

## Orchestras in the World Musical Cultures. Methodological Analytical Possibilities of Comparison

The purpose of my report is to discuss and base the aspects of comparison a systematic application of which could help to unfold the essential principles of the orchestras in the world cultures. I have included into the field of comparison four, to my mind, the most notable, geographically widely spread orchestras which in the course of history have based their artistic, cultural and civilization importance. These are: archaic orchestras, Indonesian gamelan, Japanese gagaku and European orchestra. They can be to a certain extent called as motherly orchestral cultures boasting a wealth of varieties, widely spread in a geographical respect but principally different and unreduced. A picture of their whole reflects a geographical section of the present-day orchestral traditions as well as discloses a historical development of the world orchestral cultures from the oldest types of the archaic orchestra to the conditionally youngest European symphony orchestra still actively evolving.

Here I introduce the term “archaic orchestra”. It includes the types of orchestras existing in primitive nations all over the world and also found in folk music of some civilized countries as a heritage. They are united by a common archetype, which is associated with a specific musical structure and thinking. One of the most characteristic features displayed by them – so called second polyphony, noticed by great many investigators, such as, J.Kunst, K.Stumpf, G.Messner and others. It is thought to reach even the Stone Age.

Knowing that all the four mentioned orchestral cultures were determined by different cultural and geographical conditions, evolved independently from each other, it's evident that they can be hardly compared as a cultural whole. On the other hand, a comparison in certain aspects is possible necessary and informative, therefore, it is of paramount importance to find proper methods and define the most important and above all suitable aspects for comparison. I've singled out five, the most important aspects, which I will discuss here more thoroughly. They include cultural, functional, communicative, musical theory and timbre-instrumental structure aspects.

The first, the most profound aspect of comparison, striving to grope the very genetic code of the formation of orchestra, is a **cultural** aspect of comparison. One cannot help starting with it because the analysis of its birth place, conditions, cultural medium, the tendencies of historical development unfolds the most fundamental points of departure of orchestral cultures and the reasons for their further road of formation. The sources of all orchestral cultures in question were entirely different, and it was a geographical situation that determined a partial isolation and autonomy. A more thorough analysis could facilitate to reveal the essential reasons for the uniqueness possessed by each of them.

Besides, looking through a cultural prism, we can also notice one of the most important things – the role and relationship between tradition and innovation. We can see that, for example, in archaic communities music proper is not perceived as a separate phenomenon, here all the spheres of life are inseparably fused. Such communities foster and preserve tradition, any deviation from it is simply a taboo and impossible. This may be the reason for the survival of only slightly changed heritage of archaic orchestras, reaching even nowadays. The gagaku and gamelan orchestras were also evolving on the basis of their tradition. However we can notice in this respect European culture differs. It has matured as more revolutionary, giving rise to a personality cult and the idea of renovation and perfection. This explains the emergence of intensive changes in theoretical systems, instrumental structure and in many other aspects of the European orchestra in the course of history; while the archaic, gamelan and gagaku orchestra retained the same orchestral structures, theoretical systems for centuries and even millennia, fostering and only slightly varying their tradition. Here we can notice the European inclination for unrepeatability, where each composer strives to discover something new, each epoch denies the previous one. On this respect the other three cultures have preserved a tendency of repeatability – a composer repeats the tradition, presents only a variant of its interpretation.

Being aware of the fact that a cultural analysis unfolds the tendencies of the fostering tradition or renovation we can get a deeper insight into a **functional** aspect of comparison. Now it is no less important to clear up what function the orchestra performs in the life of a certain culture; what place it occupies in a general musical context of that culture. Coasting a glance at the European orchestra in this aspect, we can notice that a unique tendency to renovation and a personality cult existing only in European culture also forms a unique, nowhere else discovered concert-type function of orchestra. However, in archaic communities music exists everywhere as an inseparable part of life, and the basic purpose of archaic orchestra is ritual. Gagaku orchestral music existed in the emperor's court and used to accompany all ceremonies, such as weddings, funerals, state holidays, and also served as accompaniment for dances and performances. The gamelan orchestra mostly fulfilled a ritual function. Different from gagaku it functioned not only at courts but also in villages and, on the whole, in all strata of society. Gamelan music first of all accompanied religious rituals and dances as well as ritual celebrations, such as weddings, circumcisions, village ceremonies, etc. If the European orchestra strives to keep the listener's vigilance and concentration on the things performed on the stage, one of the Javanese gamelan good criteria for musical presentation is to place the audience into a state between awake and sleep. (It could hardly be a positive feature in European music.)

It leads us to the conclusion that a comparative analysis of the functional purpose of orchestras opens up a way for disclosure of different orchestral-thinking types. It can also help to differently define the bounds between chamber and orchestral playing. For example in ritual-purpose orchestras (particularly archaic) a bound between orchestral and chamber playing is very indistinct. Here the size of orchestra doesn't play a decisive role, therefore, at the ritual both, a four-member group and, say, 40 performers can play. They can be perceived as the orchestra on equal grounds. Whereas a concert-purpose type of orchestra determines the importance of orchestra size, a more detailed differentiation of its instrumentation starting from solo playing, chamber ensemble, chamber orchestras to the biggest size orchestras.

The third aspect of comparison explores the mediums of **musical communication**. Here several important moments should be mentioned.

First of all, the peculiarities of notation or its absence. We can see that the European orchestra, raising the principle of unrepeatability and innovation could not manage without creating an exact notation. Every work, which is individual and the only, has to be exactly fixed and exactly played by performers. If in European culture a piece of work is regarded as the fixing of an unrepeatable moment, in other cultures it is more oriented to unchangeable rules due to which notation loses its importance. Archaic orchestras have never had any notation and the very notating of music would be alien to their syncretic thinking, which does not distinguish music as a separate object. Both Indonesian gamelan and Japanese gagaku possess certain notation methods. Still, so called gamelan cipher notation, where the pitches are marked by different numbers was introduced only in the late 19<sup>th</sup> century. It is associated with the impact of European culture therefore it is essentially alien to the gamelan musical tradition. In gagaku music notation existed from its very birth (about the 8<sup>th</sup> century), but it played only a subsidiary role; it did not fix exact melodic patterns, its interpretation and real performance mainly depended on the oral practice.

The study of the notation phenomenon unavoidably leads to the comparative analysis of the devices for the transmission of music. It is significant because it reveals different shapes and forms of the existence of music. The cultures such as European, which have an exact system of notation, also effectively use it for learning music. Besides, we all know that in concert practice orchestral players always play from notes. In archaic, gamelan and gagaku orchestras players learn orally. They play music only from memory.

A tradition of Japanese music boasts a peculiar method for the transmission and learning of instrumental melodies – so called *syoga* ('singing song'). It is a kind of hybrid of notation and oral transmission, because it exists both in singing and written form. *Syoga* uses syllables similarly like solmisation in Europe. This is the way to transmit information about tone color, melodic ornamentation, patterned movement, and playing techniques.

It seems likely that such a sufficiently complex structure as orchestra could be hardly able to exist not only without its own and ensured method for the transmission of music, but also without specially trained musicians. In all four orchestral cultures seems to exist the status of professional musicians. It is, therefore,

also important to take into the account specificity of this status and also see how differently it is interpreted in the cultures of different orchestras.

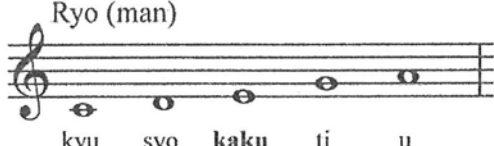
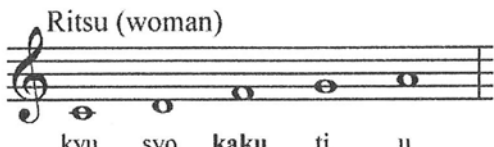

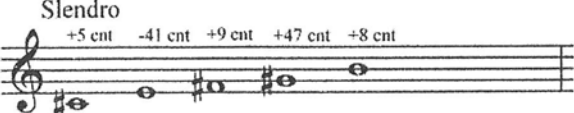
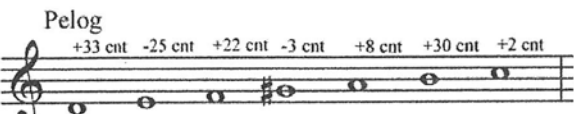
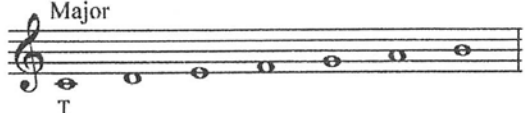

All the four orchestras under discussion stand out for their highly sophisticated, developed and unique theoretical systems of music. The formed systems in some orchestral traditions exerted their influence on a wider scale. In Japan, as early as 8<sup>th</sup> century, theoretical systems of the gagaku orchestra became a basis for all further development of Japanese music. A worldwide expansion of the European tonal system is also well known. Besides, one of the salient distinctive features of the archaic orchestra is the whole of its specific structural-modal-rhythmic principles. It clears up once again that these cultures are motherly and historically important.

Thus, the fourth aspect of comparison includes the analysis of the **theory of music**. It facilitates to unfold the basic features and structural principles of the music performed by orchestra. It embraces a wide circle of themes: the perception and coordination of time, the principles of form, rhythmic structures, modal systems, instrument tuning systems, etc.

In ex.1 we can see typical scale structures of every orchestra. We can notice a clear analogy – the existence of modal pairs. Gagaku orchestral music contains *ryo* (man scale) and *ritsu* (woman scale). On the basis of them six basic gagaku modes are formed. The main tone of these structures is a third one (different from European tonal system). It is called *kaku*. Namely its position determines the difference between these structures. Here both scale structures are perceived as each other's opposites – man/woman; it is also confirmed by a conflicting relationship of the sounds *kaku* (interval of minor second).

**Example 1**

**Scale structures**

<p>gagaku orchestra</p> <p>Ryo (man)</p>  <p>kyu syo <b>kaku</b> ti u</p> <p>Ritsu (woman)</p>  <p>kyu syo <b>kaku</b> ti u</p>	<p>archaic orchestra</p>  <p>I II</p>
<p>gamelan orchestra</p> <p>Slendro</p>  <p>+5 cnt -41 cnt +9 cnt +47 cnt +8 cnt</p> <p>Pelog</p>  <p>+33 cnt -25 cnt +22 cnt -3 cnt +8 cnt +30 cnt +2 cnt</p>	<p>europaean orchestra</p> <p>Major</p>  <p>T</p> <p>Minor</p>  <p>T</p>

The example of the archaic orchestra also evidently witnesses the opposition between two modal blocks of thirds. They are confronted at an interval of second, besides are performed by two different orchestral groups, which usually stand facing each other. There is no basic tone, the entire modal block is composed of equally interpreted sounds.

In gamelan music we come across two systems of tuning – *slendro* and *pelog*. They also perform the function of two opposed scale structures. For example in Javanese gamelan they divide orchestra into two orchestras of different tuning – one is tuned after *pelog* system, the other – *slendro*.

Though the European major-minor system at first sight also shows two basic scale structures, but here the difference is in their interpretation – not as each other's opposites but rather as two color variants of a single object. It is also confirmed by the coinciding first basic tone – a common tonic.

Thus, the short analysis leads to the conclusion that the perception of two scale structures as the opposites complementing each other (man/woman) is characteristic of a modal understanding of the gagaku, gamelan and archaic orchestra. In this respect, the European tonal system again slightly distinguishes itself – it emphasizes not two, but one tonal center. And so, this analysis helped us to disclose some moments concerning the composing principles of the orchestral cultures.

The convincing results of the theoretical analysis lead us to the last, fifth comparative aspect, concerning **timbre-instrumental orchestral structure**. First of all it is important to turn our attention to some more profound moments determining orchestral structure.

It is above all important to know what kind of instruments make the core of the orchestra and on the basis of what instruments a specific orchestra formed its shape in a historical aspect. Here we can find clear differences. For example, the gamelan orchestra took its shape exclusively on the basis of percussions, which make the biggest part of its instrumental structure. In this respect European orchestra is a direct opposite to gamelan. It was undergoing formation on the basis of string instruments, therefore a group of strings performed the main role in the orchestral structure for a long time. In addition, speaking about instrumental structure, it is worthy of mention that the structure of European and Japanese gagaku orchestras was standardized – in Europe by the Mannheim School of composers in the 18<sup>th</sup> century, in Japan – by the emperor Soga in the 9<sup>th</sup> century. Whereas each of the gamelan and archaic orchestras is partly individual.

Also interesting is the way an instrument proper is perceived; moreover that it can help to disclose the principles of thinking that determine the structure of the orchestra. If in European tradition an instrument is interpreted as a man-made thing for a practical use, an instrument in the archaic orchestra is mythologized. For example, the Ivory Coast nation *Dan* believe that instruments originated from animals or bush spirits and the spirits are particularly fond of music and help musicians to play with greater energy. Of interest is also the fact that the gamelan orchestra keeps to the role not to step over an instrument. It is obligatory to go round it and at the same time to perform a special gesture of apology and obedience.

In the further analysis of the orchestral structure it is important to take into consideration the functions of instrumental groups in orchestra. In the ex.2 we can see the tables of the functions and the instruments performing them.

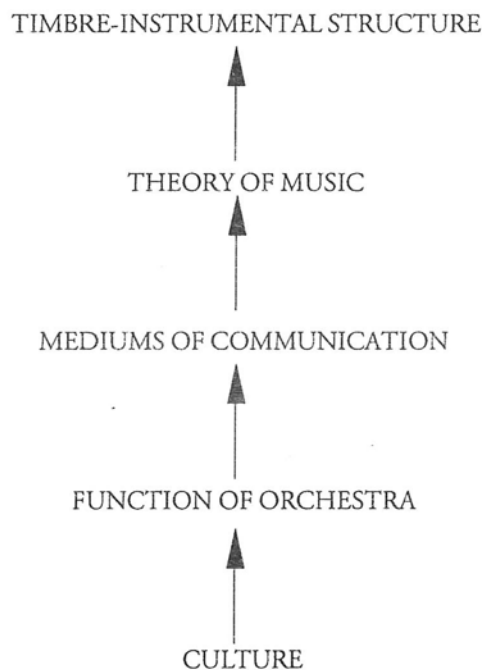
## Example 2

### Functions of instruments

Gamelan orchestra		
Melodic function	Main melody	<i>Saron, slentem</i>
	Elaborating melody	Bonang, gambang, gender, siter
	Counter-melody	Rebab, suling, <i>human voice</i>
Colotomic function	<i>Gong ageng, kempul, kempyang, kenong, ketuk</i>	
Rhythmic function (audible conductor)	<i>Bedug, kendang</i>	

<b>Gagaku orchestra</b>	
<b>Melodic function</b>	Winds: <i>hichiriki, ryuteki, fue</i>
<b>Supporting function</b>	<i>Sho, koto, biwa</i>
<b>Colotomic function</b>	Percussions: <i>shoko, kakko, taiko, dadaiko</i>
<b>Archaic orchestra</b> (Sudan, Berta nation)	
<b>Contradiction function I</b>	First set of <i>waza</i> trumpets
<b>Contradiction function II</b>	Second set of <i>waza</i> trumpets
<b>Rhythmic function</b>	percussions: wooden crotch <i>bali</i> , sticks, rattles

### Example 3



Here we can observe a clear analogy between the gagaku and gamelan orchestras. The structure of both of them is colotomic. It means that time is divided into temporal units according to the entrance of specific instruments. That is why we can see here a group of instruments that perform a colotomic function. Besides, important are the instruments of melodic function (in gamelan they are divided into three functional subgroups). In the gamelan orchestra their basis is melodic percussions, in gagaku – keen timbre winds.

The archaic orchestra displays a different picture: two equal groups of instruments perform the function of contradiction in each other's respect, while the percussions keep a rhythmic pulsation.

It is also worthy of mention that in the European orchestra orchestral groups reflect the origin of tonal music. They correlate between themselves as a kind of harmony functions, only expressed in a timber shape.

Finally, for the sake of a thorough study of the orchestral structure, it is necessary to compare the specifics of the conductor or leader and in this way to clear up a mutual coordination between performers. If European orchestras are directed by a specially trained person – a conductor, in the gagaku orchestra, for example, the role of an audible conductor is performed by a musician playing a small horizontal drum *kakko*. Similarly in gamelan the function of the leader is performed by a musician playing the barrel drum

*kendang*. One of the examples of the coordination of the archaic orchestra can be found in the percussion orchestra of the Ghana tribe Ewe, where the leader's role falls on the biggest master drum *agboba*. Here we approach to some interesting conclusions. It's likely that gamelan, gagaku and archaic orchestras base themselves on the principle of coordination between performers which is typical to chamber music in Europe. In this respect the European orchestra distinguishes itself again by a clearly separated function of a conductor.

We have reviewed and based five aspects of comparison from the most fundamental and widest cultural aspect to the narrowest and the most detailed one timbre-instrumental orchestral structure. The scheme (ex.3) illustrates the systematic whole of these aspects. We had a chance to get convinced that the whole of the mentioned comparative aspects is able rather thoroughly to disclose the fundamental principles of the archaic, gamelan, gagaku and European orchestras, and ensure its resultative comparative analysis. And more. Their systematic application helps not to loose a causal relationship of separate aspects and model a consistent and based picture of the world orchestral cultures.



## **Orchestras in the World Musical Cultures. Methodological Analytical Possibilities of Comparison**

### **Summary**

A wealth of independent musical cultures had existed and are still existing since olden times up to the present days. They have expanded the phenomena of playing orchestral music in their own and entirely different way. In Japan – a court orchestra gagaku, in Indonesia – a gamelan orchestra, an archaic orchestra and an European tradition orchestra rank among the best-known and geographically widespread in the world cultures, which in the course of history have based their artistic, cultural and civilization significance. The drawing of their whole reflects a geographical section of the present-day orchestral traditions. However, beyond any doubt, these cultures with deep historical roots and which emerged at different time partially reflect a historical development of the world orchestral cultures from an archaic orchestra to the conditionally youngest European symphony orchestra still actively undergoing its development.

It is of paramount importance to answer the question whether it is possible to effectively compare the mentioned orchestral traditions, or they are too different, or one can find enough contact points, making possible to more thoroughly perceive the roads and tendencies of the world orchestral thinking. In order to make this kind of comparison effective and give appropriate results one needs to have a systematic whole of comparable aspects, methodological instruments. It consists of several essential aspects.

The first, the most profound one, making an attempt to grope the very genetic code of the orchestra – a cultural aspect of comparison. The comparison of the sources of orchestra, its birth place, conditions, cultural medium tendencies of historical development unfold the most fundamental starting points of orchestral cultures, the reasons for their chosen further way of formation.

No less important is the function orchestra performs in the life of a certain culture and the place it occupies in a general context of playing music of that culture. On the basis of the purpose of playing music, for example, whether it is ritual or concert type, one can also distinguish separate types of orchestral thinking and somewhat differently define the boundaries between orchestral and chamber playing.

It is the tools for rendering music, the peculiarities of musical script (or its absence), the specifics of the musician's status that reveal the salient features of the existence and development of music in a certain orchestral tradition. The comparison of theoretical systems of music is also unavoidable and resultative. The perception and coordination of each culture, the principles of form, modal systems, the tuning of instruments, the rhythmic peculiarities are rather greatly or sometimes essentially different, therefore, they can serve for the disclosure of the basic features and principles of orchestral thinking. And last but not least, the structural principles of orchestra characteristic of every culture finally demonstrate themselves through the comparison of their timbre-instrumental organization, i.e. instruments, their grouping and functions in the orchestra, the composition of orchestra, the specifics of performance, the function of conductor / director.

A systematic adaptation of these aspects of comparison can be effective in the process of disclosing the topical moments of orchestral composing in the mentioned cultures. Their wholeness sufficiently enables one, as far as it could satisfy the interests of today's composers, to embrace the traditions of archaic, gagaku, gamelan and European orchestra.

## **Orkestrai pasaulio muzikos kultūrose. Metodologinės analitinės lyginimo galimybės**

### **Santrauka**

Nuo senovės ligi pat šių dienų egzistavo ir tebeegzistuoja daugybė savarankiškų muzikinių kultūrų, daugybė kultūrų savitai ir visiškai skirtingai išplėtojusių orkestrinio muzikavimo reiškinių. Japonijos dvaro orkestras - gagaku, Indonezijos gamelano orkestras, archajinis orkestras bei europinės tradicijos orkestras, tai vieni ryškesnių, geografiškai plačiai paplitę ir istorijos eigoje pagrindę savo meninę, kultūrinę ir civilizacinę reikšmę pasaulio kultūrų orkestrai. Jų visumos piešinys atspindi nūdienos orkestrinių tradicijų geografinį pjūvį. Tačiau be abejonės šios kultūros, turinčios gilią istorinę šaknį, užgimusios skirtingu laiku iš dalies reflektuoja ir istorinį pasaulio orkestrinių kultūrų vystymąsi, pradedant archajiniu orkestru ir baigiant sąlyginai jauniausiu ir vis dar aktyviai besivystančiu europiniu simfoniniu orkestru.

Svarbu atsakyti į klausimą, ar yra įmanomas minėtų orkestrinių tradicijų efektyvus lyginimas, ar nėra jos pernelyg skirtingos, ar galima jose atrasti pakankamai sąlyčio taškų, padėsiančių nuodugniau suprasti pasaulio orkestrinio mąstymo kelius ir tendencijas. Tam, kad toks lyginimas būtų efektyvus ir duotų tam tikrų rezultatų, reikalinga sisteminė lyginimo aspektų, metodologinių instrumentų visuma. Ją sudaro keletas svarbiausių aspektų.

Pirmas, pats giliausias, siekiantis apčiuopti patį orkestro genetinį kodą, tai kultūrinis lyginimo aspektas. Ištakų, orkestro užgimimo vietos, sąlygų, kultūrinės terpės, istorinio vystymosi tendencijų lyginimas atskleidžia pačius fundamentaliausius orkestrinių kultūrų išeities taškus ir jų pasirinkto tolesnio formavimosi kelio priežastis.

Ne mažiau svarbu yra tai, kokią funkciją atlieka orkestras tam tikros kultūros gyvenime, kokią vietą jis užima bendrame tos kultūros muzikavimo kontekste. Pagal tai ar muzikavimo paskirtis yra ritualinė, ar pavyzdžiui koncertinė, galime skirti ir atskirus orkestrinio mąstymo tipus bei kiek skirtingai apibrėžti ribas tarp orkestrinio ir kamerinio muzikavimo.

Muzikos perdavimo būdai, muzikinio rašto ypatumai (ar jo nebuvimas), muzikanto statuso specifika atskleidžia esminius muzikos egzistavimo ir vystymosi bruožus tam tikroje orkestrinėje tradicijoje. Neišvengiamas bei rezultatyvus yra ir muzikos teorinių sistemų lyginimas. Kiekvienos kultūros laiko suvokimas ir koordinavimas, formos principai, dermių sistemos, instrumentų derinimas, ritmikos ypatybės gerokai, o kartais ir iš pačios esmės, skiriasi, todėl tai padeda atskleisti pagrindines orkestrinio mąstymo savybes bei principus. Ir pagaliau kiekvienos kultūros orkestro struktūros principai galutinai atsiskleidžia lyginant jų tembrinę-instrumentinę organizaciją, - instrumentus, jų grupavimą ir funkcijas orkestre, orkestrų apimtis, atlikimo specifika, dirigento/vadovo funkciją.

Šių lyginimo aspektų sisteminis taikymas gali būti efektyvus atskleidžiant aktualius minėtų kultūrų orkestrinio komponavimo momentus. Jų visuma leidžia pakankamai, kiek tai tenkintų šiandienos kompozitorių interesus, aprėpti tiek archajinio, tiek gagaku bei gamelanų, tiek ir europinio orkestro tradicijas.