

Biodata of Author

Lecturer, Dr. **Orçun Çalkap** was born in 1982 in Ereğli, Zonguldak. He completed his primary and secondary education in Ereğli. He began learning the qanun instrument on his own in 1999. In 2001, he took and passed the Turkish music entrance exam held by Müjdat Gezen Art Center. He studied in Istanbul for one year and had the opportunity to benefit from esteemed teachers such as Semahat Özdenses.He taught for five years in the Ereğli Municipality Turkish Music Ensemble and for four years in the Public Education Center Turkish Music Ensemble. He served as a contracted qanun performer for six years in the Turkish Music Ensemble of Bülent Ecevit University. Since 2002, he has had the opportunity to work on and reflect upon different techniques for the qanun. In 2016, he graduated from the Turkish Music Department of Sakarya University State Conservatory. In the same year, he started his master's degree at Sakarya University Institute of Social Sciences and completed it in 2019 in the field of Basic Sciences / Music Sciences. In 2020, he was admitted to the Proficiency in Art program at Ankara Music and Fine Arts University, Faculty of Performance. He is currently working as an Instructor in the Department of Performing Arts, Music Program at Hacı Bektaş Veli University Faculty of Fine Arts. **Institution:** Nevşehir Hacı Bektaş Veli University, Faculty of Fine Arts **Email:** orcuncalkap@nevsehir.edu.tr **ORCID:** 0000-0002-4264-7254
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