Cimbalom Composer’s Guide (Extended Techniques)

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This text is intended for working purposes and should serve those interested in composing pieces for the cimbalom, especially using extended techniques. It is a short version of the thesis *Extended Techniques in Cimbalom Playing (2026)*, which I wrote while completing my master's studies at the Department of Jazz of the Janáček Academy of Performing Arts in Brno, Czech Republic. The document describes individual classical and extended ways of playing, supplemented by examples from a YouTube video that I created for working purposes.

Have fun, and thank you for any activity that will ever be created for the cimbalom!:)

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1. Range

Gaggero (2024) states that three types of range are most commonly encountered on today's concert instruments:

- **Range E–e³ (E2–E6)**, or D–e³ (D2–E6) where the tone D♯ (D♯2) is absent, or C–e³ (C2–E6) where the tones D♯ (D♯2) and C♯ (C♯2) are absent: this range is characteristic of older instruments from the end of the 19th century coming from the workshop of József Schunda, or of their later successors (e.g. instruments by the Bohák brand). Although these instruments are still encountered in practice, present-day makers no longer offer this range as standard.
- **Range C–a³ (C2–A6):** currently the most commonly used range, and thus regarded as the standard type of instrument. It is also a stable range preferred by composers, orchestras, and educational institutions. An instrument of this range will also be discussed in the following chapters of this thesis.
- **Range A contra–a³ (A1–A6):** instruments with a five-octave range are still relatively few at present; nevertheless, both the number of such instruments and the frequency with which this range is used keep growing. Composers writing for this range must, however, keep in mind that a considerable number of performers and institutions have no access to such instruments. If necessary, *ossia* notation can be used, allowing a missing tone to be played in the corresponding higher octave when the instrument is unavailable.

1.1 Layout of the Tones

The arrangement of tones on the cimbalom may seem chaotic at first glance, but the construction of the instrument has its own logical justification. The placement of the strings is based primarily on their acoustic length: the long bass strings are situated in the lower part, strings of medium length in the middle part, and the shortest strings in the treble part. A standard instrument (see the range above) usually has 133 strings, stretched horizontally between two side sections of the body, the so-called heads. On the left head (from the player's point of view) the strings are anchored on hitch pins, while on the right head they are wound around left-hand-threaded tuning pins.

The strings in the lowest register (C2–F♯3) are copper-wound, similarly to the piano. These tones are arranged chromatically moving away from the player. The lowest tones consist of only one string, and with rising pitch the number of strings increases to as many as four strings per tone. A fundamental structural element is the bridges in the middle and upper registers, which divide the strings transversally into two tones and, in the highest register, into three. This principle is key both to the overall layout of the tonal scheme and to the tuning process itself.

According to Gaggero (2024), the range can be divided into four sections:

- **Middle central section:** tuned in intervals of a fifth (e.g. C4–G4, D4–A4, E4–B4, etc.) and displaying a clearly diatonic character. Historically, these instruments were constructed for the preferred tonal systems, in this particular case for the C major scale. For this reason, this section has remained more or less unchanged compared with the predecessors of today's cimbalom (such as the salterio, the pantaleon, etc.). The remaining tones completing the chromatic scale were subsequently placed in other parts of the instrument, often according to the available structural space, which explains the specific arrangement of tones across the whole range;
- **Middle section on the right:** extends the range downward to the tone G3 and at the same time contains the semitones necessary to complete the chromatic scale;
- **Upper section (treble):** this area extends the range from F5 up to A6. The strings here are divided by the bridges so that each group of strings is split into three different tones (e.g. F5–G5–D6, F♯5–A5–D♯6, etc.). Owing to the absence of a consistent order in the layout of individual tones, this section appears the most chaotic and, from the performer's point of view, represents the technically most demanding part of the instrument;
- **Lower section:** represents the lower half of the instrument's playing surface, and the strings here are laid out chromatically. In the bass section the strings are stretched at an angle (they cross each other), which in practice means that half of them can only be played in the right part of the instrument and the other half only in the left part. This construction produces two separate whole-tone scales, offset from each other by a semitone.

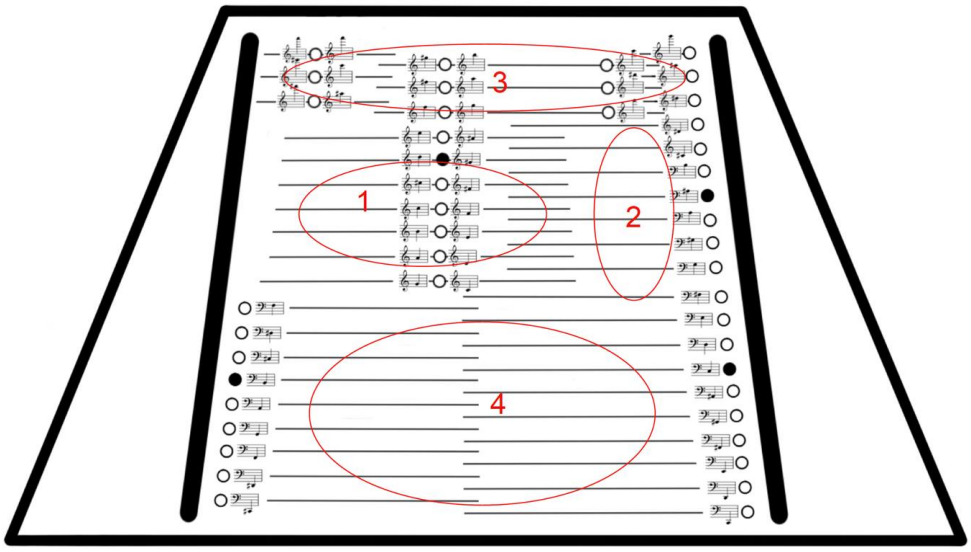


Figure 1: Sections of the instrument's range. Source: the author

The layout of tones on a standard concert instrument then looks as follows:



Figure 2: Layout of the cimbalom's tones with note names (American notation). Source: Zuzana Máchová (2024)

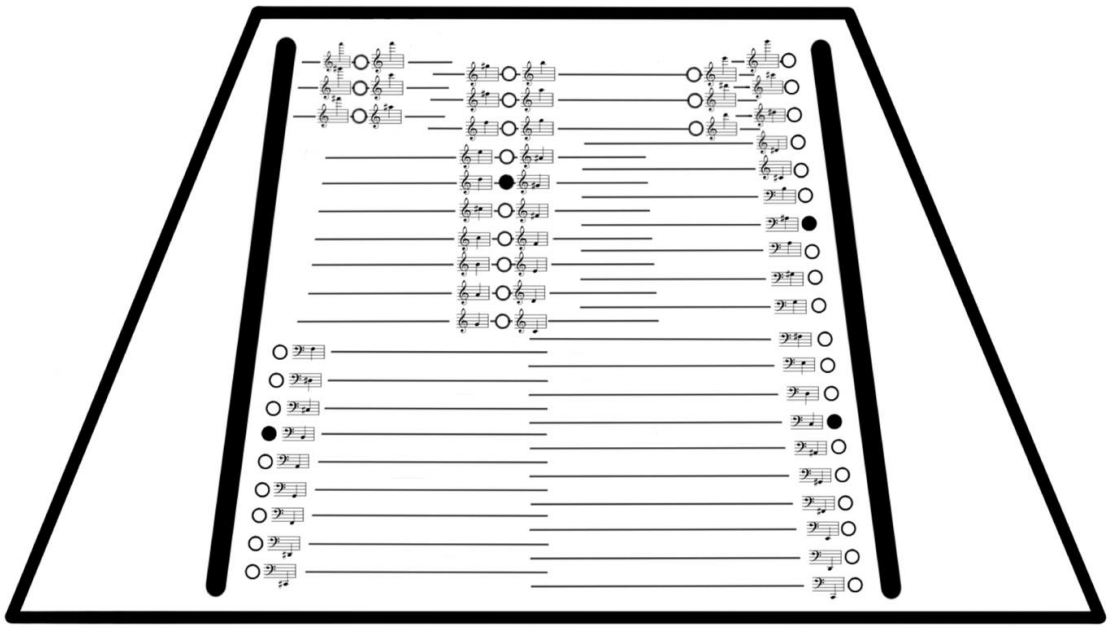


Figure 3: Layout of the cimbalom's tones with musical notation. Source: Zuzana Máchová (2024)

2. Mallets and Their Characteristics

2.1 Cimbalom Mallets

Cimbalom mallets intended for the standard (traditional) way of playing are handmade, which makes it possible to meet the specific requirements of each individual player. Walnut wood (from both the outer and inner part of the trunk) is most commonly used in their production, though other woods such as acacia or cherry are also frequently encountered. Alternative materials, such as plastic or carbon, are now also beginning to gain ground in mallet manufacture. Depending on the performer's specific preferences, parameters such as the overall length of the mallet, the diameter of the wood, the hardness of the material, or the angle of curvature of the mallet tip are adjusted accordingly.[17]

Just as the types of wood differ, so too do the materials used to wrap the tips of the mallets. Cotton wool fixed with cotton thread is most commonly used. From personal practice, wool made of 100% viscose proves most suitable for this purpose, as its properties make it possible to achieve the ideal hardness and elasticity of the wrapped section.

The winding technique itself is a widely discussed topic among professionals. Players are required to acquire this skill during their training and to prepare their own mallets, a process

comparable to reed-making among oboists. Players are guided toward mastering this skill from the very beginning of their studies at primary art schools.

Mallets are most commonly wound to three degrees of hardness:

- **Soft mallets** (marked SM in notated scores), prepared using thicker, denser layers of wool with less tightening of the winding. This combination produces a softer, gentler sound with a relatively large rebound from the string.
- **Medium mallets** (marked MM in notated scores), using relatively thin layers of wool wound more tightly. A small amount of water is often used during production to dampen the wool on the mallet, producing a medium-hard sound.
- **Hard mallets** (marked HM in notated scores), produced using shorter, less dense layers of wool. The wool is wound very tightly and it is also advisable to dampen it with water. This combination produces a hard-wound mallet with a smaller degree of rebound from the string. Some cimbalom players occasionally also use a mixture of water and glue when winding hard mallets.

The weight of the mallet is also very important. Most of the weight lies in the handle, which is the opposite of mallets used for percussion instruments. The end of the mallet (the mallet tip) is used to adjust the final weight, which can be influenced in several ways. This depends above all on the type of winding and the amount and density of wool used. The winding method affects both the weight of the mallet and its rebound, which, however, changes as the mallet wears. The tip of the mallet can also be weighted using adhesive tape, which can be wound onto the wood before the mallet is wrapped in wool. Both the tape and the winding itself must be handled carefully, since every extra gram is noticeable in the strike. It is not unusual for a player, after winding a pair of mallets, to find that they are too light or too hard, or that the two mallets of a pair differ noticeably in weight or sound. In such a case it is better to unwind the mallets and repeat the whole process.

Besides wool, a vast range of other materials can also be used to wrap mallets. This topic will be addressed in the following chapters of the thesis.



Figure 6: A cimbalom mallet wound with wool and cotton thread. Source: the author

2.1.1 Standard Cimbalom Mallets and Their Grip

Standard cimbalom mallets are the most typical and widespread type of mallet. They differ slightly between countries, primarily in the angle of the bend, or in the length or shape of the palm-side handle. The grip and the playing technique itself likewise differ between schools, chiefly in the position of the fingers on the mallet and the angle of rotation of the wrist. All schools have in common, however, that the mallet is held between the index and middle fingers and secured with the thumb. In his cimbalom method, Repa recommends the following grip: the mallet is held between the first and second joints of the second and third fingers, while the fourth finger from below and the thumb from above also press against the mallet, which makes the strokes steadier and firmer.[18]

In his cimbalom method (1982), Vojtěch Brada distinguishes three different ways of gripping the mallets according to hand position:

a) the palms face each other in parallel, with the mallets held between the first joints of the index and middle fingers and the end of the handle controlled by the thumb;

b) the palms face each other at an acute angle, with the knuckles of the index fingers at their highest point in this position. The mallets are held between the first joints of the index and middle fingers, with the base of the handle resting against the base of the thumb;

c) the palms are turned parallel to the plane of the strings, with the wrist moving in the same direction as the mallets, i.e. perpendicular to the strings. In this position the mallets are held in a similar way to the previous cases, except that the end of the handle rests against the palm. According to Brada, this stroke is ideal, since the movement corresponds to the structure of the hand and the tensioning of the muscles. At the same time, this principle occurs most frequently when playing other musical instruments or performing everyday human actions, making it the most natural for the hand.[19]

2.1.3 Mallets with a Wooden Tip

Among the most widely used mallets without a wool winding are mallets with a wooden tip. The characteristic sound of a wooden mallet typically has a sharp color. At the onset of a tone played with a wooden mallet, a distinctly recognizable wooden strike can be heard.[23] This type of mallet is commonly used in many classical compositions and has been used, for example, by Kurtág, Stravinsky, or Eötvös.[24]



Figure 8: A cimbalom mallet with a wooden tip. Source: the author

2.1.4 Mallets with a Metal Tip

Mallets with a metal tip are used relatively rarely. Wire is most commonly used to produce these mallets, wound around the tip of the mallet. The characteristic sound, rich in higher harmonics, is strikingly sharp, with a hard, typically metallic strike at the onset of the tone. When played piano, it can resemble the sound of a baroque psaltery.[25]

Composers fairly often prescribe them in orchestral compositions, where the cimbalom, thanks to its sharp metallic sound, projects well among the other instruments. The use of a metal mallet appears, for example, in the second movement of the piece *Stele* (G. Kurtág) or in the piece *Gramigna* (S. Gervasoni).

A mallet with a metal tip can also be used to create a particular type of tone color by rubbing it gently over the strings with small circular motions (see section 3.1.6).

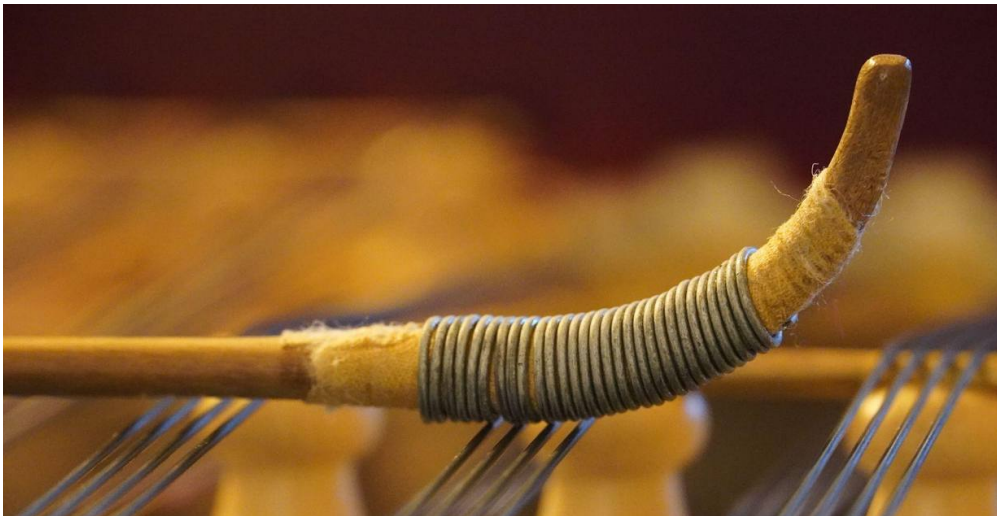


Figure 9: A cimbalom mallet with a metal tip. Source: the author

2.1.5 Mallets with a Leather Tip

The mallet with a leather tip is historically among the oldest, and its use goes hand in hand with the very development of the cimbalom and its predecessors. Already in the earliest historical depictions of the psaltery, it can be seen that fingers, and later also mallets wrapped in leather, were used for playing. This follows the logic of the time, when leather was very commonly available, and it is thus no wonder that it represented one of the first materials mallet-makers reached for. Today, mallets wrapped in leather are still commonly used, for instance, for playing the hackbrett.[26]

In the context of playing the large Hungarian-type concert cimbalom today, leather on the mallet is a popular material especially for the interpretation of parts in which the cimbalom must project with its strike in a loud environment, such as symphony orchestras, chamber orchestras, and so on. In such cases, a clean, penetrating, and clear tone is often required — one that should nevertheless not be as sharp as that of mallets with a metal or wooden tip, so that the cimbalom can still fulfill the role of a percussive, melodic-harmonic instrument. Players therefore often choose either very hard wool-wound mallets or mallets with a leather tip, which best suit this specification.



Figure 10: A cimbalom mallet with a leather tip. Source: Daniel Skála's archive

Just as with wool, different materials can also be chosen for the leather, thereby influencing the hardness of the mallet. For example, Gervasoni, in his composition for solo cimbalom, uses the designations "hard leather beaters" and "soft leather beaters."[27]

2.1.6 Mallets with a Felt Tip

Felt mallets are mostly used as very soft mallets (soft mallets). Their softness can be influenced by the thickness and material of the felt, and they are ideally suited for cases where a soft, velvety sound without pronounced higher harmonics is required.[28]

Recording 1: A demonstration of playing with mallets with a wooden and a metal tip. Source: the author

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Notes: 17. WEBSTER, Joshua. *Creating and Performing New Australian Works on the Hungarian Concert Cimbalom*. Master's thesis. Perth, Australia: Edith Cowan University, 2013. — 18. REPA, František. *Škola hry na cimbal*. Bratislava: Osvetový ústav v Bratislave, 1971. — 19. BRADA, Vojtěch. *Škola hry na cimbale*. MK SSR č. 7101/81-31. Bratislava: Osvetový ústav v Bratislave, 1982. — 20. MAGYAR RADIO ONLINE. *Rácz Aladár*. Online. [cit. 2026-01-27]. —

21. GAGGERO, Luigi. *The Cimbalom: Reference Guide for Performers and Composers*. 2024. ISBN 979-8346464822. — 22. MOORE, Richard Lee. *The Hungarian Cimbalom: History and Evolution*. PhD dissertation. Ontario, Canada: York University Toronto, 2018. — 23. WEBSTER, Joshua, op. cit. — 24. GAGGERO, Luigi, op. cit. — 25. GAGGERO, Luigi, op. cit. — 26. HERENCSÁR, Viktória. *The World of the Hammered Dulcimer – Svet cimbalu*. Morning Art Record, 2021. ISBN 978-615-01-0659-5. — 27. GERVASONI, Stefano. *Gramigna*. Score. Edizioni Suvini Zerboni, Milano, 2015. — 28. GAGGERO, Luigi, op. cit.

2.2 Mallets for Percussion Instruments

When considering how and with what means to enrich cimbalom playing, this line of thought very quickly leads to percussion instruments. Since there is a considerable variety of mallets used for playing percussion instruments, only some of them will be presented below. Mallets intended for playing many percussion instruments (e.g. marimba, xylophone, timpani, etc.) can be used to play both on the strings and on the soundboard or body of the instrument. The heads of these mallets are made, for example, of yarn, wool, felt, plastic, rubber, leather, metal, or combinations of these materials.[29]

Soft mallets with a large head can be used to play in the bass register and to create a deep, indeterminate, booming timbre. Mallets with a large head are likewise suitable for producing a percussive, resonant sound by striking the frame of the instrument, the pedal dampers, or the soundboard. Conversely, smaller and harder heads are suitable for a precise, defined tone, as well as for percussive sounds on the body of the instrument.[30] Techniques for striking the string with various mallets are also described by Sára Medková in her dissertation. Since piano and cimbalom strings are very similar (differing only in range and length), the philosophy of pianists can certainly be applied to cimbalom playing: this technique offers very broad possibilities for the use of different objects, and depends greatly on the composer's ability to describe in detail both their intention and the desired resulting sound. When using mallets intended for percussion, essentially any of them can be used, provided that the general principles known from the field of percussion are observed — chiefly, maintaining a proportionate relationship between the size, hardness, and weight of the mallet head and the object being set in vibration. Specifically, with piano strings, the lighter and harder the mallet used, the higher the harmonics that will sound. This applies, for instance, to playing on bass strings, where harmonics tend to sound rather than the fundamental tone. If a booming bass sound is desired, then a larger, softer, and heavier mallet is needed, and so on. In general terms, the same holds true when striking the strings with any other object. If one wishes to filter the sound spectrum in a particular way, a (softer) mallet can be used as a damper after striking the string, provided it is not lifted immediately after the strike.[31]

2.2.1 Marimba and Vibraphone Mallets

Mallets wound with yarn, similarly to soft cimbalom mallets, produce a gentle strike and a slower onset of a full, soft, and dark sound. In the upper registers of the instrument and at higher

dynamics, however, the attack sound predominates over the specific tone color, which becomes more muted and shallow.[32]

Playing with marimba or vibraphone mallets becomes especially interesting when using four mallets, which allows four-note chords to be played. Given the arrangement of the strings on the cimbalom, however, this technique is far from as agile as it is when playing the marimba or vibraphone.

2.2.2 Timpani Mallets

Timpani mallets are suitable for playing in the lower and middle registers of the instrument. In the upper positions, as with marimba mallets, the sound of the mallet's attack predominates over the tone itself. These mallets are ideal for very soft and deep (dolce) sounds. When playing without the pedal, it is possible to create an effect resembling double-bass pizzicato playing (walking bass). A potential drawback is that, at very strong dynamics, the resonance of the tone can cause the strings to vibrate strongly, producing an unwanted rattling. The use of timpani mallets occurs, for example, in the section *À la manière du jazz* from Solbiati's piece for solo cimbalom, *Quaderno d'immagini*.[33]

2.2.3 Xylophone Mallets

Mallets with a round tip made of wood or plastic have a very strong and bright strike and sound. Rubber mallets, by contrast, have a softer strike but a full sustain. The natural elasticity of the rubber makes it possible to work with the mallet's rebound and thus to use the technique of playing multiple tones with a single stroke (jeté / multiple bounce).[34]

2.2.4 Drum Mallets

After the strike, these mallets produce a very bright and loud sound with a typically "woody" attack. As in the previous case, it is possible to work with the rebound technique, thereby multiplying strikes from a single stroke. These mallets also allow the press-roll technique.[35] Since cimbalom mallets do not allow this technique, it becomes a fairly rare and interesting option for cimbalom players. Playing the cimbalom with drum mallets is used, for example, in Gervasoni's composition *Gramigna*.

2.2.5 Brushes

Brushes can be used mainly to create sound effects such as sweeping across the bass strings horizontally along their length, or vertically across the lower register of the instrument, producing a glissando effect combined with a rustling, metallic sound. A brush can also be "rustled" or "swept" across the wooden parts of the instrument, for example across the upper soundboard, creating a fairly strong percussive noise. In such cases, however, it is preferable to use brushes with silicone bristles so as not to damage the instrument's finish. Brushes have been used in

piano playing, for example, in George Crumb's composition *Metamorphoses (Book I)*, specifically in the third movement, *Crows over the Wheat Field (after Vincent van Gogh)*.[36]



Recording 2: A demonstration of playing with percussion mallets. Source: the author

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3. Extended Techniques for Playing the Cimbalom

To properly define extended techniques for playing the cimbalom, we must first delineate those that are commonly used — that is, standardized. The question is whether it is even possible to draw an exact boundary between individual techniques, or to classify them with certainty as either standardized or extended. It is a natural part of the development of both the instrument and its playing technique that some ways of playing, formerly considered extended, have gradually become integrated into common practice, thereby losing, to some degree, their specific character. Glissando can be cited as an example: although this technique is in a certain sense non-standard, it has, over the course of the literature's development, become so frequent that one could today argue over the extent to which it is still an extended technique rather than a conventional one.

The standard technique found in the literature as traditional is playing with two mallets (most often wool-wound ones), i.e. *ordinario*. Gaggero describes *ordinario* playing as a strike roughly 4–5 cm from the bridge, which can be considered the standard distance. The sound is well balanced and rich in higher harmonics. This type of stroke is a fundamental element taught across all levels of the school system — from primary art schools through conservatories to universities. Common techniques within *ordinario* playing also include tremolo, ribattuto, and

others. Since these are categorized rather as classical approaches, they will not be examined in detail in the following chapters.

3.1 Playing with Two Mallets

Playing with two mallets is considered the basic way of playing the cimbalom and is used across all musical genres. Although contemporary music occasionally departs from this conventional approach, in folk music this established way of playing is represented almost without exception. It is hard to imagine that performers in cimbalom folk ensembles would turn to a different mode of interpretation in the future. The following text delineates techniques that differ from classical *ordinario* playing and can therefore be defined as extended techniques.

Among the techniques that can be perceived as lying on the boundary between *ordinario* playing and extended techniques is playing with a change in the striking position on the string. Terminology for these positions is most often borrowed, in the case of the cimbalom, from string terminology — we speak of playing *al ponticello*, i.e. toward the bridge, and *sul tasto*, i.e. playing over the fingerboard. It should be noted, however, that this terminology is not yet fully unified within current cimbalom methodology, and we must be aware of this. Daniel Skála, for example, favors in his works and compositions the more descriptive English designations that define the position relative to the bridge — "near to the bridge" and "far from the bridge."

In primary art school instruction, pupils are systematically guided to find the ideal position on the string for *ordinario* playing. A strike too close to the bridge, or too far from it, is in this context regarded as a flaw, and teachers tend to correct it in their pupils. In advanced interpretation of 20th- and 21st-century compositions, however, these techniques, similarly to string instruments, are widely used as a legitimate means of enriching the instrument's tonal palette. Composers such as Igor Stravinsky or György Kurtág regularly incorporated them into their works.

3.1.1 Al Ponticello

If the strike is brought closer to the bridge (or to the nut), the *al ponticello* technique is achieved. This produces a sharper, metallic sound with a pronounced percussive attack, in which the fundamental tone is suppressed while the harmonic (overtone) partials are, conversely, very strongly emphasized.

Notation example:

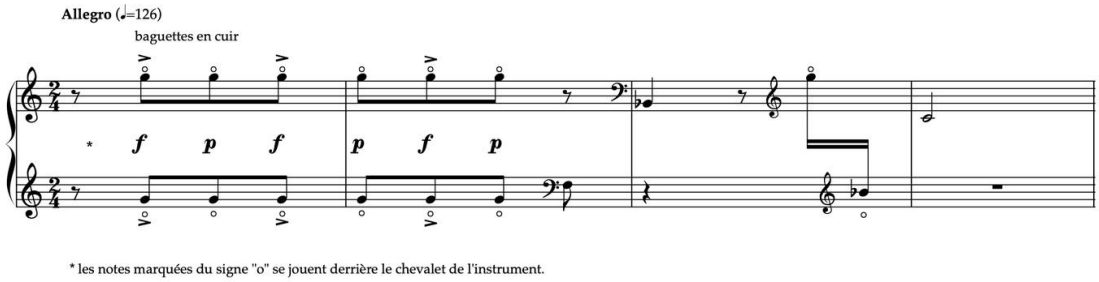


Figure 11: Notation example of al ponticello playing in the composition Renard (I. Stravinsky). Source: The Cimbalom (L. Gaggero)

3.1.2 Sul Tasto

Similarly to string instruments, the *sul tasto* technique can be used when playing the cimbalom — that is, a strike at a greater distance from the bridge than the *ordinario* position. This produces a soft, almost velvety sound in which the fundamental tone prevails over the harmonic partials.

Recording 3: A demonstration of al ponticello and sul tasto playing. Source: the author

3.1.3 Playing Multiple Tones with One Mallet

The arrangement of the cimbalom's strings makes it possible to strike two adjacent strings simultaneously with a single mallet. This way of playing was already used in compositions by Igor Stravinsky and Béla Bartók.[37] Playing multiple tones with one mallet is technically rather demanding and carries a considerable risk that the tones will fail to sound, or will sound in an uneven balance, especially at low dynamics.

In his book, Gaggero mentions that playing multiple tones with one mallet can be approached in essentially two ways:

a) using the length of the mallet tip — by striking the space between two horizontally adjacent strings, both tones can be set in motion simultaneously. This technique requires absolutely precise aiming of the strike, which represents a demanding discipline even for an experienced player.
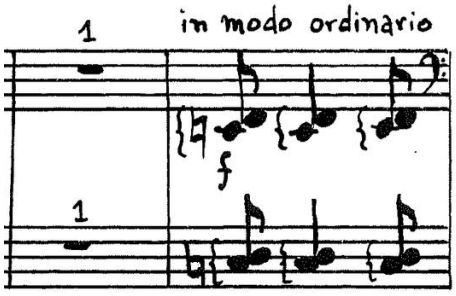


Figure 12: Notation example of a single-mallet strike using the length of the tip, in the composition Rhapsody No. 1 (B. Bartók). Source: Rhapsody No. 1, cimbalom part (B. Bartók)

b) using the point where the strings cross — the very construction of the cimbalom and the horizontal routing of the strings at a certain incline make it possible to use precisely the point where strings meet and cross in opposite directions. A single strike can thus hit two adjacent strings at once. Since the striking surface is larger in this case than in the previous one, this technique is not as demanding, which contributes to its popularity. Because the point of impact is farther from the bridge, this also results, in terms of sound, in a combination of the double-stop with the *sul tasto* technique.



Figure 13: One of the points where the cimbalom's strings meet, creating space for a single-mallet strike on two strings at once. Source: the author

This technique can be found in a fairly large body of original cimbalom literature, since this way of playing is used more often than the previous variant. It appears, for example, in Béla Bartók's *Rhapsody No. 1*, or in compositions by Ľudovít Daniel and Igor Iachimciuc.
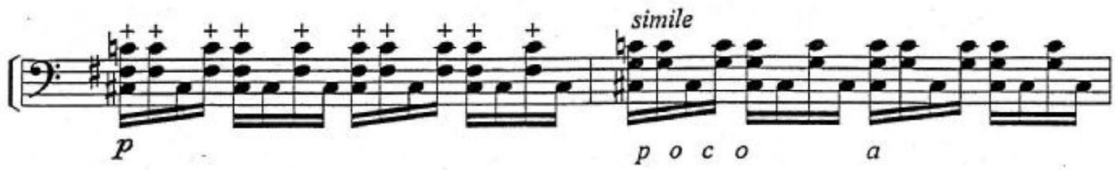


Figure 14: Notation example of a single-mallet strike on two adjacent strings in the composition Suitâ concertantâ No. 1 (I. Iachimciuc). Source: Suitâ concertantâ No. 1 (I. Iachimciuc)

To complete the overview of possibilities for striking two strings simultaneously with one mallet, let us look at the work of Joshua Webster (2013), who lists 43 specific points where strings meet and where two-string single-mallet playing is possible:
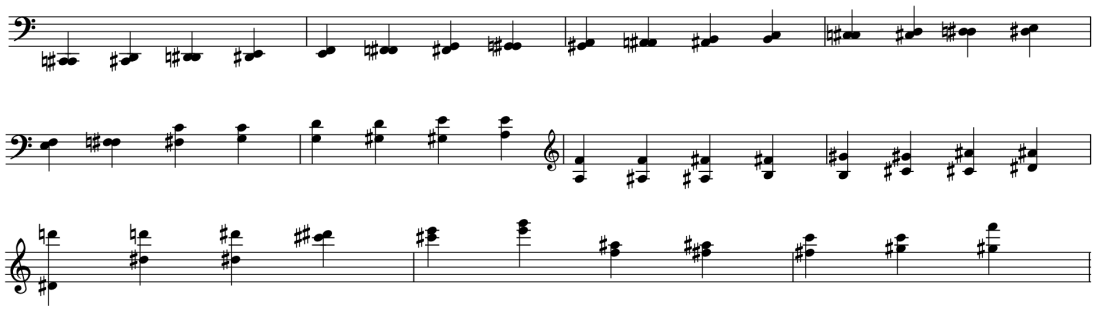


Figure 15: All possibilities for playing two simultaneous tones with one mallet on an instrument of standard range. Source: Creating and Performing New Australian Works on the Hungarian Concert Cimbalom (J. Webster)

Recording 4: A demonstration of playing multiple tones with one mallet. Source: the author

3.1.4 Press Roll

Rolling with mallets (buzz roll or press roll) is originally a drumming technique that is, under certain circumstances, adaptable to the cimbalom as well. This technique can only be achieved using drum mallets, xylophone mallets, or similarly hard mallets.

Gary Cook describes the rolling technique in his book *Teaching Percussion* (2019) as follows: this type of roll is created by alternating the right and left hand, with each mallet stroke on the drumhead triggering a series of uncontrolled rebounds (multiple bounce stroke); the goal is to achieve such a density of rebounds that the individual strikes merge into one uninterrupted, smooth sound resembling tearing fabric or buzzing.[38]

Rolling with wooden mallets can be used on the cimbalom in a similar way. However, the rebound of a metal string has an entirely different physical character than the rebound of a drumhead. A certain equivalent of this technique can be seen in the classical tremolo — that is, the smooth alternation of individual strikes between both hands, which can be achieved both with ordinary cimbalom mallets and with drum mallets.



Recording 5: A demonstration of the roll technique. Source: the author

3.1.5 Multiple Bounce (Single Buzz Stroke)

As with the rolling technique, the principle of multiple bounce can also be used when playing with drum mallets. For this technique as well, terminology is borrowed from percussion literature. Multiple bounce can be defined as follows: while single and double strokes are fully controlled by the hands, individual pressed strokes (single buzz strokes) and rolls (buzz rolls) can only be partially controlled directly. The player actively executes the first stroke with each hand, and the subsequent strokes arise through the rebound of the mallet against the instrument. This pressed stroke consists of three or more rebounds and may begin with or without an accent. The number of strokes is determined by the length of time the wrist remains in the lowered position during the movement. The speed of the pulsation is then controlled by the fingers — depending on individual playing technique, this involves the thumb and/or index finger, or possibly the middle finger.[39]

This technique makes it possible, for example, to move fluidly from rolling into multiple bounce and back, a device used by Luca Francesconi in his composition for solo cimbalom and ensemble, *Kubrick's Bone*.

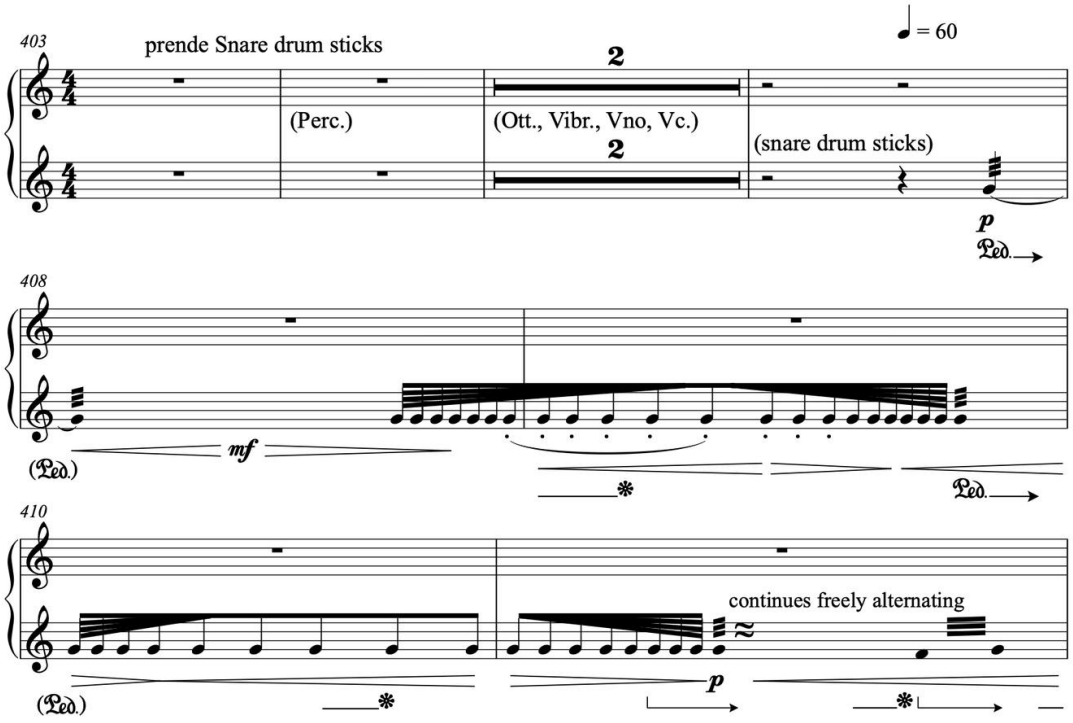


Figure 16: Example of the use of rolling and multiple bounce in the composition Kubrick's Bone (L. Francesconi). Source: cimbalom part of Kubrick's Bone (L. Francesconi)

In the example of Luca Francesconi's composition, one can follow the technique of a smooth transition from rolling, through controlled multiple bounces, down to individual strikes, and back again. The roll is in this case notated in the score as a classical tremolo; however, the fact that it is in fact a press-roll technique can be read in the composer's own performance notes.

Further examples of the use of controlled multiple bounce can be found in the work of Stefano Gervasoni. Specifically, in the composition *Gramigna*, the composer precisely prescribes the exact number of bounces to be sounded, including accents and dynamic markings.

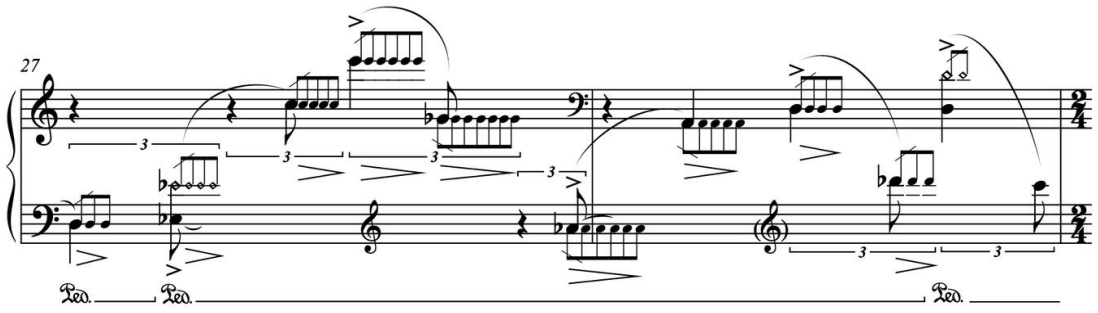


Figure 17: Example of the use of multiple bounce in the composition Gramigna (S. Gervasoni). Source: cimbalom part of Gramigna (S. Gervasoni)

Another example is a composition for cimbalom and soprano by the Italian composer Alessandro Solbiati entitled *Otto canti*, in which the composer uses combinations of rolling or tremolo together with multiple bounce and individual strikes:
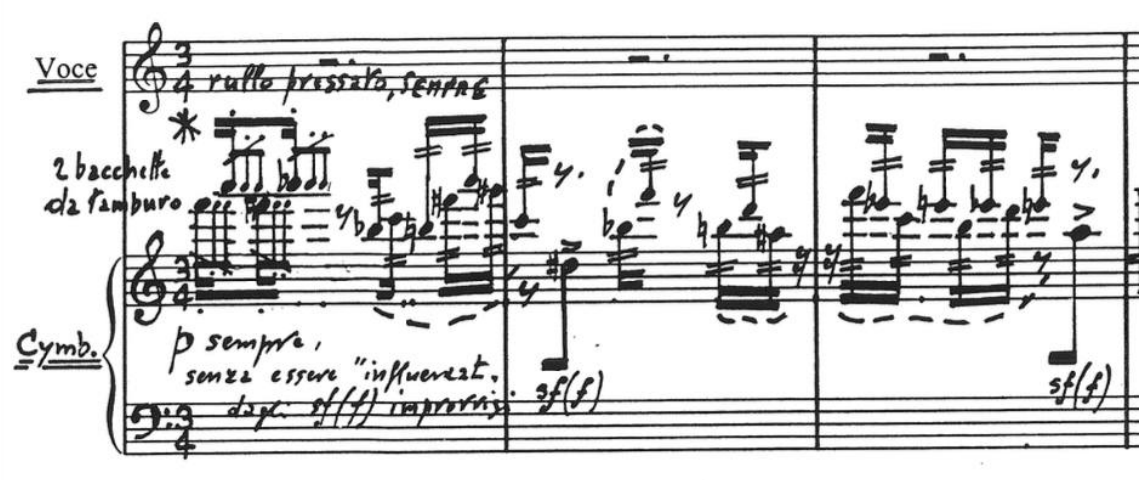


Figure 18: Example of the use of a combination of multiple bounce, roll, and individual strike in the composition Otto canti (A. Solbiati). Source: score of Otto canti (A. Solbiati)

Recording 6: A demonstration of the multiple bounce technique. Source: the author

3.1.6 Rubbing the Mallet Against the Strings

When rubbing (*spazzolare*) with a classical wool-wound cimbalom mallet, almost no sound effect is achieved. For this technique, coarser materials are needed, ideally a metal mallet tip (see section 2.1.4). By rubbing against the strings, a fine, rustling to crackling sound can be achieved.[40]

A different sound is achieved when rubbing the mallet along the bass strings. The texture of the wire on the mallet's striking surface, together with the textured surface of the wound string, creates a specific effect. In addition to the rattling sound, moving the mallet closer to the bridge and back also produces a continuously changing pitch.

The technique of rubbing with a metal mallet tip is used, for example, in Gervasoni's composition *Pas perdu*, where the rubbing of the mallet is indicated by a rotating arrow symbol.

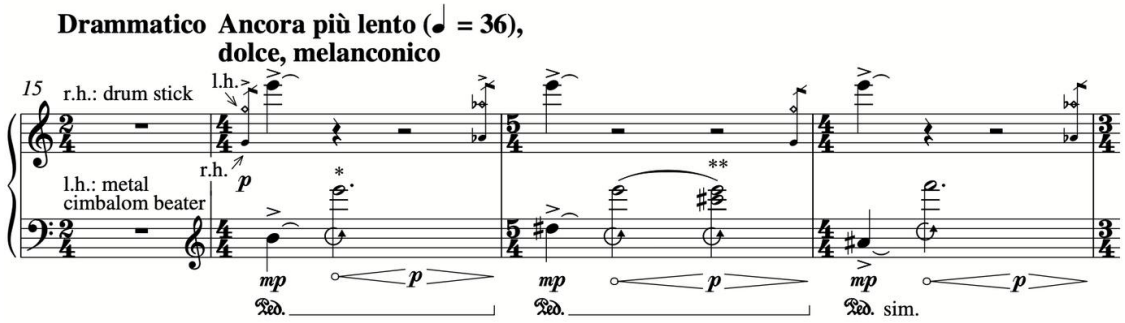


Figure 19: Example of the use of rubbing with a metal-tipped mallet in the composition Pas perdu (S. Gervasoni). Source: cimbalom part of Pas Perdu (S. Gervasoni)

Recording 7: A demonstration of the technique of rubbing the mallet against the strings. Source: the author

3.1.7 Combining Mallets with Tips of Different Materials

This topic will be addressed in more detail in the following chapter (3.2 Techniques of Playing with Multiple Mallets). It is fairly common to switch between different types of mallets, both before and during a piece. Less common, however, is the combination in which the player holds a mallet of a different material in each hand. As an example, consider a composition I wrote for first-level pupils at a primary art school. Here the melody is played with a metal-tipped mallet, accompanied by a second voice using a classical wool-wound mallet.
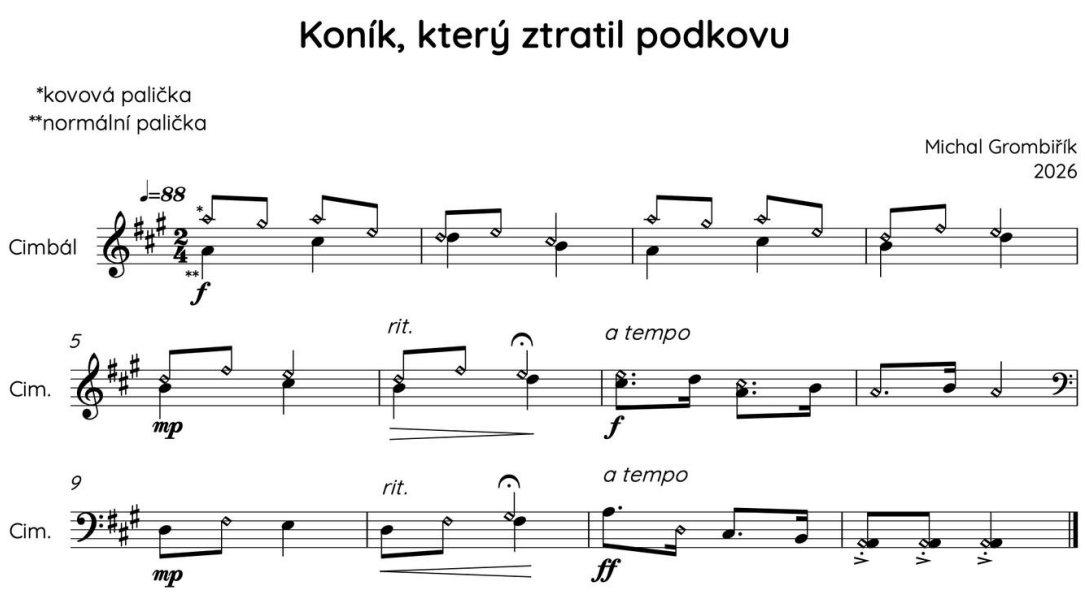


Figure 20: Example of the use of mallets of different materials in the composition Koník, který ztratil podkovu [The Little Horse That Lost Its Horseshoe] (M. Grombiřík). Source: the author

3.1.8 Cimbshot

The term "cimbshot" was first used by Joshua Webster (2013) in his dissertation *Creating and Performing New Australian Works on the Hungarian Concert Cimbalom*. This technique is analogous to the rimshot on a snare drum or the marimshot on a marimba. The essence of the cimbshot lies in the player setting a string in motion with the tip of the mallet while simultaneously striking the frame or bridge of the instrument with the shaft or palm-side part of the mallet, thereby achieving an additional percussive effect. The principle is very similar to a rim strike on percussion instruments. On the cimbalom, this represents a specific use of the instrument's construction, in which the edge of the instrument or the bridge serves as a percussive element complementing the sounding tone of the string.[41]

Recording 8: A demonstration of the "cimbshot" technique. Source: the author

Notes: 37. GAGGERO, Luigi. *The Cimbalom: Reference Guide for Performers and Composers*. 2024. ISBN 979-8346464822. — 38. COOK, Gary. *Teaching Percussion: With Videos*. Enhanced 3rd ed. Australia: Cengage, 2019. ISBN 978-133-7560-719. — 39. DIERSTEIN, Christian; ROTH, Michel; RULAND, Jens. *The Techniques of Percussion Playing: Mallets, Implements and Applications*. Bärenreiter-Verlag, 2018. ISBN 978-3-7618-7064-8. — 40. GAGGERO, Luigi, op. cit. — 41. WEBSTER, Joshua, op. cit.

3.2 Playing with Multiple Mallets

After the turn of the millennium, notated scores began to appear for the first time in which composers require the performer to play with multiple mallets. This technique is not yet strongly rooted in cimbalom practice, nor in cimbalom teaching curricula. Nevertheless, it has enjoyed considerably more attention in recent years than before. I addressed the topic of multi-mallet playing in fair detail already in my bachelor's thesis *Adaptace jazzového doprovodu na cimbál* [Adapting Jazz Accompaniment for the Cimbalom] (2024). In the following chapters, I will therefore build on my earlier research and supplement it with insights gained over the past two years.

3.2.1 Playing with Four Mallets

In his book (2024), Gaggero states that the four-mallet technique, besides its considerable advantages, also brings a number of disadvantages. These include, in particular, unevenness of strikes, reduced control over tone quality, awkwardness in handling intervals, and a general complication of phrasing. Nevertheless, this technique makes it possible to exploit many interesting aspects that cannot be achieved when playing with two mallets.

There are several ways of holding and manipulating four mallets in the hands. When using classical cimbalom mallets, however, one runs into the limited range of motion within the palm (toward and away from each other). Traditional cimbalom mallets thus allow only a limited span of intervals, which can be quite restrictive when playing.

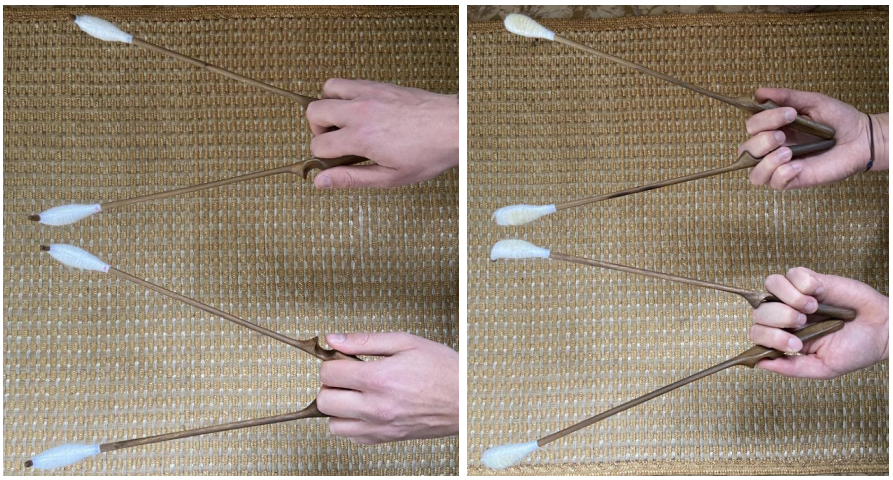


Figure 21: A possible grip for four mallets. Source: the author

The technical possibilities of four-mallet playing include all single- and double-stroke techniques. Each of these can be executed with any of the four mallets (independently of the other mallet in the same hand) using a combination of forearm rotation and wrist strokes. If the mallets are numbered according to the standard percussion system, the following scheme is obtained: outer left = 1, inner left = 2, inner right = 3, and outer right = 4.[42]

A proven approach from personal practice is to use the rotational stroke for mallets 1 and 4, combined with the wrist stroke for the inner mallets 2 and 3. It should be noted, however, that the volume and speed of double strokes are considerably limited compared to the two-mallet technique.

Furthermore, both mallets in one hand can strike the instrument simultaneously, with different dynamics achievable for each if needed. In addition, it is possible to perform very fast sequences, and even tremolos with three or four mallets in all mathematically possible combinations (e.g. 1–2–3–4, 1–2–4–3, or 3–2–1, etc.).

If we look at the matter from the perspective of improvisation, we encounter limits arising from the layout of the instrument. The left side of the cimbalom (the space for the left hand) is in fact entirely different from the right side. The arrangement of tones on the left side of the instrument offers far fewer possibilities than on the right. Playing with two mallets in the left hand therefore offers considerably fewer tonal combinations. One solution is to favor double-stops predominantly within the one-line octave, where the left mallet in the left hand plays tones in the range C♯ to F and g to c², while the right mallet of the left hand plays tones in the range C to E ♭ ¹ and c¹ to b¹. A combination of three voices, with occasional use of a fourth, therefore appears optimal.[43]

As Gaggero (2024) states, the most interesting possibility for him, from an interpretive standpoint, is to hold mallets of different materials in each hand. It is precisely in this way that the full coloristic potential of the cimbalom can be exploited. In the composition *Vier Lieder nach Th. Bernhard* for soprano, violin, and cimbalom, the composer Luca Antignani uses four mallets in combination: No. 1 — sharp (leather tip), No. 2 — soft (wool tip), No. 3 — soft, and No. 4 — sharp. Notes with stems pointing upward are played with the soft mallet in the right hand, while notes with stems pointing downward are played with the sharp mallet in the left hand:
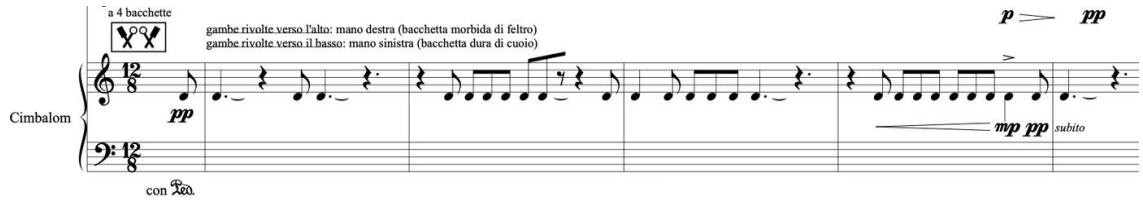


Figure 22: Example of four-mallet playing with different materials in the composition Vier Lieder nach Th. Bernhard (L. Antignani). Source: score of Vier Lieder nach Th. Bernhard (L. Antignani)

Another example is the composition for solo cimbalom *Quaderno d'immagini*, in which Solbiati uses two mallets held in the right hand (one wool-wound, the other with a leather tip), while leaving the left hand free to create further tone colors. This includes techniques such as preparing harmonics or tapping directly on the strings with the fingers.
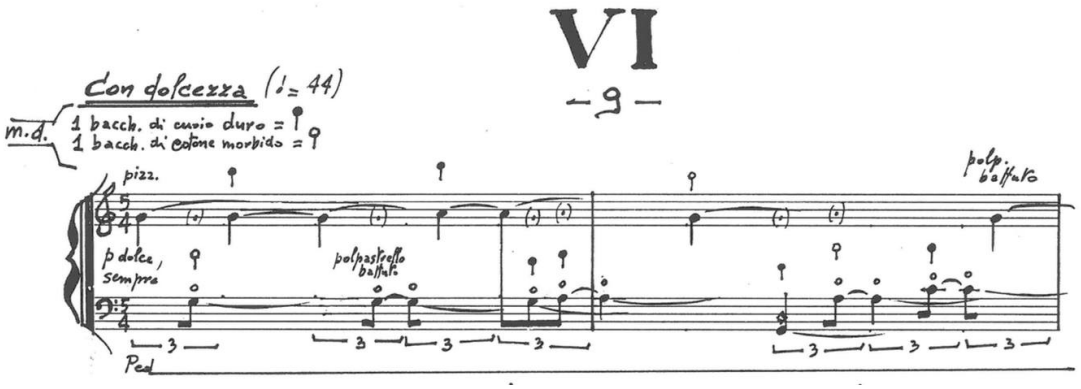


Figure 23: Example of two-mallet playing with different materials in one hand, in the fourth movement of the composition Quaderno d'immagini (A. Solbiati). Source: cimbalom part of Quaderno d'immagini (A. Solbiati)

Another variant is the use of four drum mallets, or a combination of different mallet types, such as combining drum mallets with cimbalom mallets. In the second movement of the same composition, Solbiati even prescribes four timpani mallets:

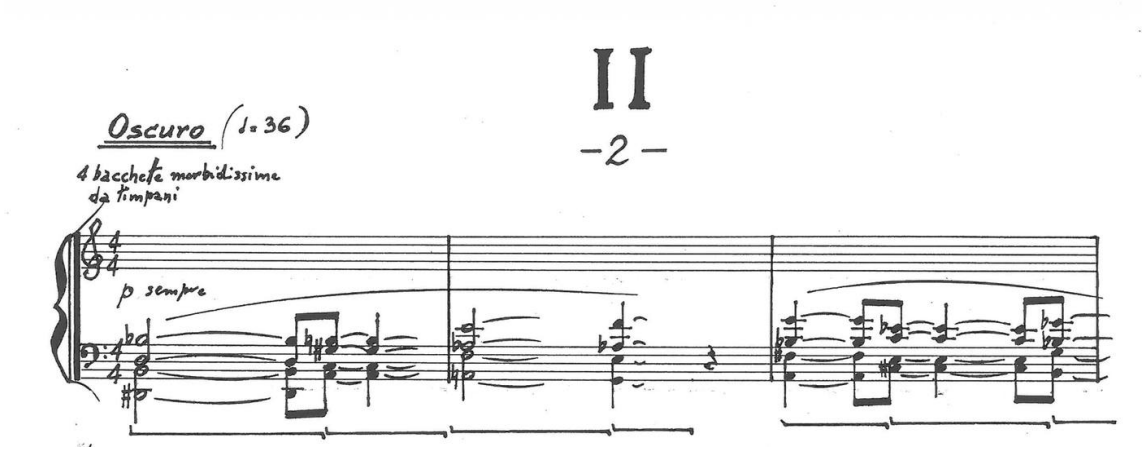


Figure 24: Example of playing with four timpani mallets in the second movement of the composition Quaderno d'immagini (A. Solbiati). Source: cimbalom part of Quaderno d'immagini (A. Solbiati)

In the eighth movement of the same composition, the composer again uses four mallets of different materials (two xylophone and two timpani):

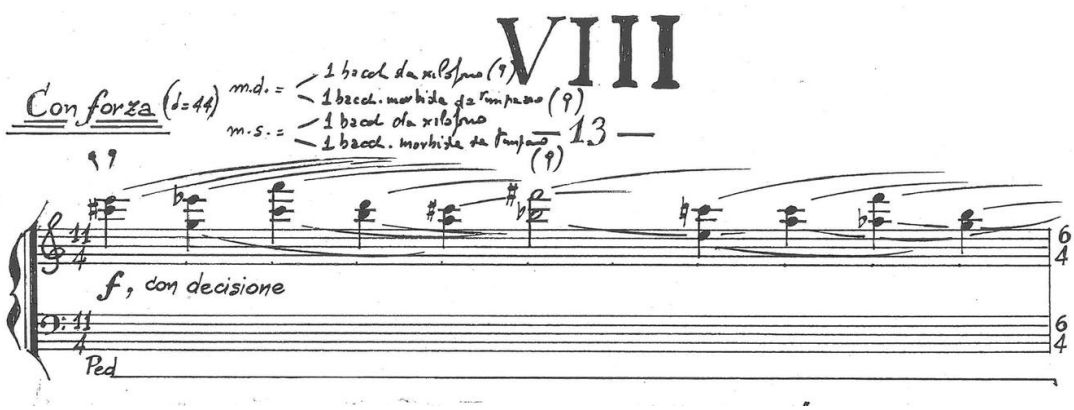


Figure 25: Example of playing with two xylophone mallets and two timpani mallets in the eighth movement of the composition Quaderno d'immagini (A. Solbiati). Source: cimbalom part of Quaderno d'immagini (A. Solbiati)

Recording 9: A demonstration of four-mallet playing. Source: the author

3.2.2 Playing with Three Mallets

The three-mallet technique is in many respects similar to four-mallet playing. In this case, however, an interesting aspect is the greater ease of improvisation, particularly in the context of jazz accompaniment. As already mentioned, a substantial part of my bachelor's thesis *Adaptace jazzového doprovodu na cimbál* (2024) is devoted to playing, improvising, and adapting jazz accompaniment on the cimbalom precisely through the use of three mallets. The research within that thesis focused on the combination of two mallets in the right hand and one mallet in the left hand:

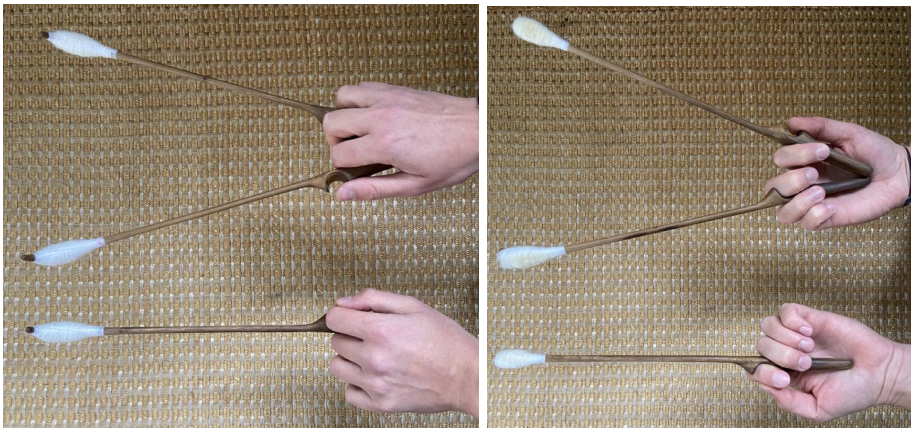


Figure 26: A possible grip for three mallets. Source: the author

Beyond transcriptions of accompaniment by jazz masters, that bachelor's thesis also proposed several exercises, such as a sequence of chords in the accompaniment of the A section of the song "All the Things You Are," where the left hand plays the note marked with the number 1 and the right hand plays two tones marked with the number 2:

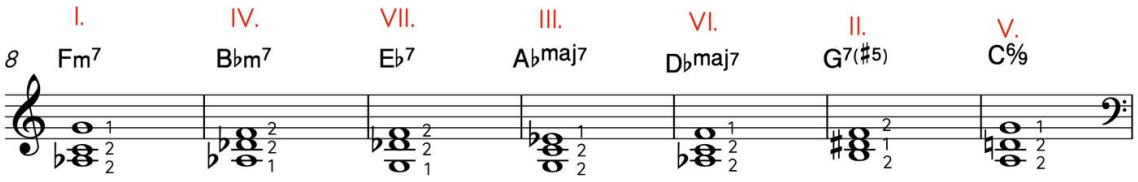


Figure 27: Chord sequence from the song "All the Things You Are." Source: bachelor's thesis Adaptace jazzového doprovodu na cimbál (M. Grombiřík)

It is precisely in the freedom of voice-leading and accompaniment, especially in the context of jazz music, that I see the greatest potential of three-mallet playing. Based on such experience, this playing technique has become an integral part of my musical practice.

Recording 10: A demonstration of three-mallet playing. Source: the author

Beyond my own concert activity, I have also written several short compositions for primary art school pupils, through which they can become acquainted with the issue of three-mallet playing.

In the first example, the pupils hold two mallets in the left hand and one in the right. In the second example, it is the reverse — two mallets in the right hand and one in the left. As with the chord sequences mentioned earlier (Fig. 27), the notation here also differs from the four-mallet system, namely: 1–1–2 (for two mallets in the left hand) or 1–2–2 (for two mallets in the right hand).
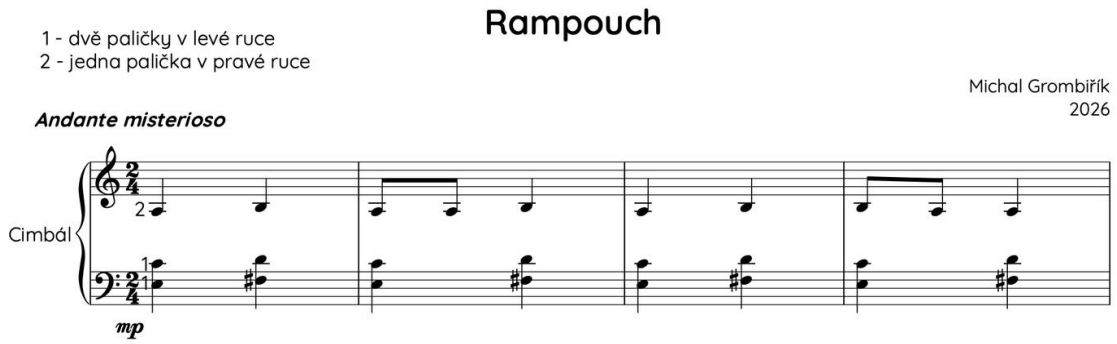


Figure 28: Use of three-mallet playing in the children's composition Rampouch [Icicle] (M. Grombiřík). Source: the author

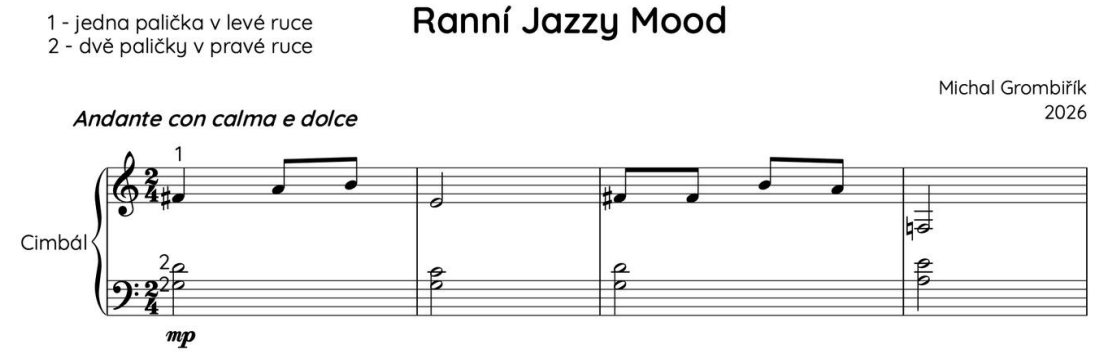


Figure 29: Use of three-mallet playing in the children's composition Ranní Jazzy Mood [Morning Jazzy Mood] (M. Grombiřík). Source: the author

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Notes: 42. DIERSTEIN, Christian; ROTH, Michel; RULAND, Jens. *The Techniques of Percussion Playing: Mallets, Implements and Applications*. Bärenreiter-Verlag, 2018. ISBN 978-3-7618-7064-8. — 43. GROMBIŘÍK, Michal. *Adaptace jazzového doprovodu na cimbál* [Adapting Jazz Accompaniment for the Cimbalom]. Bachelor's thesis. Brno: Janáček Academy of Performing Arts in Brno, 2024.

3.3 Damping the Strings

The following passage does not discuss damping the cimbalom's strings by means of the pedal mechanism. Damping the cimbalom's strings (by hand or through preparation) is one of the simplest ways to achieve a marked change in the color of individual tones while still being able to set them in motion with a mallet.

The player can dampen individual tones or groups of them within a pre-arranged preparation, or can dampen the strings directly during playing with the fingertips or the edge of one hand, while the other hand continues playing with a mallet.

In general, damped tones sound darker, and their fundamental frequencies are audible in a more isolated way than with ordinary, open tones. Their decay is likewise substantially shorter. In the low bass register, this sound can resemble the "dull" character of an electric bass guitar (pizzicato). In the register just below C4 (middle C), the tone color comes very close to that of a marimba, for example. In the highest register, most of the strings' natural resonance is entirely suppressed by the damping, and the sound is reduced primarily to the percussive strike of the mallet, only slightly colored by the fundamental.[44]

3.3.1 Damping with the Fingers

To create a damped sound, one can apply finger pressure to a string very close to the bridge, while playing the same string with a mallet in the other hand. The intensity of the pressure can be used to control the degree of damping and the overall resulting tone color. This can be used for smooth transitions between a more and a less damped string, achieving a specific timbral diversity. A wool glove, or one made of other materials, can also be used for damping.

Damping with the fingers is further used for the selective muting of specific tones. This technique is especially practical in situations where one does not want to release the pedal (damping the whole instrument), but needs to stop the sound of only selected strings. In this way, the function of the pedal system can be partly replaced, which is applied, for example, in the interpretation of Renaissance and Baroque transcriptions. In such cases, the pedal can be left open in order to approximate the authentic sound of the psaltery and the hackbrett, while the fingers dampen only those tones whose continued ringing is undesirable. The finger-damping technique is also found, however, in current original cimbalom literature — for example, in the fourth movement of the cycle *Miniatury pro cimbál* [Miniatures for Cimbalom] by the composer Jaromír Dadák.
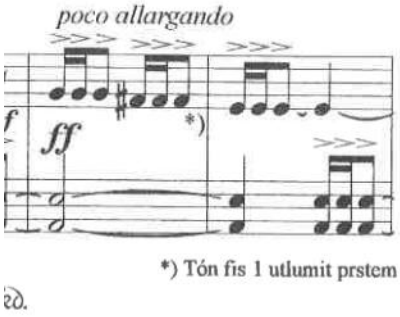


Figure 30: Example of damping a string with a finger in the composition Miniatury pro cimbál (J. Dadák). Source: cimbalom part of Miniatury pro cimbál (J. Dadák)

Recording 11: A demonstration of the technique of damping strings with a finger and with another part of the hand. Source: the author

3.3.2 Damping with Another Part of the Hand

Damping with the hand is an integral part of cimbalom-family playing, especially on instruments that lack a damping system (e.g. the hackbrett, the santur, etc.). In the historical development of the instrument, damping strings by hand represented the principal technical aspect, one that was only replaced by the pedal system in 1874. Players of these instruments had to — and still have to — dampen the strings by hand almost continuously. In this context, it is therefore not appropriate to speak of an "extended technique," but rather of a basic one.

In the practice of free improvisation and "playing" with sounds, however, hand damping offers us a fairly wide spectrum of possibilities and colors. Similarly to finger damping, the strings can be damped with the whole palm, or with the forearm, while playing with a mallet in the other hand. Damping of the strings can be carried out before the strike, during it, or after it. A combination is also possible — for example, striking already-damped strings and releasing the damping immediately after the strike — whether with or without the pedal.[45]

Gaggero (2024) likewise mentions three ways of damping with the hand:

a) damping a tone while the following tone is played — if the pedal is kept depressed and the string is damped by hand only after it has sounded, there is no immediate and complete cessation of sound, but rather a specific weakening and change of color. This technique is very useful for smoothly connecting tones: the previous tone is damped only a few moments after the following tone sounds, which effectively prevents excessive and undesirable blending of harmonies with the pedal open;

b) damping tones at the end of a phrase — if the instrument lacks an upper damping mechanism (see section 1.1.4), hand damping can help achieve complete damping of the instrument, including the treble register;

c) damping tones immediately after they sound — a technique in which the pedal is kept depressed and the tone is damped by hand right after it sounds. Gaggero adds regarding this technique: this technique, especially when playing loudly close to the bridge and using hard mallets (for example metal ones), creates a short, rhythmic, percussive tone with a color that can resemble an electric guitar.

An example of tone damping can be found in the composition *Psy* [Dogs] for flute, cello, and cimbalom by the composer Péter Eötvös.
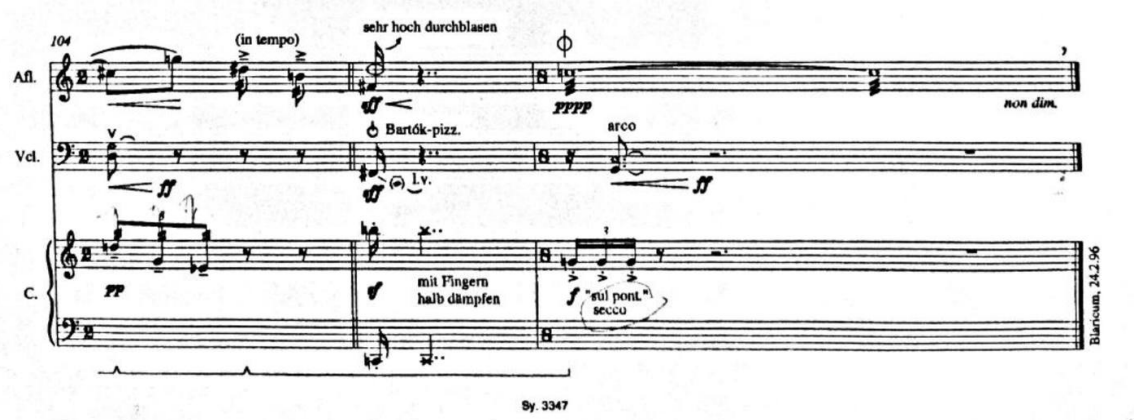


Figure 31: Example of damping a string with a finger in the composition Psy (P. Eötvös). Source: score of Psy (P. Eötvös)

3.3.3 Damping with the Mallet

Damping with the mallet derives from vibraphone-playing technique. On the cimbalom it can be carried out in a similar way, specifically by two methods:

In the first method, the string is damped with gentle mallet pressure immediately after it has sounded. Unlike on the vibraphone, however, the "slide" technique commonly used by percussionists cannot be applied to cimbalom strings. For this reason, contact between the mallet and the string may produce an accompanying sound (especially with metal tips or other hard materials), which can be undesirable in performance. The second method likewise derives

from vibraphone technique and consists of one mallet playing tones while the other, immediately behind it, dampens the strings that have sounded.[46] As in the first case, a specific percussive sound upon contact between the mallet and the vibrating string cannot be avoided here either. If the composer does not explicitly require this accompanying effect, this technique becomes difficult to use in the articulation of serious concert music. Conversely, it finds very interesting justification in jazz interpretation, where it can support a particular type of articulation — especially in the bass register when playing a walking bass, to which it lends the necessary definition and percussive character.



Recording 12: A demonstration of the technique of damping strings with the mallet. Source: the author

3.3.4 Damping with Other Objects

Because the cimbalom allows direct contact with the strings across its entire range, practically any material, applied to any part of the instrument, can be used to dampen them. The boundaries of creativity are in this respect almost limitless, constrained only by safety — that is, by ensuring that the player does not cause harm to the instrument, to themselves, or to those in the immediate vicinity.[47]

If one hand is playing with a mallet (or another object), a vast number of options open up for what the other hand can use to dampen the strings. Examples include a tennis ball, a screen-printing squeegee, crumpled paper, fabric, a buckwheat-filled cushion, tuning wedges, felt dampers, acoustic foam, polystyrene, foil, a glass medicine bottle, poster adhesive putty, and many other objects.



Recording 13: A demonstration of the technique of damping strings with other objects. Source: the author

Notes: 44. SHOCKLEY, Alan Frederick. *The Contemporary Piano: A Performer and Composer's Guide to Techniques and Resources*. Lanham, 2018. ISBN 978-1442281875. — 45. MEDKOVÁ, Sára, op. cit. — 46. KLEIBL, Martin. *Koncepce základního uměleckého vzdělávání ve hře na bicí nástroje* [The Concept of Primary Art Education in Percussion Playing]. Selected series of doctoral writings. Brno: JAMU, 2018. ISBN 978-80-7460-133-0. — 47. KLEIBL, Martin, op. cit.

3.4 Playing Outside the Standard Striking Area of the Cimbalom

When playing on other parts of the cimbalom, it is essential to constantly bear in mind the protection of the instrument from damage. It is therefore always necessary to carefully consider both the choice of object and the degree of intensity with which it will act upon the instrument.

Among the most common techniques are strikes on the body of the instrument, on the soundboard, or on the dampers, as well as bowing the edge of the instrument's body. Between the lowest string (C2) and the body there is a free space that can easily be used for strikes directly on the soundboard. To avoid scratching the finish, it is advisable to use a classical cimbalom mallet (with a wool tip) for these strikes. The handle (palm-side) part of the mallet can also be used, though in that case increased caution is warranted. Striking the soundboard produces a rich sound with a pronounced percussive character and a long decay.[48]

Further sonic possibilities are offered by the space behind the bridges and between the bridges and the tuning pins. These areas contain string segments that are not precisely tuned. The pitch of the individual sounds here is unpredictable, and the resulting character is very distinctive — it has a slightly comic effect and can resemble the sound of an out-of-tune honky-tonk piano.

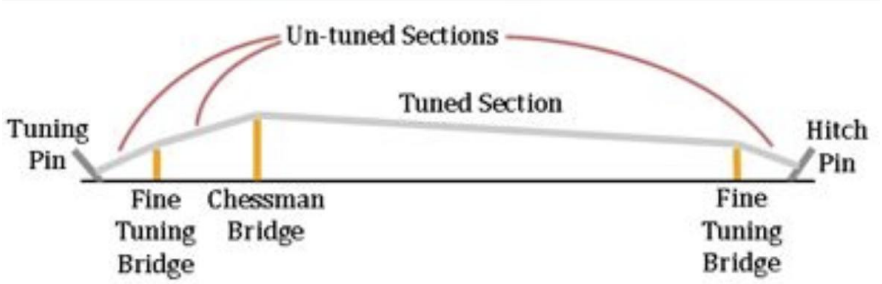


Figure 32: Diagram of the tuned and untuned portions of a stretched string. Source: Creating and Performing New Australian Works on the Hungarian Concert Cimbalom (J. Webster)

The dampers and the body of the instrument itself represent a further potential space for creating percussive sounds. Gaggero (2024) states that for a less sharp sound with lower resonance, vibraphone mallets, for example, can be used. An example of a composition exploiting the instrument's percussive possibilities is the piece for two cimbaloms *Cimbálové rozepře* [Cimbalom Disputes] by the composer and cimbalom player Daniel Skála. In the second

movement of this composition, the players supplement *ordinario* playing with percussive mallet strikes on the dampers (marked in the score with a cross) and strikes with the fist on the body of the instrument (marked with an empty rectangle).

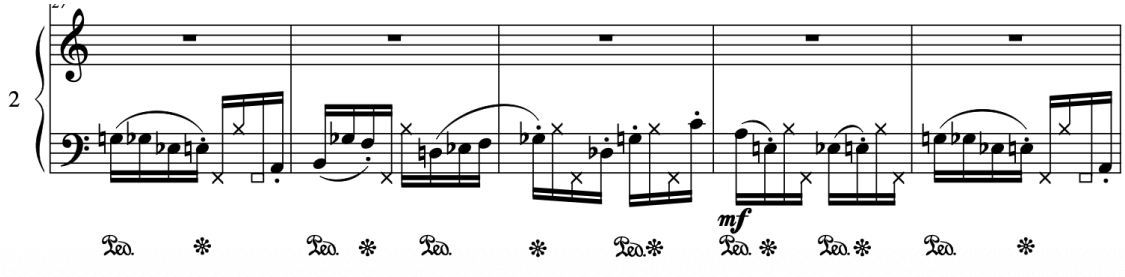


Figure 33: Example of percussive playing on the dampers and body of the cimbalom in the composition Cimbálové rozepře (D. Skála). Source: score of Cimbálové rozepře (D. Skála)

Bowing the edge of the instrument's body produces a very fine, rustling sound. This can lend the music a mysterious character, similar to breath sounds (air-only tones) on wind instruments or the use of the bellows alone on the accordion (more in section 3.8).

Recording 14: A demonstration of playing outside the standard striking area of the cimbalom. Source: the author

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Notes: 48. GAGGERO, Luigi, op. cit.

3.5 Glissando

As already mentioned in the introduction to this chapter, the glissando technique itself is, in today's context of cimbalom playing, so standardized that one could argue over whether it should even be classed among extended techniques. There are, however, many ways of approaching it, some specific variants of which could indeed still be considered extended techniques.

When analyzing glissando, a distinction must be made between the choice of pitches (the harmonic/melodic aspect) and the technical execution itself. When studying a score in detail, or

consulting with the composer, it is always essential to clarify exactly which type of glissando is meant.

3.5.1 Glissando Based on Pitch Selection

Interpreting glissando on the cimbalom is subject to certain criteria arising chiefly from the arrangement of the strings and the overall structural layout of the instrument (see section 1.1.3). The manner of executing the glissando (*gliss.*), as well as the choice of pitches itself, follows from these premises. For greater clarity, these techniques can be divided into the following categories:

a) **Chromatic gliss.** — to achieve a chromatic glissando, there are several options. A fast chromatic scale run can be used with both mallets, or the glissando can be executed in the bass register of the instrument, where the strings are arranged chromatically in sequence. If the glissando is performed in this section with both hands simultaneously, a fully chromatic effect is achieved;

b) **Diatonic gliss.** — if the musical material calls for a diatonic glissando, the middle register of the instrument, where the strings are arranged diatonically, can be used, for example. In this way a glissando can be executed within, for instance, the C major scale, the whole-tone scale, or other diatonic modes;

c) **Gliss. following the instrument's string layout** — in cases where the composer is not concerned with a specific choice of pitches but is primarily interested in the sound effect itself, any glissando path that the construction of the instrument allows at that point can be used. This technique is the least restrictive, and for that reason it is found very frequently in original cimbalom literature. The following example from the composition *Preludium a Toccatina I* by the Czech composer Jarmila Mazourová shows that the pitches specified in the first part of the glissando correspond exactly to those offered by the specific range and layout of strings in which the passage is notated.

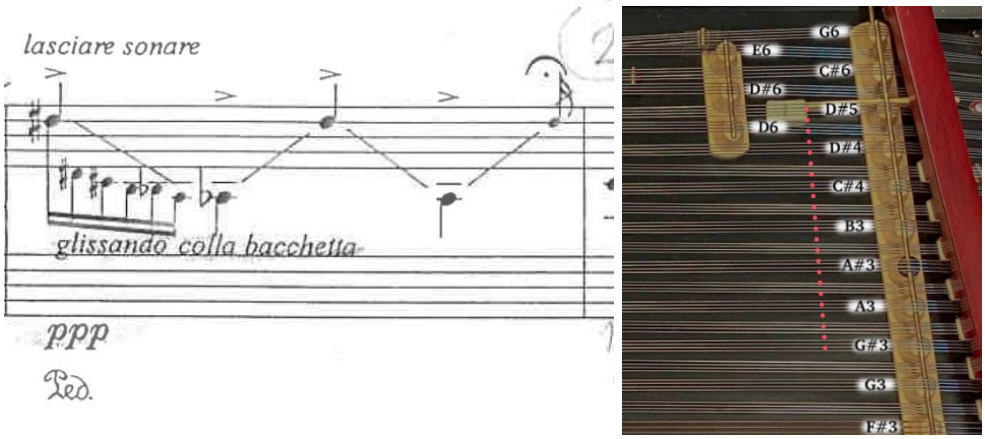


Figure 34: Example of glissando in the composition Preludium a Toccatina I (J. Mazourová). Source: cimbalom part of Preludium a Toccatina I (J. Mazourová)

d) **Unspecified gliss.** — a further example can be a glissando that is prescribed in the score but not further specified. In such a case it is left to the performer's judgment how to execute the technique (e.g. choice of direction, dynamics, or material) and what character of sound to choose;

e) **Timbral gliss.** — in this case the performer can use glissando, for example, on the non-pitched (untuned) sections of strings behind the bridges or behind the nut by the tuning-pin block (see section 3.4). Another possibility is preparation — that is, inserting various objects between the strings, which can produce an entirely different tone color.

In all the examples mentioned, a particular glissando must either be precisely specified, or deliberately left unspecified with only the intended range notated. The following two examples show, respectively, a notation where the range is "free," while in the second the glissando is precisely bounded both in range and in time. In both cases the performer is given a certain freedom as to exactly where the glissando leads, or what speed or duration it will have.
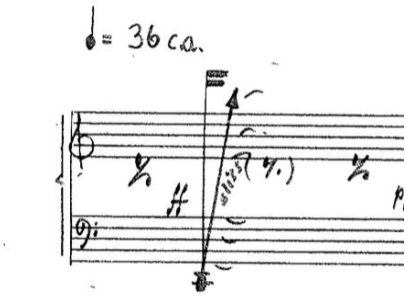


Figure 35: Example of a glissando with an unspecified endpoint in the composition Con un oir (E. Alandia). Source: cimbalom part of Con un oir (E. Alandia)

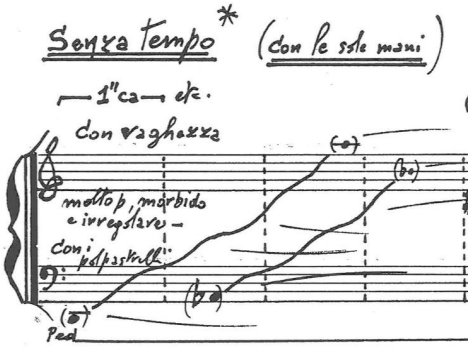


Figure 36: Example of a glissando with a specified range in the seventh movement of the composition Quaderno d'immagini (A. Solbiati). Source: cimbalom part of Quaderno d'immagini (A. Solbiati)

3.5.2 Glissando in Terms of the Playing Technique Used

There are again many ways of interpreting glissando. As in section 3.5.1, a great deal depends here on the composer's specific sonic conception and the precise specification of individual glissandi. The following text presents some of the techniques by which glissando can be interpreted:

a) **Sliding the mallets along the strings** — this technique provides a quiet, gentle sound, which is used especially in solo compositions or chamber playing. A certain disadvantage can be considered the faster wear and shortened lifespan of the mallet tip's winding;[49]

b) **Rubbing with the fingers, fingertip, fingernail, or a plectrum** — compared to sliding with mallets, this technique offers much greater dynamic potential. The sound is brighter, more metallic, and has a clear tonal onset;[50]

c) **Fast tremolo movement across the instrument with the mallets** — as Gaggero (2024) states, playing glissando as a tremolo offers a wide dynamic range. At the same time, this interpretation allows the use of different types of mallets, which can considerably diversify the resulting color of the glissando;

d) **Glissando using alternative materials** — to achieve an even wider range of colors, various alternative materials can be used, such as the edges of glass medicine bottles, toothbrushes, plastic or metal combs, coins, or brushes. It is also possible to work with preparation of the instrument and other similar methods. Thanks to the possibility of direct contact with the strings, the cimbalom is in many respects close to the piano, which allows a great many techniques to be borrowed directly from piano literature. In this connection, Shockley (2018) mentions, for example, the use of a plastic and a metal comb for glissandi in the piano part of Hans Werner Henze's Symphony No. 6.

Recording 15: A demonstration of glissando techniques. Source: the author

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Notes: 49. GAGGERO, Luigi, op. cit. — 50. GAGGERO, Luigi, op. cit.

3.6 Playing Without Mallets

The parts of the hand most often used in cimbalom playing are the fingernails and the fingertips. The main ways of playing with the hands can be divided into plucking (strumming), strikes, and sliding along the strings.

All of these techniques can, to varying degrees, be performed by the player even while holding a mallet, which provides a considerable advantage when alternating between different techniques. In general, the dynamic range when playing with the hands (owing to the character of the attack) is much narrower than when playing with a mallet.[51]

The following playing techniques are very specific and often differ from one another by only a small detail. For the sake of notational clarity, it is recommended that the techniques be specified concretely through verbal instructions in the score.

3.6.1 Plucking (Pizzicato)

a) **Pizzicato with the fingernail or a plectrum** — pizzicato can be used across the entire range of the instrument, either with one finger or with all ten. This type of pizzicato has been used very frequently in cimbalom literature, from the very beginning of the instrument's development.

Pizzicato can be played:

- on a single string;
- on two or more strings;
- quickly across all strings so as to create the impression of one longer sound;
- slowly, successively, across all strings, or only some of them;
- a finger can also be slid along the strings, or strings can be plucked and released sharply, and so on.

An example of chordal pizzicato can be found in the composition *Vékony Ildikó: 2009 október 3* by the composer György Kurtág:

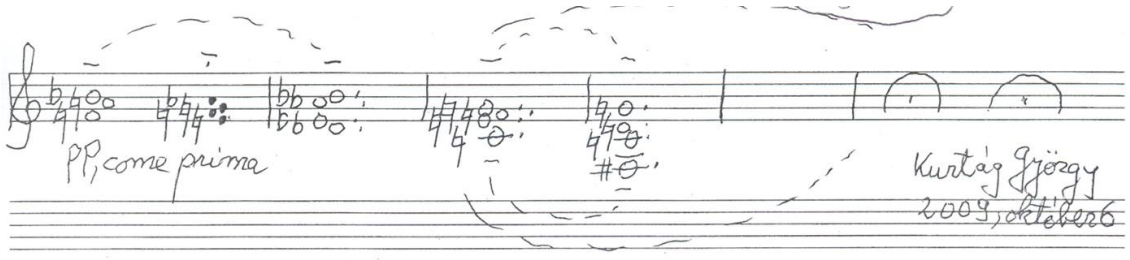


Figure 37: Example of four-voice (chordal) pizzicato in the composition Vékony Ildikó: 2009 október 3 (G. Kurtág). Source: cimbalom part of Vékony Ildikó: 2009 október 3 (G. Kurtág)

b) **Continuous pizzicato** — Gaggero (2024) also presents, using a specific example from the composition *Gramigna* (S. Gervasoni), the so-called continuous pizzicato. In this technique, one hand sets all the strings of a given tone in motion with pizzicato, after which the other hand takes over this pattern. This creates an uninterrupted flow of sound which, according to the composer's instructions, should sound slow, smooth, and at the same time slightly irregular.
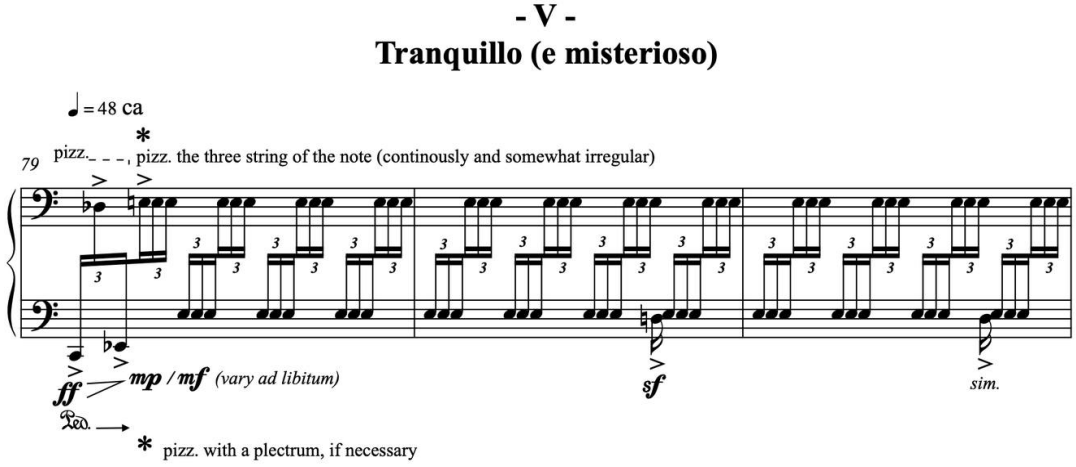


Figure 38: Example of the use of continuous pizzicato in the composition Gramigna (S. Gervasoni). Source: cimbalom part of Gramigna (S. Gervasoni)

c) **Pizzicato with the fingertip** — produces a gentle sound with a dynamic range spanning roughly from ppp to mf.

3.6.2 Tapping

One or more fingers can be used to tap on the strings. As with pizzicato, tapping can be done with the fingertips or the fingernails. Medková (2024) also uses fingerpicks, as well as plucking individual tones with the simultaneous use of, for example, a medicine bottle, which is slid along the vibrating string as the tone sounds, producing glissando-like sounds (for example in George Crumb's composition *Vox Balaenae*). An example of tapping the strings with the fingernails can be found in the part of the second cimbalom at the end of the third movement of the composition *Cimbálové rozepře* (D. Skála).

3.6.3 Sliding Along the Strings

The texture of the bass strings makes it possible to create a glissando along the length of a single string, producing a metallic, "crunchy" sound effect with a still-clear fundamental. Such a glissando can be played by the performer, for example, with a fingernail, a plectrum, a coin, a credit card, the fingers, the whole palm, or various other objects. The richest and fullest sound is produced when the glissando is led from the end of the string (at the bridge) toward its middle.[52]

3.6.4 Cluster

The cluster technique should always be clearly defined in the score. Technically, a cluster can be executed, for example, by a strike with the palm, with a brush, or with a large percussion mallet (such as one used for a gong, tam-tam, or large drum).

If the performer slides the entire palms across the bass register, the so-called "cluster-glissando" technique can be achieved. Combining a palm strike with a subsequent side-to-side slide produces the "cluster-swipe" effect.

Webster (2013) also mentions the single-hand roll technique: within a cluster held down by the palm, the performer drums gently by alternating fingers, similarly to playing a percussion instrument (e.g. conga). This produces a specific rolling cluster sound.

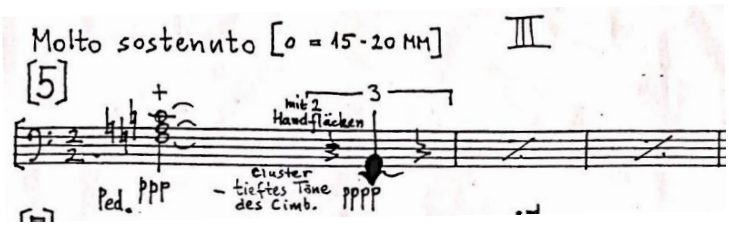


Figure 39: Example of a cluster in the composition Stele (G. Kurtág). Source: cimbalom part of Stele (G. Kurtág)

Recording 16: A demonstration of the techniques of pizzicato, tapping, sliding along the strings, and cluster. Source: the author

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Notes: 51. WEBSTER, Joshua, op. cit. — 52. SHOCKLEY, Alan Frederick, op. cit.

3.7 Harmonics (Flageolets)

Similarly to other string instruments, harmonics can also be used on the cimbalom. Harmonic (partial) tones are tones that sound along with every sounding of a fundamental tone. They are caused by the fact that a vibrating body (a string, a column of air) vibrates not only as a whole,

but also in its parts (halves, thirds, quarters, etc.). The sum of these vibrations forms the resulting tone color.[53]

On the cimbalom's strings it is possible to play harmonics (flageolets) by gently touching the string with a finger at a specific point (a node), while the string is set in motion with the other hand. Shockley (2018) points out that the longer the vibrating section of the string, the more strongly the harmonic sounds. This is precisely why (although it is physically possible to produce harmonics on all strings) these tones sound most strongly on copper-wound strings and in the lower half of the bass register. Webster (2013) states that the first seven harmonics (up to three octaves above the fundamental) sound distinctly on copper-wound strings, while in the middle register of the instrument this number drops to four or five clearly audible harmonics.

Gaggero (2024) further notes that when playing a harmonic, one hand must constantly remain in contact with the string, which limits playing at very fast tempi. It is possible, however, to prepare two or more fingers on the harmonic nodes of several strings at once and then set them sounding in quick succession. With this in mind, a sonority of multiple harmonics can also be achieved by combining the harmonic technique with playing two tones with one mallet (see section 3.1.3).

In the following example from the opening of the sixth movement of the composition *Quaderno d'immagini*, a specific notation for harmonics can be observed: the second harmonic (the octave) is written in parentheses above the fundamental tone, that is, directly above the string on which it is to be played. In the specialist literature, however, other notational conventions are also found. Webster (2013), for example, presents notation using a diamond-shaped notehead placed above the fundamental.

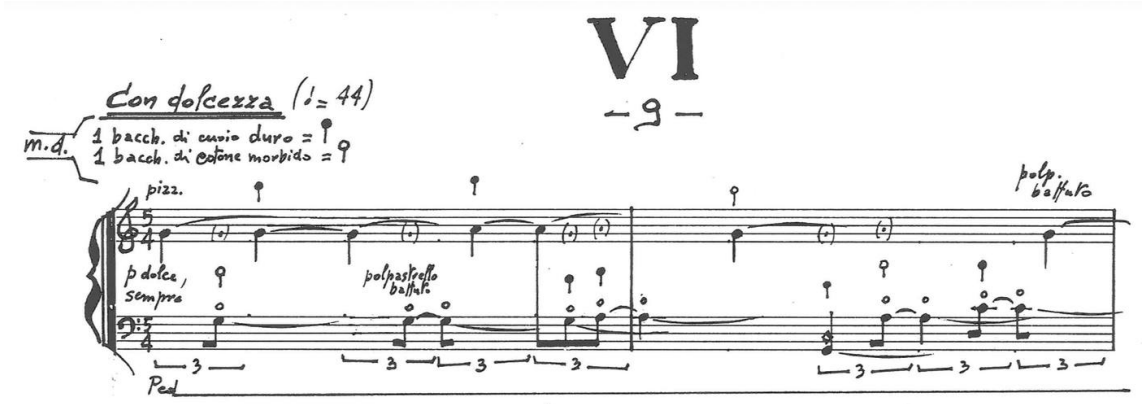


Figure 40: Example of the use of the harmonics (flageolet) technique in the sixth movement of the composition Quaderno d'immagini (A. Solbiati). Source: cimbalom part of Quaderno d'immagini (A. Solbiati)

3.7.1 Glissando of Harmonics

A glissando of harmonics is achieved by placing a finger on the string in the same way as for playing an ordinary harmonic, but, during repeated mallet strikes on the string, sliding it left or right. The result is a sound that moves smoothly through successive harmonics (rising or falling) depending on the direction of the finger's movement and its distance from the bridge.

A similar effect of a rising or falling harmonic can be achieved by sliding a coin along the length of the string. This technique can be performed at various speeds, the result being a moving upper harmonic accompanied by a pronounced "rasping" (percussive) sound caused by the friction of the metal against the string's winding.

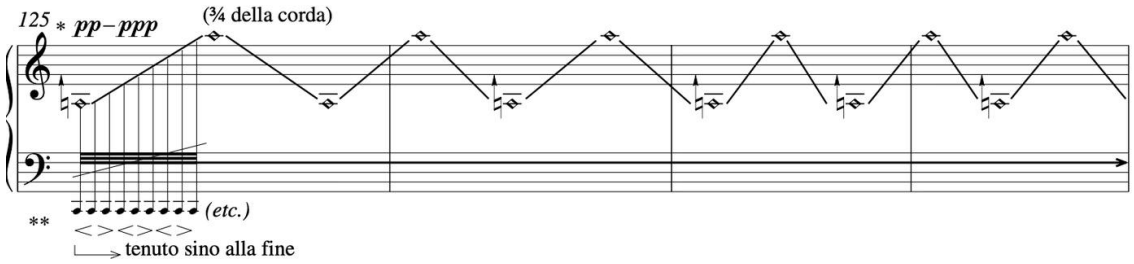


Figure 41: Example of the use of the harmonic-glissando technique in the composition Antigone (I. Fedele). Source: cimbalom part of Antigone (I. Fedele)

3.7.2 Combining a Harmonic with the Sounding Fundamental

Another possible effect using harmonics is the combination of a harmonic with the fundamental tone. This can be achieved by lightly damping only some of the strings of a given choir (a tone formed by several strings) at the node point, while the entire tone (all strings of that pitch) is set sounding with a mallet strike.

Alternatively, the thumb can dampen a harmonic on the farthest string, which the index finger sets sounding with a pluck, while the middle finger plucks the other, undamped strings.[54]

Recording 17: A demonstration of harmonics techniques. Source: the author

Notes: 53. ZENKL, Luděk. *ABC hudební nauky* [ABC of Music Theory]. 6th ed. Prague: Editio Supraphon, 1991. ISBN 978-807-0582-848. — 54. GAGGERO, Luigi, op. cit.

3.8 Playing with a Bow and Horsehair

Bowing is among the popular techniques used by percussionists and pianists. In his publication, Shockley (2018) devotes extensive discussion to bowing and its development in piano literature, dating, among other things, the first systematic attempts to 1972, in the work of the pianist and composer C. Curtis-Smith. In connection with the cimbalom, mentions of bowing are not plentiful, but thanks to the clear analogy between these two instruments, considerable inspiration can be drawn from the development of bowing on the piano. It is precisely in piano literature that this technique has undergone significant development over the past fifty years.

Gaggero also addresses bowing the cimbalom, albeit briefly, in his publication. He states that the bow can be used to set several strings sounding simultaneously, producing a sound rich in higher harmonics. Owing to the structural limitations of the instrument (in particular the differing height levels of individual strings), the bow can only be used at selected points. Gaggero further lists the specific strings that can be sounded individually: C2, C♯2, F3, C4, G4, G5, A♯5, F6, F♯6, G6, and A6.

In the treble section of the instrument, however, a single bow stroke can set at least three tones sounding at once: F♯6–G♯6–A6 or A♯5–C6–F6, and the same holds for the other side of the instrument. For better understanding, the following diagram marks the individual points that allow this type of playing, that is, the possibility of sounding several tones at once:



Figure 42: Example of points where the bow can be used to play individual tones or small groups of tones. Source: the author

As already mentioned, besides playing on the instrument's strings, the bow can also be used on the body of the instrument, producing a fine, rustling sound.

Webster (2013) describes that loose horsehair from a bow, or fishing line treated with rosin, can also be used to set the strings sounding. These materials are used by wrapping the hair (or line) around the string, after which pulling in one direction produces a tone similar to that of a bowed string instrument. This technique requires a longer preparation time, and both hands are needed to actually execute the technique.

Besides horsehair, other materials can be used in a similar way, such as strings (cords). Medková (2024) mentions: pulling a cord around one of the strings (or several strings) — especially the bass strings. Other materials can also be used — for example bow hair, nylon fishing line, or some other cord or string with a rougher surface texture. The ends of the bundle of hair must be glued together, ideally fitted with handles made of thin leather. A hook made from an office paperclip is essential for pulling it back out.



Recording 18: A demonstration of bowing. Source: the author

Notes: 55. MEDKOVÁ, Sára, op. cit.

3.9 Preparation

As in previous chapters, the possibilities for preparing the cimbalom are very close to those for preparing the piano. A considerable number of sources on this topic can therefore be found for the piano, especially in connection with the work of the composer John Cage, who is inseparably associated with the prepared piano. A detailed account of every preparation method would go well beyond the scope of this thesis; the following text is therefore more of a survey of the possibilities I employ in my own musical practice. When preparing the instrument, the performer should always take care that it is not damaged in any way.

Shockley (2018) presents several classifications of preparation, from which those applicable to the cimbalom have been selected:

a) **Preparation of the string surface** — placing an object on the surface of the strings and striking the strings near the object, or directly through it, produces a shared resonance between the strings and the object itself. Materials that can be used for this purpose include paper, glass objects, metal chains, ping-pong balls, fabric, coins, mylar-type foil, or aluminum foil;

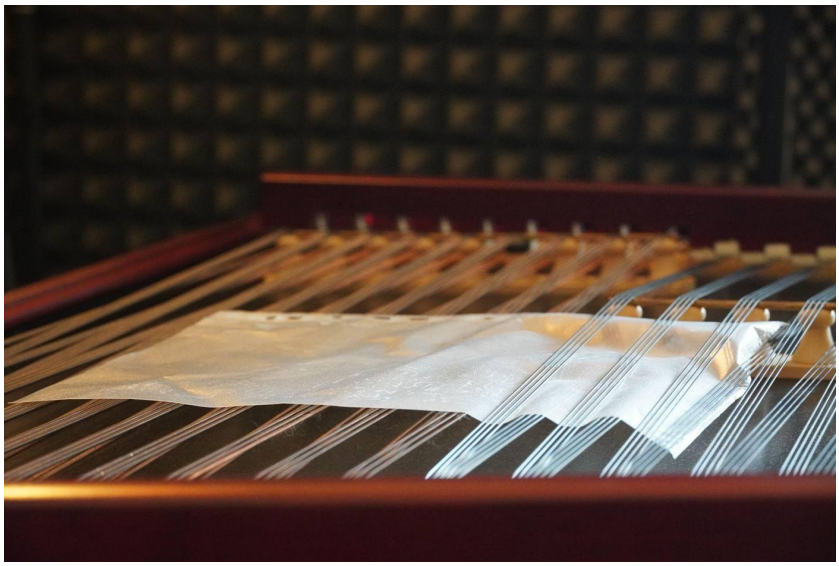


Figure 43: Example of surface preparation of the strings by placing mylar-type foil on them. Source: the author

b) **Preparation of the strings themselves** — these techniques, similarly to surface preparation, work with the body of the strings, but involve inserting materials between individual strings, attaching or otherwise fastening objects to them, or threading materials through several strings at once. Each chosen object produces a specific sound, and words that could consistently describe and distinguish the resulting colors and textures are difficult to find. For a better understanding of the individual techniques, I therefore recommend watching the video recording found at the end of this subchapter. An example of cimbalom preparation can be found in the composition *Ej Janku* (from the album *Minulo*) by the trio Contriology and Tomáš Vtípil.

Recording 19: Example of string preparation in the composition Ej Janku. Source: album Minulo (Contriology and Tomáš Vtípil)

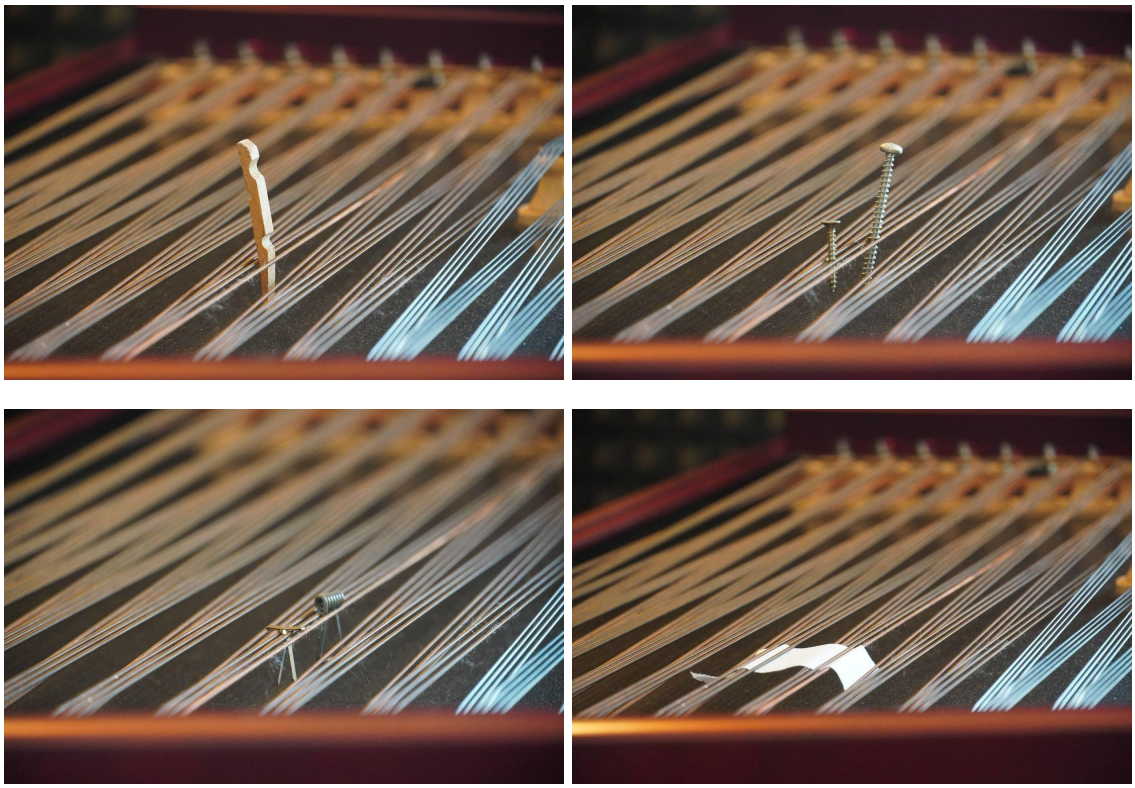


Figure 44: Example of string preparation by placing various objects between the strings. Source: the author

As with other preparation of the instrument, much again depends on the precision of the composer's instructions, unless the degree and manner of preparation is left to the performer. An example worth citing is John Cage's piano cycle *Sonatas and Interludes for Prepared Piano* (1948). For this composition, Cage created a detailed preparation table, defining various kinds of modifications to tuning, color, and the instrument's acoustic response.[56]

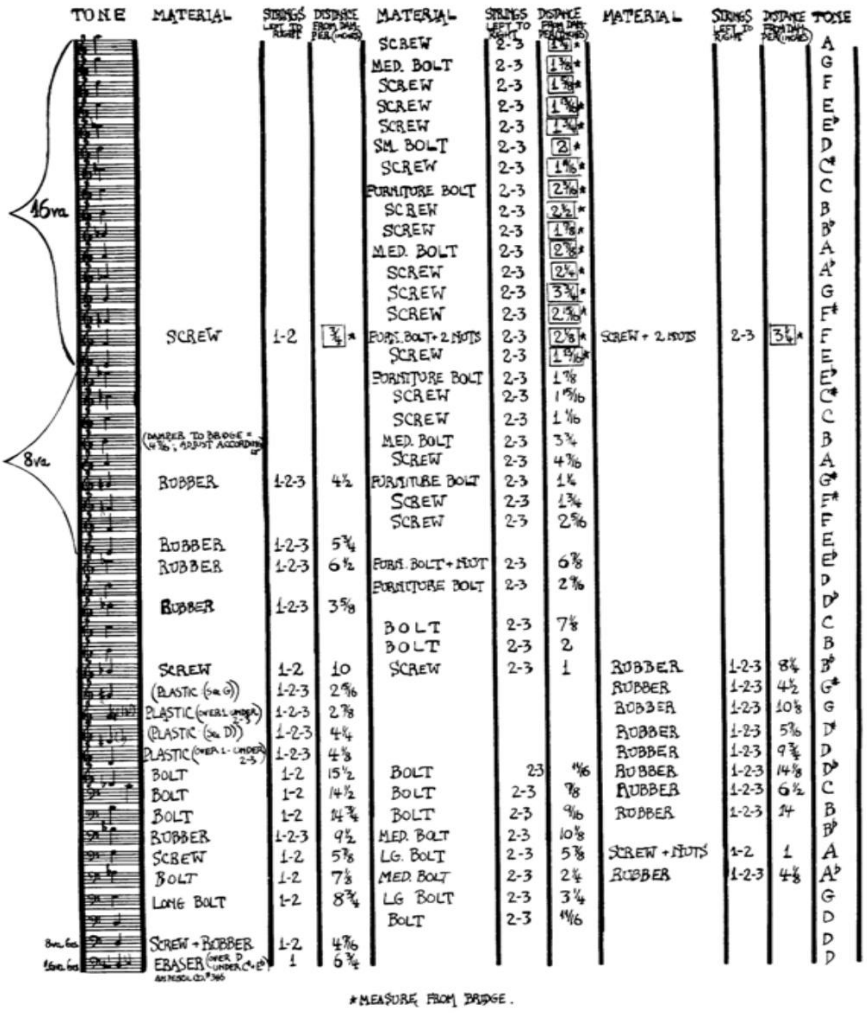


Figure 45: Preparation table for the composition Sonatas and Interludes for Prepared Piano (J. Cage). Source: Moving Beyond the Traditional Piano (A. Badivaku)

Recording 20: A demonstration of surface preparation of the strings and of preparation generally. Source: the author

Notes: 56. BADIVAKU, Adea. *Moving Beyond the Traditional Piano: A Literature Review of Extended Techniques and Electronic Enhancements*. PhD dissertation. Mount Pleasant: Central Michigan University School of Music, 2020.

3.10 Playing with Other Objects

Just as it is difficult to cover every object that can be used to prepare the instrument, it is likewise challenging to define every object that can be used to play the cimbalom. To avoid an endless enumeration of every conceivable object, only a selection of the most interesting ones encountered in contemporary music or free improvisation will be outlined here. All the tools and objects discussed have been tested in practice, do not damage the instrument, and can be considered artistically valuable and beneficial.

3.10.1 EBow (Electronic Bow)

The EBow (Electronic Bow) is a battery-powered electromagnet in a plastic housing, originally designed for playing the electric guitar. The device works on the principle of electromagnetic induction, vibrating a metal string through its own oscillation without the need for physical contact with the string. As on the piano, the EBow produces, on the cimbalom too, a long, continuous sound very rich in harmonics. This technique makes it possible to create static sound fields, so-called drones. Material generated in this way can also be further worked with in post-production and used as a distinctive building block of a composition. Gaggero (2024) states that the EBow works best on the cimbalom within the range C2 to C5.

As an example, I can cite my own composition titled *Cimbow*.[57]



Recording 21: Example of EBow playing in the composition Cimbow. Source: the author

An interesting combination is playing simultaneously with the EBow on a specific string while placing a pin between the strings an octave higher. Once the EBow has sufficiently set the fundamental tone sounding, the pin begins, under the influence of the vibrations, to rotate and bounce, creating a specific rattling sound that blends organically with the sustained fundamental tone.



Recording 22: Example of EBow playing. Source: the author

3.10.2 Superball

The "superball" mallet technique (using rubber bouncy balls attached to a mallet or a flexible wire) works similarly to its use on the piano. The sound is produced by the friction of the ball as it is drawn along wound strings, setting them sounding. Medková (2024) describes the technique on the piano as follows: the pitch is given by the tone of the string or strings — on the aforementioned wound strings, where this technique works best, it is practically impossible to draw the superball along a single string; it is always drawn between two adjacent strings (so it sounds as the fundamental tones of a minor second). The tone color can be changed both by pressure — to the extent possible given the stiffness of the wire and the distance of the grip from the head of this specific mallet — and by the speed at which the performer draws the superball along the string(s). With sufficient practice, both of these sound adjustments (pressure and speed of the draw) can of course be combined. A very interesting sound effect can be achieved if, while drawing the superball along a string, one gradually moves across to the strings of neighboring higher or lower tones. This produces a slow "glissando" upward or downward, or an oscillation around a single (semi)tone. This sonic construction is most often realized with the pedal depressed.



Recording 23: Example of the superball playing technique. Source: the author

3.10.3 Slide, Tonebar

A guitar slide, or alternatively a smoothed, flattened stone, makes it possible to create a glissando effect on individual strings. This effect is best observed on the metal strings in the middle register of the instrument. For the glissando to be clearly audible, the string must be set sounding. A problem arises once the sharp metallic impact of the mallet strike drowns out the

glissando effect itself. It is therefore necessary to practice this technique so that the resulting glissando is as effective as possible.



Recording 24: Example of the slide (stone) playing technique. Source: the author

3.10.4 Vibrating Body

A vibrating body can be used to create strong vibrating sounds audible across the entire range of the instrument. A very loud "drone" effect arises when stimulating the lower bass strings. Similarly, the device can be placed directly against the bridges, producing a sound effect resembling the mechanical sound of a drill. An example of the expressive use of a vibrating body on the cimbalom can be found, for instance, in the composition *Před vaší* (from the album *Minulo*) by the trio Contriology and Tomáš Vtípil.



Recording 25: Example of playing with a vibrating body on the cimbalom's strings in the composition Před vaší. Source: album Minulo (Contriology and Tomáš Vtípil)

3.10.5 Brush, Toothbrushes

Scratching with a bristle brush of varying hardness, a hairbrush, or toothbrushes along the strings produces a fine, rustling sound. Brushes can be used both to set individual tones sounding and to create clusters of various ranges.

3.10.6 Round Brush

Rolling a round brush along the strings with the pedal depressed produces a fine, "crunchy" sound that is effective across the entire range of the instrument. Round brushes can also be used for a classical striking technique, similar to playing with mallets. In that case, however, it is almost impossible to hit one specific tone precisely. It is therefore rather a matter of playing clusters across a wide dynamic spectrum, from the gentlest levels to high dynamics.



Recording 26: Example of playing techniques with toothbrushes, a brush, and a round brush. Source: the author

3.10.7 Balls

Small balls can be rolled, dragged, or thrown across the strings in various ways, producing random sounds depending on the material and the specific point of impact. Ping-pong balls have proven effective, for instance, offering a plastic sound and a high bounce, as have squash balls. These are rubber, heavier, and, unlike ping-pong balls, tend rather to dampen the strings.

Shockley (2024) cites several piano compositions in which composers use tennis balls, baseballs, golf balls, and other kinds of balls. For example, the composition *Dark and Stormy Night* by Roger Zare, for piano with ping-pong balls and an obligatory page-turner, likewise employs this method of preparation. The piece begins with the moment when the pianist strikes the bass strings, on which six balls have been placed, with the fingers. Zare explains that the use of ping-pong balls carries a theatrical aspect, since the vibrating strings can launch the balls into the air. The page-turner assists during the piece by catching the balls, placing them back on the strings, or removing them and returning them to their designated place.



Recording 27: Example of playing with balls. Source: the author

3.10.8 List of Further Possible Available Materials for Preparation

A list of further materials intended for preparation and playing, after Shockley (2018):

Metal

- coins
- screws, clamps
- screws fitted with washers and/or nuts

- aluminum foil laid on the strings, or strips threaded alternately under and over the strings
- metal rods laid crosswise (perpendicular) across the strings (brass, steel, etc.)
- a Tibetan singing bowl placed on the strings
- finger cymbals placed on the strings
- an inverted cymbal or gong placed on the strings
- a metal chain placed on the strings (light aluminum, or heavier steel)

Wood

- chopsticks
- hardwood dowels (rods) laid across the strings
- clothespins clipped to the strings
- half a clothespin used as a wedge between strings
- a bamboo wedge

Rubber

- gaskets and insulating tape
- piano-tuner's mutes
- pencil eraser caps
- soft rubber erasers

Paper

- strips of paper threaded between the strings
- sheets of paper placed on the strings
- cardboard placed on the strings
- a heavier paper book placed on the strings

Tape

- painter's or masking tape attached to the top side of the strings
- painter's or masking tape attached to the top side of the strings, running parallel to the strings (attached either between strings of the same pitch, or so that the edge of the tape buzzes against the neighboring strings)

Glass

- a glass pane placed on the strings
- a glass bowl or jar placed on the strings
- a glass rod placed on the strings

Plastic

- plastic screws and bolts
- ping-pong balls placed on the strings

- a plexiglass sheet rubbed against the strings
- a plastic part threaded between the strings

Miscellaneous

- adhesive putty (e.g. Blu-Tack) pressed onto the strings to dampen them
- bows with horsehair
- a strip of wool threaded between the strings
- standard inside-the-piano accessories
- brass or glass guitar slides
- EBow (electronic bow)
- jars, glass bottles
- timpani and orchestral mallets
- yarn mallets
- superball-type mallets
- adhesive putty (Blu-Tack)
- thin cotton gloves
- a clean, soft towel (for cleaning up after playing inside the piano)
- plectrums
- paperclips
- piano-tuner's mutes
- weighted mutes wrapped in fabric (lead balls/shot wrapped in several layers of cloth)
- and many others.

Notes: 57. GROMBIŘÍK, Michal. *Cimbow*. Online. YouTube, 2026. https://www.youtube.com/watch?v=nElnTJBnhso [cit. 2026-05-10].

3.11 Cimbalom and Live Electronics

The cimbalom's sound character — its timbre, its specific attack, and its long decay — has inspired composers to combine this instrument with live electronics. Over the past forty years, a number of works have emerged that combine the cimbalom with electronics, both in the role of a solo instrument and as part of an ensemble. Several significant compositions can be cited as examples, some of which are mentioned by Gaggero (2024) in his publication:

- **Pierre Boulez: *Répons* (1981)** — this pivotal work is written for six soloists, ensemble, and live electronics. The group of solo instruments consists of cimbalom, harp, vibraphone, glockenspiel/xylophone, and two pianos. All six instruments are captured by contact microphones, which allows not only their amplification but, above all, sophisticated real-time electronic manipulation. The idea of incorporating electronics grew out of Boulez's experiments at the IRCAM institute in Paris during the 1970s and 1980s. The sound of each of these six instruments is processed by computer, which

modifies it in real time (for example through frequency shifting, reverberation, or spatial rotation) and then sends it to loudspeakers positioned around the perimeter of the entire concert hall.[58]

- **Ivan Fedele: *Antigone* (2006)** — this seven-act opera, to a libretto by Giuliano Corti, represents another significant linking of the cimbalom with modern technology. The entire orchestra is captured by microphones, with the sound of the individual instruments modified and transformed in real time. The cimbalom plays a key role here within the specific coloristic palette of the instrumental ensemble; electronics further extend its sonic profile, creating complex sound textures that accompany and illustrate the opera's dramatic action.[59]
- **Luca Antignani: *The Pit and the Pendulum* (2008)** — a ballet inspired by Edgar Allan Poe's short story, structured into three scenes, two interludes, a prologue, and an epilogue. The instrumentation includes cimbalom, orchestra, and live electronics. In this work, Antignani uses the cimbalom as a central element whose sound is digitally processed and transformed in real time.[60]
- **Several works by Stefano Gervasoni**: *Com Que Voz* (2010), *Fado errático* (2015), and *Limbus-limbo* (2012).[61]
- **Aurés Moussong: *Murmures dans les brumes* (2021)** — a composition for solo cimbalom and electronics.

Notes: 58. MOORE, Richard Lee, op. cit. — 59. FEDELE, Ivan. *Ivan Fedele Catalogue*. Online. Ivan Fedele, 2026. https://www.ivanfedele.eu/data/composition/eng/1.html [cit. 2026-05-11]. — 60. *Babel Scores: Contemporary Music Online*. Online, 2026. https://www.babelscores.com/catalogs/music-and-scene/the-pit-and-the-pendulum [cit. 2026-05-11]. — 61. *Stefano Gervasoni Catalogue*. Online. Stefano Gervasoni, 2020. https://www.stefanogervasoni.net/index.asp?page=catalogue [cit. 2026-05-10].