

**MATHEMATICS, RHYTHM, AND NATURAL LANGUAGE  
IN CHINESE AND EUROPEAN CULTURE**

by

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## **Sommario**

La ricerca in didattica negli ultimi anni si è mostrata sensibile alle problematiche della multiculturalità e nella cultura cinese, l'applicazione della matematica nel linguaggio della musica è assai diversa rispetto all'Occidente. Infatti, in Occidente il linguaggio musicale si è evoluto nella direzione di una complessa forma architettonica, con complesse strutture ritmiche, timbriche e formali. Viceversa, la cultura cinese presenta da millenni caratteri di continuità e di unità specifici come quello del sistema di scrittura, non di carattere alfabetico, ma costituito da caratteri indipendenti, ciascuno con un proprio valore semantico e fonetico, con un significato concreto la cui forma ha necessariamente influenzato il pensiero, la cultura e la musica cinese. Dallo studio è emerso che in Cina la natura dell'arte musicale è correlata al suono, in quanto espressione di potenza trascendente. In Occidente i compositori da secoli imitano la natura, invece nella cultura cinese il musicista non deve imitare nulla poiché la musica è natura che si manifesta attraverso l'espressione umana del suono. La mancanza di documenti scritti rende difficile l'analisi del vasto patrimonio musicale cinese e ancor più impegnativo il confronto con quello occidentale. All'interno di questa concezione, proprio perché la lingua cinese è monosillabica, la dimensione ritmica è il principale elemento del linguaggio musicale abbinato alla matematica e si è tramandata per secoli con la caratteristica dell'*immutabilità*, cioè senza sviluppare una pratica e di conseguenza una notazione mensurale articolata e complessa.

## **Abstract**

Research in Education in recent years has shown itself sensitive to issues of multiculturalism and in Chinese culture the application of mathematics in the language of music is very different from the West. Indeed, the West's musical language has evolved in the direction of a complex architectural form, with complex rhythmic structures, timbre and form. In contrast, Chinese culture has had, for thousands of years, a character of continuity and specific units such as its writing system, not alphabetic character, but consisting of independent characters, each with its own semantics and phonetics, with real meaning to the shape of which has necessarily influenced thinking, culture, and Chinese music. The study found that in China the art of music is related to sound, as an expression of transcendent power. In the West for centuries, composers have imitated nature, but in Chinese culture, the musician does not emulate anything because the music is nature that is manifested through the expression of human sound. The lack of written records makes it difficult to analyze the vast Chinese musical heritage, and, even more challenging, its comparison with the West. Within this concept, precisely because the Chinese language is monosyllabic, rhythm dimension is the main of language of mathematics and music combined has been passed down for centuries, with the characteristic of immutability, that is, without developing a practice and therefore a mensural and complex notation.

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## MATHEMATICS, RHYTHM AND NATURAL LANGUAGE IN CHINESE AND EUROPEAN CULTURE

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### Introduction

One of the most ancient and greatest civilisations on the planet is that of the Chinese which hosts one of the richest musical cultures in the world, cultured and authentic, mystical and pragmatic, oral and written, traditional and alive, similar and at the same time foreign to ours.<sup>1</sup>

Chinese music has a very ancient history, during which philosophers and musicians wrote numerous treatises on music and on theoretical problems as for example the determination of the absolute pitch of the sound-samples, the progression by fifths, the formation of the scales, the equal temperament, etc. The Chinese invented original musical instruments, some of which have gone beyond the borders of China to enter into countries of the Asian east and south-east. They have fine tuned notation systems in tablature, for instrumental groups which can number in the hundreds of players. Our knowledge of the cultured musical tradition is sufficiently broad, while less known, instead, is the popular music. Regarding modern and contemporary music there are not documents that allow us to trace a true and characteristic profile.<sup>2</sup>

The most appropriate perspective according to which Chinese music merits being examined is not limited to the counter-positions amongst primitive, popular and cultured, (of the court, of the professional musicians, and classical), oriental and occidental, northern and southern, but it explores its ties to the liturgies of the three main religions – Taoism, Confucianism, and Buddhism – and investigates the coexistence of its modalities of transmission: orality, manuscripts, and printed music. Orality authorizes and postulates fidelity. Repetition, necessary during learning, brings with it a strong assimilation, a profound imprint, which intimately connects repertoire and style. The manuscript allows more rapid or postponed transmissions and allows the passing of time before the memorization of the passage, thus facilitating the memory. Notation in China also includes the indication of the pitch of the sounds and, more rarely, of the fingering, of the ornaments or of the rhythm. Printed music is the trademark of official recognition, of prestige, and of the desire to save and diffuse, more than a true musical necessity and tends to substitute orality.<sup>3</sup>

In this way, as there exists a codified narration of the history, it is possible to collect a *corpus* of aesthetic texts.

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<sup>1</sup> François Picard–Enzo Restagno, *La musica cinese, La tradizioni e il linguaggio contemporaneo*, EDT, Turin 1998, p.3

<sup>2</sup> Trần van Khê, voce Cina in DEUMM (Dizionario Enciclopedico Universale della Musica e dei Musicisti) UTET, Il Lessico, vol. I, p. 555

<sup>3</sup> François Picard–Enzo Restagno, *op. cit.*, p.4

Some characteristics that are held to be typical, such as that of “programme music”, are shown, in the light of critical studies, to be recent additions. More than in the “flock of birds around the boat of the concubine who rows on the river that bathe the imperial palace with reflections of the moon on a spring night”, traditional aesthetics is available in sound, given by nature and moulded by man, a structuring element of time.

Esoteric, mystical, symbolic, Chinese music often appears too difficult to one who tries to grasp its theoretical principles. Descriptive, melodic, and sentimental, it seems too simple to the distracted auditorium of restaurants. Fluid, expressive, subtle, and energetic, it lets its very nature, limpid and complex, be seen by the musician. Ancient, transmitted and transformed by centuries of international exchanges, it has worked out forms according to rules familiar to the west; tuning, playing in tempo and correctly, listening, respecting the text, the style, practicing the instrument, mastering the parameters of the timbre of the intensity, of the dynamic profiles, of the accents, and of the articulation.

Outside of the constant reference to a *tonic*, Chinese music partially compensates for the absence of functional harmony with mutations and changes of mode. Above all, its system utilizes in an inimitable way variations of the rhythms, of the beats, of the accents, of the lengths of beats and of the phrases. As regards the pitches, they are organized according to multiple modalities (natural harmonics, consonances, fifths, proportions, temperament...) which can overlap each other in the same organic/formation or in the same instrument, creating a sort of spectral harmony.

As a sound phenomenon, Chinese music does not present notable characteristics. The predominance of pentatonism is common in the Celtic and South American world; in the same way we can compare the groups of oboes and percussions with the Turk and Korean ones, placing side by side the heterophony of the voice, of the string and wind instruments, with those practiced in the Arab-Andalusian *Nuba* or in the Vietnamese *Ca tru*; the intimism, the interiority of the zither of the well-educated to those of the Japanese *koto* or *shakuhachi* or of the Persian *ney*. Historical science, with the help of archeology and iconography, allows us furthermore, to explain and to date the origin of many of these relationships.<sup>4</sup>

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<sup>4</sup> François Picard–Enzo Restagno, *op. cit.*, p.5

## Popular Music<sup>5</sup>

Chinese popular music is varied and abundant since China is not only populated by the Han, but also by numerous ethnic minorities. Born of the people, it has not yet been the subject of publications in western languages and recordings of popular music are very rare, almost inexistent. The popular songs can be divided into two groups: the songs of children and the songs of adults.

### 1. *The songs of children (Er-ke):*

a) *Songs of the mother (Mu-ke):* these are songs that the mother sings to her newborn: a) lullabies; b) songs to teach the little ones to know the various parts of the body; c) those to teach them to familiarise themselves with nature, the song of the birds, the colour of the glow-worm; d) simple songs that can be repeated by babies who are learning to speak.

b) *Children's games (Erh-hsi):* a) these are songs which accompany the games of the children when they jump rope or mimic the gesture of beating the grain; b) they can also be riddles; c) or fables and legends repeated by the children.

c) *Pronunciation exercises (Lian-hsi-fayin)*, which help the children in the correct pronunciation of Chinese words.

### 2. *Adult's songs (Ming-ke, literally: "song of the people").* Ch'ü Hsi K'ing distinguished 7 types of songs:

a) *Love songs (K'ing-ke):* the popular songs of farmers and mountain men, the songs of those who work the earth, those of shepherds, of boatmen, of fishermen, of woodsmen, and the songs for the tea harvest are mostly love songs.

b) *Songs of daily life (Chenghuo-ke):* 1) songs about family life, usually sung by women, about matrimony and about the relationships amongst members of the family, often between sisters, aunts and nieces, mothers-in-law and daughters-in-law, etc; 2) songs of life in society; 3) songs about work for different jobs (songs of farmers, of fishermen, of boatmen, of woodsmen, of shopkeepers, of soldiers, and for the tea harvest).

c) *Humorous songs (Hua-č'i-ke):*

1) satirical (regarding physical defects, or certain jobs, or the cries of street vendors, or life's misadventures); 2) song in which one sings of impossible things.

d) *Narrative songs (Hsu-č'i-ke)* about: 1) things and facts of the past orally transmitted in the popular world; 2) contemporary facts such as the introduction of the tramway or of the habit of cutting one's hair.

e) *Ritual songs (Yi-č'i-ke):* that is, songs of the elderly, or songs of good wishes for the new year, of matrimones, or of the construction of a new house.

f) *Erotic songs (Wei-č'i-ke)*, in which one speaks of adultery, of sexual acts, or of the various parts of the body.

g) *Songs in which advice is given on what needs to be done, or about that which is morally prohibited (Kwan-č'i-ke).*

The small amount of information which we have available allows us to make the following observations: 1) the work songs are often responsorial; a

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<sup>5</sup> Trần van Khê, *op. cit.*, pp.556

worker sings as a soloist and the others answer in chorus; 2) the voice is natural and the style is syllabic; 3) the work songs are often sung without accompaniment; 4) certain songs are accompanied with dances, and the instruments used to accompany are often the bamboo flute, the 2 string vielle, the 3 string lute, tambourines, etc; 5) in processional music or ceremonial (popular) the oboe (sona) is also played, the drum, gong, and cymbal; 6) the musical scales are mostly pentatonic without semi-tones, with the remainder tetratonic or tritonic ones.

## Cultured music

In almost all Asian countries, music is considered to be of divine origin. According to the Chinese, the creation of music comes from the mythical emperors Fu-hsi (2852-2737 B.C.) and Huang-ti (2697-2597 B.C.), which the ancient theoreticians immediately placed in relationship with the stars and the universe, giving life to a cosmogonic and philosophic conception to musical language; common to the main civilizations of the Far East. A section of the *Yo-ki* (Memorial of Music), cited by Maurice Courant, tells us that "... the clear and distinct sounds represent the earth, the succession of the movements of the dance represent the four Seasons, and the evolutions represent the wind and the rain. The 5 colours correspond to the 5 elements and the 5 degrees of the scale form a beautiful whole without disorder. The 8 directions of the wind correspond to the 8 families of instruments, and they obey the *liuh* (sounds produced with the sonorous reeds) without diversion.". The 5 degrees of the scale also correspond to the 5 directions of space and are assimilated to the prince, the ministers, the people, work, and to the material resources. The musical-philosophical system is summarized in table 1 which is taken from the Memorial which was cited above.

In China the music of the educated goes by the name *ya-yue* (literally: "noble music", "refined"), or *su-yue* ("vulgar music"), or *hu-yue* ("barbaric music"). This has to do with ritual court music (*ya-yue*), with profane music (*su-yue*) and with music of foreign origin (*hu-yue*).

Level	Intervals starting with	Seasons	Compass points	Elements	N.	Colours	Flavour	Organ	Function
<i>Kong</i>	First Fundamental	----	Center	Earth	5	Yellow	Sugery	Heart	Prince or Emperor
<i>Shang</i>	Major second	Autumn	West	Metal	9	White	Spicy	Liver	Ministers
<i>Kyo</i>	Major third	Spring	East	Wood	8	Light blue	Acid	Spleen	People
<i>Chi</i>	Fifth	Summer	South	Fire	7	Red	Bitter	Lungs	Public services
<i>Yu</i>	Major sixth	Winter	North	Water	6	Black	Savoury	Kidneys	The products

Maurice Courant, The *Yo-ki* (Memorial of Music)

Table 1

## The Historical Profile

If we take into account the legendary period, Chinese music has almost 4000 years of history.<sup>6</sup>

1) *The legendary period* (...- 1122, beginning of the Chu dynasty). The first of the 5 mythical emperors, Fu-hsi (2852 B.C.), is said to have invented the *k'in*, a psaltery with 5 strings (of silk), and the *šê*, a psaltery with 50 strings, with movable bridges. He is said to have been the creator of the music *li-pen* (= “place the base”). The emperor Huang-ti (2697-2597 B.C.) reduced the number of strings on the *šê* from 50 to 25, and is said to have been the creator of the music *hsian-chi* (“Universal Benefit”).

His minister Ling-luen was charged by the emperor Huang-Ti with looking, on the Kunlun mountains, for bamboo stalks which would be able to produce the fundamental sounds of music. It was, in fact, conviction that this was none other than the manifestation of the entire natural and supernatural order of the Creation, whose eternal harmony was assured by the existence of a single immutable and absolute sound; the *hueng chang*, or rather the “yellow bell”. For this reason, it was the precise duty of the top authority of the empire to see that the music of its people was always perfectly in tune with the forces of the universe. Since that time, the first task, which each emperor has had the obligation to fulfill upon rising to the throne, was to order his musicians and astrologers to recalculate the exact length of the reeds by which all the instruments of the empire had to be tuned, so that his reign would prosper in perfect harmony. This tradition had a very long life, such that, for many centuries, it was even believed that the fall or the extinction of a dynasty was owed to the inability of its members to find the exact *hueng chang*. Very complicated systems were drawn up to set, with extreme precision, this fundamental sound. One of these, consisted in the cutting of a reed as long as a line of 90 grains of millet of medium size. Beginning with the stalk, whose sound represented exactly the *hueng chang*, other stalks were cut in such a way as to obtain 12 sounds in all, symbolically attributable to the 12 months of the year. Since each sound was attributed with a mystic content, its perfect execution represented in itself the best of the art. Considered the revelation of the incomparable order of the Creation, music was held to be highly valuable in ancient China and cultivated in every epoch, especially by the women (*huang*), but also by the men (*fong*). “Music fertilises the seeds of virtue which man carries in his heart”, wrote Confucius, thus underlining its great educative and formative value.<sup>7</sup>

The invention of the *p'ai-hsiao* is attributed to emperor Shun (2225- 2206 B.C.), a polyquill or syringe, better known in the West as the “Pan flute”. The emperor is said to have created the music called *da-shao* (“great harmony”); so beautiful that 1600 years later Confucius “having heard it, and impressed by the persistence of this music in his spirit, spent three months without paying any attention to the taste of meat”.

2) *Ancient period* (dynasties of the Chu and of the Ch'in: 1122-206 B.C.). The history of Chinese music is closely tied to that of the various dynasties. On the other hand, we only know the history of the court music which was handed down

<sup>6</sup> Trân van Khê, *op. cit.*, pp. 557-558

<sup>7</sup> Romano Begatti, *Nella Musica*, vol. I, Fabbri Editori, Milan, 1997, p.44



in the annals of the official historians.

a) *The Chu Dynasty* (1122-225 B.C.). Under the Chu, music was above all ritual: ceremonies to venerate the Heavens and the Earth, the ancestors, the elderly persons, sacrifices to the 4 seasons, the mountains, and the rivers. It was also used to brighten up banquets. Of this music, there existed 6 different types: for large banquets for kings and vassals, for wine tastings, for public and otherwise important thanksgivings, for elderly persons, for farmers and men of letters, and for thanking the farmers. It was present at various festivals, corresponding to the ages of life: ceremonies for adolescents' putting on of the beret, for matrimonies, for funerals, and for the anniversaries of the dead. The court music was accompanied by dance: civilian dance (*wen-wu*), carried out by a dance company of 64 dancers, in 8 rows of 8, with a three-hole flute in the left hand and a pheasant feather in the right; military dance (*wu-wu*), carried out by a dance company of 64 dancers, with a shield on the left arm and a halberd in the right hand. It was music carried out with the most diverse instruments, divided in 8 categories according to the fabrication material; stone, metal, silk, stalk, wood, leather, gourds, or terracotta. Philosophical ideas and cosmological data began to influence the fabrication of the instruments, the setting of the absolute pitch of the sounds, the teaching of music, and its role in education. Confucius (551- 479? B.C.) and Mo-ti (500-416 B.C.) expressed their own ideas on the benefits and the harms of music, on music "able to change customs" and to "make man better", or to "corrupt him". The popular songs have been collected in one of the canonical books: *Shih Čing* or book of the odes.

b) *The Ch'in Dynasty* (255-209 B.C.). Under this dynasty, the ancient music was forgotten after the reforms carried out by the emperor Shih-Huang-ti (221-202). It was in a certain measure a "cultural revolution". During this period the creation of a plucked instrument should be noted, the *čěng*, today a zither with 13 or 16 strings, as well as the introduction, in China, of the *p'i-p'a*, an oval shaped lute with 4 strings.

3) *Historical period* (from the Han dynasty to the Ch'ing dynasty).

a) *Han Dynasty*(206 B.C.-223 A.D.). The ancient music was restored. The emperor Kao-tsu (206-196°B.C.) and the emperor Wu-ti (104-86 B.C.) encouraged the musicians to make the music that the Ch'in dynasty had set aside fashionable once again. Within the imperial palace the music called *kong-čong-yue* was created and set, in an exact manner, the pitch of the fundamental sound, the *hoang-čong* (the yellow bell). The *p'i-p'a*, a four stringed lute, and the *kong-hu*, an angular shaped harp with 23 strings (derived from the Assyrian harp) were very popular instruments. There existed 2 kinds of music: *ya-yue* (noble music), the ritual court music, and *su-yue* (vulgar music), profane music (such as the music for banquets and for spectacles, and the military music *ku-chui*).

b) *Rebirth of the ancient music and integration of foreign music: Sui dynasty* (589-618) and T'ang dynasty (618-934).

Under the T'ang dynasty 8 genres of music were distinguished: 1) *ya-yue*: noble music, ritual, court, mostly played in the temples; 2) *yen-yue*: court banquet music; 3) *su-yue*: profane court music; 4) *hu-yue*: foreign music; 5) *ku-chui*: military music; 6) *san-yue* or *c'a-hsi* or *p'ai-hsi*: music for various spectacles; 7) *k'in-yue*: music for the *k'in* (a 7 string zyther); 8) *ke-yao*: popular music. The official court music was divided into 3 main categories: *ya-yue* (ritual music of the court), *su-yue* (profane music) and *hu-yue* (foreign music). At the court of the T'ang, during their festivals, 10 kinds of *shi-bu-č'i* music were performed, 7 of

which had already been noted at the beginning of the Sui dynasty (these are indicated with an asterisk [\*] placed before the name: 1) *yen-yue-č'i*: banquet music; 2) *\*k'ing-yue-č'i*: popular and traditional Chinese music; 3) *\*hsi-liang- č'i*: music from central Asia; 4) *\*tian-č'u-č'i*: Indian music; 5) *\*kao-li-č'i* Korean music; 6) *\*kui-ci- č'i*: Kutch music; 7) *shu-le-č'i*: Kashgar music; 8) *kao-č'ang-ci*: Turfan music; 9) *\*an-kuo-č'i*: Buhara music; 10) *\*kang-kuo-č'i*: Samarcand music. There existed 2 organisations which gathered more than 30,000 musicians and dancers; the organization of the slave musicians and the women's school of music, a sort of "harem" which accommodated female musicians in the king's service.

Toward the end of the T'ang dynasty, of the 3 categories there remained only 2: *ya-yue* and the new *su-yue*, born of the fusion of the ancient *su-yue* music with the foreign *hu-yue* music. This new profane music had assimilated the foreign music. It was introduced in Japan during the Nara period (533-794) and it became the *togaku* (music of the T'ang), from *gagaku* (noble Japanese music). Korean music was present in the court of the T'ang, but Chinese music, in its own time, exercised its own influence on that of the Korean court (in Korea, the court music, of Chinese derivation, carried the name *T'ang ak* or "music of the T'ang"). Still again, under the T'ang, the music and the dances of India and Persia were introduced in China and integrated into the profane music of the court. For this reason, Kishjbe Shigeo (in *Historical Study* on music under the T'ang dynasty) defined such period as "the epoch of International music in China".

Beyond these 2 main characteristics (the rebirth of ancient music and the integration of foreign music), the music of this period saw other events take place. Under the Han, an organization of musical activity was set up which continued under the T'ang. The musicians were considered subordinate employees. Great musical groups were created, with double sections, one which stood and one which was seated, as appears in the frescoes of Tuen-hang. The court music incorporated the popular music, and the *su-yue* developed more rapidly than the *ya-yue*. The theory of the *liuh* (sonorous reeds which produce the sound samples) was looked at again; one recalls the names of the scholars Li-yen-nien and Ching-Fan. They began to speak of temperament and of the progression of fifths. They were made up of songs on the texts of poets; as pure instrumental pieces for different sections and songs with dances.

c) *Sung Dynasty* (Sung: 960-1126, and southern Sung: 1127-1279). Court music became disorganised. The slave musicians were substituted by another organisation of musicians in service to the court, but of popular origin. Female musicians and singers became rare. The number of court musicians was reduced. Banquet music was still played, but not as much as the *k'ing-yue*, popular music in which the traverse flute *ti* predominated. The theatre of the marionettes flourished, to which the "living marionettes" were added; little children dressed as adults. Many of the instruments used under the T'ang fell into disuse: the *wu-hsian*, an oval lute with 5 strings, and the *kong-hu*, an angular harp with 23 strings. There were three predominant directions taken in this period:

- 1) popular music tended to supplant the aristocratic music, even in the court and tea houses with female singers were instituted, followed by wine houses and singers' houses;
- 2) the forms of musical theatre began to develop, with a great flourishing of the marionette theatre;
- 3) the donation of different musical instruments and of works of musical theory, done by the emperor Hui-tsung to the court of Korea made certain that the influence of Chinese music on the Korean court was accentuated.

d) *Yüan Dynasties* (1280-1368). The Mongols introduced a different musical scale from the ancient Chinese range:

<i>He</i>	<i>Si</i>	<i>(Yi)</i>	<i>Shang</i>	<i>Chi</i>	<i>Gong</i>	<i>(Fan)</i>	<i>Liuh</i>	<i>Wu</i>	<i>Shang</i>
DO	RE	(MI)	FA	SOL	LA	(SI <sub>b</sub> SI)	DO	RE	FA

Musical theatre became very popular, with 2 main schools; with melodies of a pentatonic structure for the traverse flute and that of the north, with an apparently heptatonic scale. Theatre music, called by the name of *ča-hsi* under the Sung, was developed in *yuan-ku* under Yüan: theatre accompaniment using string instruments. The principle instrument was the *p'i-p'a*, an oval shaped lute with 4 strings. The musicians were organised in a hereditary caste. No new creation has been noted. First of all, restoring the ritual music to honour was sought.

e) *Ming Dynasty* (1368-1644). Music lived a period of decline until the emperor Se-čong (1522-1567), who ordered the regulation of court music. For example, it was obligatory to tune the instruments every month on the basis of a sound sample of fixed pitch, given by the sonorous reeds, the *liuh*. Studies were then carried out on musical theory on the part of the men of letters, such as Prince T'su-zai-yu (1573-1660), who wrote works on the *liuh* and on the temperament of the Chinese scale. Music was left in the hands of professional musicians, often despised, organised in hereditary castes. For the teaching of these musicians, the *šên-yue-kuan* was created. The *čiao-fang* depended on the ministry of Rites and directed the orchestras and choruses. Under the Ming, several orchestral groups were active: the *chong-he-shao-yue* played for the sacrifice to Heaven and Earth in the temple of the forebears of the emperor, during large and small audiences. The *čiao-fang-sin-u-yue*, a female orchestra, played during the sacrifice offered by the empress to the patron of the silk-worm farming. Other orchestras played entertaining music to brighten up banquets. Processional orchestras were used for the emperor's trips and triumphal orchestras of 5 different types. Under the already mentioned emperor Se-čong the *kun-k'u*, theatre was instituted.

f) *Ch'ing Dynasty* (1644-1911). The *hoang-čong*, a new fundamental sound was set and the court music of the Ming period continued. The hymns of that period had the names *he* (harmonious) and *an* (tranquil). Those that were sung under the Ch'ing, instead, had the names *ping* (calm), *kuang* (luminous) and *feng* (abundant). For the banquet music, various foreign groups played their own music. We recall the Mongol, the Tibetan, the Korean, the Burmese, and the Vietnamese. Under the Ch'ing theatre music of the *čing-hsi* type was very much in vogue, with its 2 "modes" mainly *si-pi* and *erh-huang*. An important development in popular and entertainment music occurred. Under this dynasty the influence of western music began to make itself felt, above all after the beginning of the twentieth century.

4) *Contemporary period* (from 1911 to our day). China lived, in this period, 2 political revolutions and a cultural revolution. The first brought about the first Chinese Republic, with its president Sun Yat-sen. Western penetration in the fields of culture and music, begun toward the middle of the nineteenth century, it increased much with these social upheavals. With the fall of the monarchy, the ancient court music disappeared, while entertainment music continued, along with chamber music with soloists (players of the *k'in*, a 7 stringed zither, of the *čêng*, a 13 or 16 stringed zyther, of the *p'i-p'a*, an oval lute with 4 strings, of the *erh-hu*, of the 2 string vielle), as also did music for small groups. European music made its

first appearance with the institution of a department of western music at the Fine Arts School of Shanghai (1915) and of a National Council in the same city (1927).

In 1949, a second political revolution brought the government of the People's Republic of China to power. From that date to the cultural revolution (1965-1968), a revolution within the revolution, the reorganisation of music, of literature and of the arts, was led by the ideas of President Mao, expressed in 1942 in his *Teachings on Literature and Art* at Yen-an. This was the first reform of the "Beijing Opera". A new work was then written, *Rebels Despite Themselves*, to narrate a farmer's rebellion. However, the new ideas were interpreted in different ways: some maintained "art and literature for all the people", others instead wanted to put "literature in the service of the workers, farmers, and soldiers", out of respect for the ideas expressed by Mao at Yen-an. The revolution in the "Beijing Opera", begun in 1964, was the prelude to the cultural revolution.

Traditional music was the subject of studies and research. The old masters of *k'in*, of *čêng* and other soloists were recorded. The Festival of Amateur singers and dancers of Chinese National minorities was organised in Beijing (October 1965) in which more than 750 artists, belonging to 53 minorities, took part. During the Cultural Revolution, traditional classical music gradually gave way to newly created songs. The grand piano was used even to accompany the pieces of the *č'in-hsi* (musical theatre of Beijing). Fortunately, this mistaken experience was abolished several years later. At the current moment, after the elimination of the "Gang of four", there are signs that make us suppose a return to the traditional forms, but the lack of recent documents does not allow us precise confirmations.<sup>8</sup>

## The musical language

### 1) *Absolute pitch*

China is the only country in Asia in which the idea of absolute pitch was taken into consideration even in ancient times. As we have already seen, the *hoang-čong* was set by Ling-luen, minister to the mythical emperor Huang-ti. Following this, in the course of history, it happened many times that the ministers of rites saw to the precise setting of the length of the reed corresponding to the exact pitch of such sound. It is close to that of MI, in the western tempered scale. Starting with *hoang-čong*, it was possible to set the 12 sample sounds, the *liuh*, by means of the cycle of fifths.

### 2) The 12 « *liuh* »

Maurice Courant in the *Encyclopédie Lavignac*, and Father Amiot in volume VI of the *Mémoires* concerning the Chinese showed how the absolute pitch of this fundamental sound was determined. It was close to MI, according to Courant, and to FA<sub>3</sub> according to Father Amiot. Arranging the sounds according to the pitches, one obtains, in the space of an octave, a scale of 12 degrees, the scale of the *liuh* (table 2). These 12 sounds, each a semi-tone from the other, do not form the chromatic scale. From them 5 were chosen in such a way as to construct the fundamental scale; a pentatonic scale without semi-tones, including as well 2 supplementary sounds, used as notes of passage.

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<sup>8</sup> Trần van Khê, *op. cit.*, pp. 558-559

Lih	Absolute pitches	
	According to Courant	According to Amiot
1. <i>Hoang-čong</i> (the yellow bell)	MI <sub>1</sub>	FA <sub>1</sub>
2. <i>Ta-liuh</i> (the great <i>liuh</i> )	FA <sub>2</sub>	FA <sub>2</sub> ♯
3. <i>T'ai-tseu</i> (the great arrow iron)	FA <sub>3</sub>	SOL
4. <i>Kia-čong</i> (the tied bell)	SOL	SOL <sub>2</sub> ♯
5. <i>Ku-hsi</i> (the ancient purification)	SOL <sub>2</sub> ♯	LA
6. <i>Čong-liuh</i> (the minor <i>liuh</i> )	LA	LA <sub>2</sub> ♯
7. <i>Hsian-pin</i> (the beneficial fertility)	LA <sub>2</sub> ♯	SI
8. <i>Lin-čong</i> (the bell of the woods)	SI	DO <sub>1</sub>
9. <i>Yi-tse</i> (the equal rule)	DO <sub>1</sub>	DO <sub>1</sub> ♯
10. <i>Nan-liuh</i> (the southern <i>liuh</i> )	DO <sub>2</sub> ♯	RE
11. <i>U-yi</i> (the imperfect)	RE	RE <sub>2</sub> ♯
12. <i>Ying-čong</i> (the echo bell)	RE <sub>2</sub> ♯	MI

Absolute pitch in China according to Maurice Courant in the *Encyclopédie Lavignac* and Father Amiot in volume VI of the *Mémoires*

Table 2

3) *The formation of the pentatonic scale: the «san-fen-sun-yi»*. Literally, this terms means division by 3 with diminution and increase. The height of the reed or the length of a string is divided by 3 and you take 2/3 of that measure. The reed or the string that is left gives a sound which is higher by one fifth than that of the base reed (for example, if the first sound is *fa* the second will be *do*). Dividing this new measure by 3 and taking a measure which is equal to 4/3 of the second. This gives a reed (or string) which produces a sound one quarter lower than that of the second reed (if the sound is *do* the next will be inferior *sol*) (Example 1); and so on. In the first case we have the superior generation, in the second the inferior generation.



Example 1

The length of the generating reed is of 81 lines. The sound produced is the *hoang-čong*: it is the fundamental degree of the scale, *kong*.

The second reed measures  $\frac{81 \times 2}{3} = 54$  lines; it is the sound *lin-čong*, the degree *če*.

The third reed measures  $\frac{54 \times 4}{3} = 72$  lines; it is the sound *t'ai-tseu*, the degree *shang*.

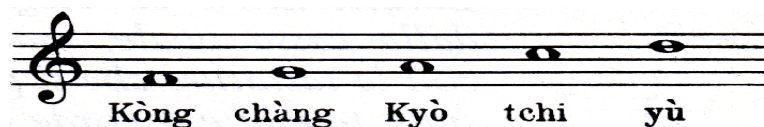
The fourth reed measures  $\frac{72 \times 2}{3} = 48$  lines; it is the sound *nan-liuh*, the degree *yu*.

The fifth reed measures  $\frac{48 \times 4}{3} = 64$  lines; it is the sound *ku-hsi*, the degree *čiao*.

The sixth reed measures  $\frac{64 \times 2}{3} = 42$  lines and 2/3; it is the sound *ying-čong*, the degree *pien-kong*.

The seventh reed measures  $\frac{42 \times 4}{3} = 56$  lines and  $\frac{2}{3}$ ; it is the sound *hsian-pin*, the degree *pien-čeng*.

The fundamental scale involves 5 main degrees (the first 5) and 2 auxiliary. It is apparently heptatonic, but, in fact, it has a pentatonic structure. (Example 2)



Example 2

The auxiliary degrees, the *pien* (*bian* in more modern transcriptions), is used as a passage note or an ornament:

	<i>kong</i>	<i>shang</i>	<i>čiao</i>	( <i>pien-čeng</i> )	<i>če</i>	<i>yu</i>	( <i>pien-kong</i> )	<i>kong</i>
	MI <sub>3</sub>	FA <sub>3</sub>	SOL <sub>3</sub>	(LA <sub>3</sub> )	SI <sub>3</sub>	DO <sub>4</sub>	(RE <sub>4</sub> )	MI <sub>4</sub>
or	FA <sub>3</sub>	SOL <sub>3</sub>	LA <sub>3</sub>	(SI)	DO <sub>4</sub>	RE <sub>4</sub>	(MI <sub>4</sub> )	FA <sub>4</sub>

The fundamental scale is characterised by the placement of the *pycnon*, that is, of the close succession of the degrees (in the example above: MI-FA-SOL).

According to the vulgate, this is, the prevalent and most diffuse version of the theory, pentatonism presents us with five aspects.<sup>9</sup>

According to the theory currently in force in the schools<sup>10</sup>, it is possible to determine the modal system of a melody through a simple principle of analysis; first of all, the set of the notes played will be brought back to a scale of five notes, according to the principle of equivalence of the octaves and considering the supplemental notes as accidentals or for passage. These five notes will form an anhemitonic (without semi-tones) pentatonic scale (of five notes). The base note will be *do*, first degree of the *pycnon* (a series of three notes separated by two consecutive whole tones). You then look for the *pycnon* and from there you place the *do*, written as *shang* in the *gongchen* notation. Finally, you observe the final note. Its relative position tells us in which of the five types or “aspects” of the scale it is found.

The Chinese define these five types (*diaoshi*) with the name of the note in the system of the corresponding “five sounds” (table 3):

<i>gong diaoshi</i>	<i>do</i>	<i>re</i>	<i>mi</i>	<i>sol</i>	<i>la</i>
<i>shang diaoshi</i>	<i>re</i>	<i>mi</i>	<i>sol</i>	<i>la</i>	<i>do</i>
<i>jiao diaoshi</i>	<i>mi</i>	<i>sol</i>	<i>la</i>	<i>do</i>	<i>re</i>
<i>zhi diaoshi</i>	<i>sol</i>	<i>la</i>	<i>do</i>	<i>re</i>	<i>mi</i>
<i>yu diaoshi</i>	<i>la</i>	<i>do</i>	<i>re</i>	<i>mi</i>	<i>sol</i>

<sup>9</sup> François Picard–Enzo Restagno, *op. cit.*, pp.17-19

<sup>10</sup> See, for example, “I fondamenti teorici della musica” (*Yinyue lilun jichu*), pp. 58-59.



Table 3

As did Constantin Bràiloiu and Jacques Chailley, Tran Van Khe uses the term “aspect”. Their theory<sup>11</sup> is based on the hypothesis that the five notes are generated by the cycle of fifths *do sol re la mi*. One deduces the following number of the five pitches, always established as relative pitches:

I aspect	<i>do</i>	<i>re</i>	<i>mi</i>	<i>sol</i>	<i>la</i>
II aspect	<i>sol</i>	<i>la</i>	<i>do</i>	<i>re</i>	<i>mi</i>
III aspect	<i>re</i>	<i>mi</i>	<i>sol</i>	<i>la</i>	<i>do</i>
IV aspect	<i>la</i>	<i>do</i>	<i>re</i>	<i>mi</i>	<i>sol</i>
V aspect	<i>mi</i>	<i>sol</i>	<i>la</i>	<i>do</i>	<i>re</i>

Table 4

A scale in which 1 2 3 5 6 have their pitch respectively as *do re mi sol la* will be in “*gong diaoshi*” or aspect I just as the scale *fa sol la do re*. A scale in which the notes have respectively the pitches of *do re fa sol la* will be of the type 5 6 1 2 3 and therefore in “*zhi diaoshi*” or aspect II (table 4).

Once the type or aspect has been determined, you see the absolute pitch of do (written as 1) in European notation. A scale in which 1 2 3 5 6 have respectively as their pitches *do re mi sol la* will be in “*do gong diaoshi*”. A scale in which 1 2 3 5 6 have for their pitches *sol la si re mi* will be in “*sol gong diaoshi*”. The scale *do re fa sol la* will be in “*do zhi diaoshi*”. The scale *sol la do re fa*, of the type 2 3 5 6 1 and with, at its base, a *re* (2) of absolute pitch *sol*, will be in “*sol shang diaoshi*”.

The simplified notation of Chev , generally speaking, uses only the unaltered notes 1 2 3 5 6, to which are possibly added the degrees 4 and 7. The absolute pitch appears at the beginning of the sheet music in correspondence to the western system taken as the absolute reference point. 1 = *fa* indicates the scale *fa sol la do re*, 1 = *sol* the scale *sol la si re mi*. Its transcription onto the staff renders this idea, making the accidentals appear in key. Thus, a *si* flat in key means 1 = *fa*, even if no *si* appears in the music. Sometimes it will be necessary to divide a section into different passages, each corresponding to a particular scale. There will be, therefore, “modulations” from one passage to another. There exist, as a matter of fact, different types of possible modulations<sup>12</sup>.

4) The «*tiao*». The term has several meanings: it indicates a “system”, but also a “way” (translation by M. Courant), or a certain manner of tuning the string instruments, or still a musical tune. According to Courant, the *tiao* design the different “forms” which a scale can take on; which constitute other “modes” based on the first sound of the scale. For example: the scale of *hoang- ng, kong-tiao* (*kong* system), “first” mode: MI<sub>3</sub>, FA<sup>#</sup>, SOL<sup>#</sup>, SI, DO<sup>#</sup><sub>4</sub> however, the term *tiao* often simply indicates the value of the octave. The scales of different *tiao* are those shown in table 5. The term *tiao* does not indicate a “mode”, as it is defined

<sup>11</sup> Presented on numerous occasions, for example in Tran Van Kh , *Musicales (traditions), I Musiques d’inspiration chinoise*, in *Encyclopedia Universalis*, Paris, 1980, pp. XI, 451-7.

<sup>12</sup> See also Yuan Jingfang, *A Summary of “fandiao”*, contribution at the “Training Symposium on Traditional Music in Asia and the Pacific”, Beijing, 15-19 June 1987.

in Indian music (*raga*) or in Persian music (*datsgah*), and not even the Vietnamese *dieu*, which is written with the same ideogram as the Chinese *tiao*. Needless to say, there also exists a modal scale with a fixed succession of intervals. So, some degrees are more important than others. Generally, the first degree of the scale is used as the final note or as the first note. The *kong-tiao* is characteristic of Chinese music and corresponds to the Japanese *ryo*. The *če-tiao* is the one used most frequently and corresponds to the Japanese *ritsu*, to the Korean *pyongjo*, and to the Vietnamese *diêu*; the *yu-tiao* appears in the popular music.

<i>kong-tiao</i> :	FA	SOL	LA	DO	RE	FA			
	pynon								
<i>shang-tiao</i> :		SOL	LA	DO	RE	FA	SOL		
<i>čiao-tiao</i> :			LA	DO	RE	FA	SOL	LA	
<i>če-tiao</i> :				DO	RE	FA	SOL	LA	DO
<i>yu-tiao</i> :					RE	FA	SOL	LA	DO

Scales of the several *tiao*  
Table 5

There are two main ways to tune the 16 string *čeng*:

<i>hsiao-kong-tiao</i> :	DO <sub>2</sub>	RE <sub>2</sub>	MI <sub>2</sub>	SOL <sub>2</sub>	LA <sub>2</sub>	DO <sub>3</sub>	RE <sub>3</sub>	MI <sub>3</sub>	ecc.
<i>čeng-kong-tiao</i> :	DO <sub>2</sub>	RE <sub>2</sub>	FA <sub>2</sub>	SOL <sub>2</sub>	LA <sub>2</sub>	DO <sub>3</sub>	RE <sub>3</sub>	FA <sub>3</sub>	ecc.

5. *Rhythm*. In the terminology, the word *čie* (rhythm) is often confused with *pan-yen* (beat, literally “beat of a bar and eye”). These are terms which indicate respectively the strong beat and the weak beat. Some observations with respect to rhythm:

- a) binary rhythm (measures of 2 and of 4 beats) is very frequent, while trinary (measures of 3 beats) is very rare in traditional classical music;
- b) syncopated rhythm is often used as ornamentation or as rhythmic variation, often in theatre music;
- c) in ritual music, theatre music, and processional music, the very different rhythmic instruments have an essential task;
- d) in theatre music, there are numerous rhythmic formulae;
- e) free rhythm appeared in ancient times in theatrical presentations.

6) *Harmony and polyphony*. In Chinese music, which is essentially melodic, there exists neither harmony nor polyphony in the western sense. Each passage is characterised by a relatively fixed melody. The notation indicates a melodic line which the players must respect. However, in a musical group, the execution of such a melody, even if in unison, lets us hear, simultaneously, varied melodic lines that are slightly different. This is due to the particularity of the instruments and they produce what we call heterophony; which is very frequent in the accompaniment of songs or in passages performed by instrumental groups. So, the works of prince Tsai-yu (quote by Courant) tell us that a fundamental sound called *čeng* can correspond to the *ying* (the same sound corresponding to the first, that is, the octave), the *huo* (“which is not the same sound, even being truly in harmony”:



that is, the fifth or the fourth) and the *t'ong* (which is the same sound, but produced on another string). Now, these sounds are more often successive to rather than simultaneous with the principle; the strummed or broken chords are frequent, while plucked chords are nonexistent. Supposing that the *čeng*, *ying*, *huo* e *t'ong* sounds are simultaneous, we would obtain a chord made up like this: fundamental-fifth-octave or fundamental-fourth-octave (the *čeng* and the *t'ong* have the same pitch).

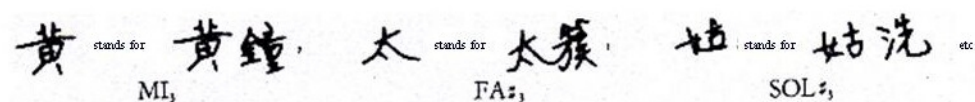
Some Chinese texts indicate the existence of strummed notes;, sometimes of broken chords with the fundamental held. One comment of the *T'čao-man-ku-yue-fu* (“ancient melodies with accompaniment”), quoted by Courant, informs us that “the songs and the mouth organs give a single prolonged sound; the *k'in*, a 7 string psaltery, plays 32 notes, after which the singing and the mouth organ cease. This is what is called *t'čao-man*”.

7) *Musical notation*. There are several systems of notation. The classical systems have the same characteristics:

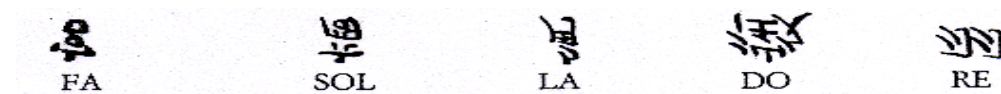
- a) the notes are represented by ideograms which indicate the pitch; absolute pitch for the notation with the names of the *liuh*, relative pitch for the notation with the names of the 5 degrees and for the *kong-č'i* notation;
- b) the characters are written from the top to the bottom, from right to left;
- c) the strong beats are indicated with a particular sign, generally a red coloured circle;
- d) the duration of each note is not indicated in a clear way;
- e) the nuances of the performance are given orally by the director.

a) *Ancient notation*.

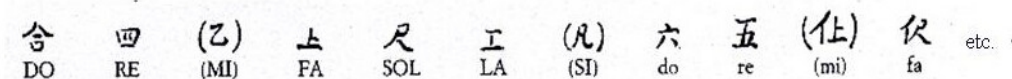
- 1) With the names of the *liuh*, abbreviated in this way:



- 2) With the names of the 5 degrees:



- 3) On the basis of the *kong-č'i*:



The sounds of the western scale are indicatively reported. Only the *liuh* have absolute pitch, which has been changed from dynasty to dynasty. For example, the absolute pitch of the *hoang-čong* varied between MI<sub>3</sub> and FA<sub>3</sub>. The other ideograms indicate, in fact, the degrees of the pentatonic scale and not the sounds of determined pitch.

The bass register is indicated by a point placed under the sign (for example: 合 ) while the high registers are signaled by a key ( 丿 ) placed to the left of the sign (for example: 仕)

4) Notation in tablature<sup>13</sup>: this is used mostly for the *k'in*, a 7 string psaltery, and indicates the string and the fingering for the 2 hands, but it does not give either the duration or the name of the sound itself. For example, the sign 禁 is used for 大 一 抹 桃 六 : 大 indicates the thumb of the right hand, 一 designates point number 1 (there are 13 on the *k'in*), or rather the point in which the thumb of the left hand has to touch the string, 抹 indicates that the string must be plucked by the index finger of the right hand, in the direction of the body 桃 then the index finger of the right hand plucks the string away from the body, and 六 indicates finally the sixth cord and means that the instrumentalist must pluck that string with the index finger of the right hand in the direction of the body, then away from it, while the thumb of the left hand must rest on the first fret.

b) *Modern notation*.

1) With numbers: most of the passages for different instruments have been transcribed with numerical notation, to which several signs have been added that indicate the way to play the instrument:

1	2	3	4	5	6	7	1
DO	RE	MI	FA	SOL	LA	SI	do

for the *C tiao*, the “mode” of Do.

2) With western notation: this system of notation is used mostly in musicology or for new compositions.

In the light of the dating of the supports and of the critical examination of the styles or of the historical references, it has been possible to delineate a chronicle of the sheet music that sees the succession of the instructions for *qin* zither from the VI century on<sup>14</sup>, the tablature for the *p'i-p'a* lute in the X century<sup>15</sup>, the notation according to absolute pitch for singing<sup>16</sup> and the tablature for the *qin*<sup>17</sup> zither in the XII century, and for concluding the notation of Taoist singing in the XIII and XIV centuries<sup>18</sup>. From the tablature for the lute there derived the

<sup>13</sup> Tablature is a very clear and simple system of notation. Generally, the positions which the player must assume on the instrument are reproduced, by means of the graphical reproduction of the fingerboard. In the west, the first tablatures are from the XIV century and were thought up and developed to simplify the reading by the instrumentalist..

<sup>14</sup> “L’orchidea solitaria, sull’aria del Picco roccioso”( *Jieshi diao Youlan*), between 505 and 557

<sup>15</sup> Manoscritti di Dunhuang P. 3808, B. N., Pelliot fund, around 933. The first western tablature for the lute appeared in the *Intavolatura di lauto*, published in Venice in 1507-1508 by O. Petrucci.

<sup>16</sup> Zhao Yansu (edited by), “Gli spartiti di dodici odi estratte dalle sezioni Feng e Ya del Canone dei poemi” ( *Feng Ya shi-er shi pu*), around 1180. The notation of the absolute pitch of sounds appeared in the West in the XI century with the *Micrologus* of Guido d’Arezzo.

<sup>17</sup> Jiang Kui, “Canti del taoista dalla pietra bianca” ( *Baishi dao ren gequ*), around 1195; re-ed. Shanghai, 1924.

<sup>18</sup> “Rituale dei suoni di giada” ( *Yuyin fashi*), juan 1, section 2, included in the edition of 1444 of Magee Boltz, *Neumatic notation in the Taoist Canon and performance practice today*, *ibid.*, “Canone taoista” ( *Daozang*) under number 333. See Jao Tsung-i, *Airs de Touen-houang*, intr., transl. and notes by Paul Demiéville, Paris, CNRS X971, p. 24 (33). Chen Guou, “Studio sull’origine del Canone taoista” ( *Daozang yuanliu kao*), Pechino, Zhonghua shuju, 1963, II, p. 300, date of this ritual of the Song of the North, that is, at the latest, in the X century. See also, Chen Guofu, “Interpretazione della notazione curvilinea dello *Yuyin fashi*: rapporto preliminare” ( *Bei Song Yuyin fashi yin [xian] pu kaoqiao*), in Pen-Yeh Tsao and Daniel P. L. Law, *Studies of*

predominant system, the instrumental notation of the *gongche* type, which was valid for all instruments.

The first synoptic scores for orchestra, which showed, in a detailed way, the parts for each instrument, are the work of Zhu Zaiyu<sup>19</sup>. They show us the execution of imperial ritual songs, accompanied, from the top toward the bottom of the page, of the carillon of *bells*, by the *bofu* chamber, by the *chunbao* taps, by the *qin* zither and by the carillon of *rock* slabs.

The collection “Appendice per strumenti a corda” (*Xiansuo beikao*) of 1814 represents an important stage. It notes, on parallel vertical columns, the individual scores of the lutes, the vielles, the zithers, and for certain passages, the common sheet music for the wind instruments.

At the beginning of the XX century, the Japanese introduced “simplified notation” (*jianpu*). This coded notation had been developed by Jean-Jacques Rousseau<sup>20</sup> in 1746, then perfected by Pierre Galin (1768-1821) and popularized by Aimé Paris and Emile Chev   (1804-64).

After 1949, and mostly after the sixties, the use of the staff was spread progressively.

Here is a practical chart (Table 6) of the correspondence of the notations<sup>21</sup>:

<b>Chev��</b>	1	2	3	4	5	6	7
<b>solmization</b>	do	re	mi	fa	sol	la	si
<b>English</b>	C	D	E	F	G	A	B
<b>“five sounds”</b>	<i>gong</i>	<i>shan</i>	<i>jiao</i>		<i>zhi</i>	<i>yu</i>	
<b><i>gongche</i></b>	<i>shang</i>	<i>che</i>	<i>gong</i>	<i>fan</i>	<i>liu</i>	<i>wu</i>	<i>yi</i>

Chart of the correspondence of the notations  
Table 6

The notation for the *qin* zither is presented under the form of tablature indicating the fingering. With a reference to the open chord, it is generally impossible to know the pitch. The basic chord of the lute, allows us, in general, to deduce the notes from the ancient notation. In neither case does absolute pitch come into play.

The notation *l  l  * designates the absolute pitch fixed in reference to a tuning fork, the *huangzhong*, which is variable according to the period in relation to the imperial decrees. It divides the octave into twelve semitones:

huangzhong	<i>do</i>
dal��	<i>do #</i>
taizu	<i>re</i>
jiazhong	<i>re #</i>
guxian mi	<i>mi</i>
	<i>fa</i>

*Taoist Rituals and Music of Today*, Hong Kong, The Society for Ethnomusicological Research in Hong Kong 1989, pp. 181-217, and Judirh pp. 88-109.

<sup>19</sup> For example, Zhu Zaiyu, *Caoman guyue pu*, 1605, juan 1, f. 22. We note the first clear examples of Western orchestration, le *Sacre Symphonie* di Giovanni Gabrieli, 1597, are contemporaneous.

<sup>20</sup> Jean-Jacques Rousseau, *Dissertation sur la musique*, in *Ecrits sur la musique*, Paris, Stock 1979.

<sup>21</sup> In the “five sounds” system, the modern pronunciation *jiao* substitutes the classical pronunciation *jue*.

zhonglü	
linzhong	<i>fa #</i>
ruibin	<i>sol</i>
nanlü	<i>sol #</i>
yize	<i>la</i>
wuyi	<i>la #</i>
yingzhong	<i>si</i>

It does not seem that today it is possible to translate the names of the notes in a satisfactory way. Instead, the analysis of the names brings out, above and beyond the fundamental “bell” (*zhong*), two series of three notes: three *lü* separated by major thirds, to which correspond three “bells” respectively situated on the second inferior.

As a matter of fact, the *gongche* notation presents a system of seven transcriptions (*system of movable do*). The reference scale is called “scale of the character *shang*” (*shangzi diao*). It has, as its base, the *shang*, which is defined as the second degree of the flute. The name of the other scales is deduced from the placement of their *shang*. The “scale of the character *che*” (*chezi diao*), which has its *shang* in place of the *che* of the “scale of the character *shang*”, is found, therefore, one diatonic degree higher. The only one to be an exception is the scale of the character *wu*, called “scale of the true *gong*” (*zhenggong diao*), where the *gong* is here the first of the “five sounds”.

The writings do not give us much to help in explaining these systems, instead they are easy to collect through musical practice, even if rudimentary. The many local or temporal variants are quickly decipherable and easy to transcribe onto the staff.

#### 8) *The modulations*

The transposition of the melodies preserves the type or aspect, with respect to the intervals, but modifies the absolute pitch. 1 2 3 5 6 remains 1 2 3 5 6, but *do re mi sol la* becomes *fa sol la do re*. “*Do gong diaoshi*” becomes “*fa gong diaoshi*”.

The transformation of the melodies preserves the base note, but changes the aspect. 1 2 3 5 6 becomes 1 2 4 5 6 (we can call it 5 6 1 2 3, the same succession of intervals is present) *Do re mi sol la* becomes *do re fa sol la*. “*Do gong diaoshi*” becomes “*do zhi diaoshi*”. This is called the procedure of “substitution of characters” (*jie zi*).

Transposition and transformation can, of course, get mixed. For example, in the “modal chain transposition” (*lianhua biandiao*), in use in the music for drums and winds in the Northeast, the same melody undergoes five successive transpositions: 1 2 3 5 6 becomes 2 3 5 6 1, then 3 5 6 1 2, 5 6 1 2 3, 6 1 2 3 5, and finally goes back to 1 2 3 5 6.

The problem of the modes is always resolved with practice. The notation calls for the musician to tune and then to play a series of fingerings. The question of a possible tonality or modality does not concern him. It has, instead, stimulated the pen of the theoreticians a lot, who over the centuries have produced a great quantity of tables held by them to be definitive. Tables 3 and 4 combine, for example, five aspects of pentatonism with twelve starting absolute pitches, which give an origin to seventy scales. With a scale of sevens sounds one would obtain in the same way, eighty-four scales. Their study does not teach anything as regards the practice or the principles of composition. The problems posed by the sheet music are clearly simpler than those posed by similar tables. It seems, therefore, absolutely premature to push oneself in a general analysis of the system

of modes. It will take numerous partial studies to arrive at that point. The system of modes of the *Nanyin* possesses, for example, its own nomenclature, just as the *qin* zither possesses its own.

The study of the variants of a single passage turns out to be particularly instructive. It shows us that the same melody in this or that variant can have different conclusions. Is it necessary to conclude that it has changed mode? No, because this would imply that the entire perception is changed with the hearing of the final note. This is absolutely unthinkable. We must admit, then, that the type or the aspect need not be determined on the basis of the final note. The study of the translation of a passage from one genre to another shows that the modal system does not belong to the passage, but rather to the genre in which it is written.

#### 9) *The function of the notations*

The influence of sheet music on the development and on the transmission of music was almost nothing, since the oldest ones were forgotten, set aside, indecipherable, or lost for centuries. The most ancient definition of the five relative pitches (*wu sheng*) and of the twelve semi-tones (*lü lü*), engraved on the bronze bells of the carillon of the Marquis Yi di Zeng in the V century before our era (about 433 B.C.), greatly preceded the notation correctly called melodies. Should we be surprised by the enormous time elapsed between the definition of the pitches and the use of sheet music? Certainly not. India<sup>22</sup> and the Arab world both had, very early on, the availability of the means for noting their music, without ever feeling the need. Who, therefore, felt the need to write and preserve sheet music? The Japanese, limited in their ability to memorise by their short sojourn on the continent, put themselves at the head of the queue amongst those scribes. Their double vassalage to the Tang empire and to Buddhism forced them to find a way to take back, to the other side of the sea, the sacred texts and music. The same men invented the written Japanese alphabet and their musical notation, as shown by an amazing document which includes Sanskrit writing, Chinese, and the first tablature for the flute<sup>23</sup>; a contemporary document of Japanese sheet music of Chinese music older than those of their continental colleagues<sup>24</sup>.

The question<sup>25</sup> of the considerable quantity of sheet music for the *qin* zither still remains. The sociological response, which associates the instrument to the educated class, and therefore to writing, is not sufficient. Ethnomusicology tells us something more. On the one hand, the process of learning the zither, a solo

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<sup>22</sup> Inscription in Pallava-grantha characters from the VII century, see D. R. Widdess, *The Kudumiyàmalai inscription: a source of early Indian music in notation*, «Musica Asiatica», II, 1979, pp. 115-50.

<sup>23</sup> Annen, “Canone del siddham” (*Shittan zo*), 880, Tt. 2702.

<sup>24</sup> Sheet music for lute (*Tempyò biwa-fu*) from 750, (*Fushimi-no-miya hon biwa-fu*) from 838 (copies from 920/921), for five string lute (*Gogen kin-fu*) from 842, for flute (*Hakuga nofue-fu*) from 966, for zither *zheng* (*Ko so-fu*) around 1000. See Jonathan Condit, *Tunes notated in flutetablature from a Japanese source of the tenth century*, «Musica Asiatica» I, 1977. Rembrandt Wolpert, “A ninth-century Sino-Japanese lute-tutor”, «Musica Asiatica» I, 1977, pp. 111-65. Rembrandt Wolpert, *A ninth-century score for five-stringed lute*, «Musica Asiatica», III, 1981, pp. 107-35. Alan Marrett, *Two Tang-music melodies for flute in D. R. Widdess & Rembrandt Wolpert, Music and Tradition, essays presented to Laurence Picken*, Cambridge, Cambridge University Press 1981.

<sup>25</sup> As Laurence Picken observed, *Music from the Tang Court*, Oxford University Press, London, I, pp. 13-4.

instrument at least in its written repertoire, cannot fulfill itself in the normal framework of tradition, on the other hand, evident and unambiguous relationships do not exist between the notes played and the fingering used. This is contrary to all the other instruments, with exception made for the two-sound bells from the distant past and for the lute, even though for this last one the doublings were not very numerous in a standard performance procedure limited to the first position (without position change), as was practiced up until the XVII century. The art of the *qin* is closely tied to the richness of the timbres, allowed by the obtaining of the same pitch on different strings. Very few players, even today, could, like pianists, read a piece sheet music in its real time. The complexity of the instructions, corollary of that of the choices that are effectuated to play a note, implies a slow work of adjustment. It is noted how the new collections which appeared over the centuries sometimes limited themselves to faithfully copying the oldest ones, sometimes instead they presented more elaborate versions, more ornate, which testify to an individual evolution to which the work of writing did not cause anything obvious.

#### 10) *The value of the notations*

Also on the edges of music, sheet music maintains an immense value, supplying an irreplaceable testimony. It confirms the profoundness of repertoires and of practice; their permanence though the centuries. The music of which they conserve a trace reveals a richness and beauty such as to justify all attempts at reconstruction. In 1990, Laurence Picken went to China to work with some professional musicians on the performance of Chinese sheet music preserved in Japan and deciphered by him. After a thousand years, this music will finally have the possibility of being played again. A musical analysis which compares texts and living traditions allows the delineation of the usual imprecision underlined by most of the sheet music, in particular the absence of beats and rhythmic values. In this field, more than elsewhere, music can derive benefit from the impressive competence acquired in the field by current musicians.

### **Rhythm and natural language in China**

If in western music the development of rhythmic language has always been connected to the metre of spoken and poetic language, both the classical quantitative and the modern accentual, in China the relationship between rhythm and natural language has different characteristics.

Chinese civilization is one of the most ancient that has been perpetuated up to our time and its culture presents us with characters of continuity and of specific unities. One of the main factors of the spatial temporal unity is the system of writing which has a continuity of characters that go from the II millennium B.C. up to today. The writing is not of alphabetic character, but is made up of independent characters, each one with its own semantic and phonetic value, with a concrete meaning. Some characters are pictograms, others ideograms, which represent abstract concepts through symbolic representations, while still others have phonetic origins.

Most of the characters are, however, made up of the combination of two elements, one meaningful which indicates the general category of the term and one phonetic which instead is there to indicate, moreover in a more or less exact manner, the phonetic pronunciation. The presence of such a particular form of writing has necessarily influenced the Chinese thinking, culture, and music.

Obviously it is necessary to think about a conception of music, which is different and distant from ours, where the nature of the musical art is correlated to sound, as an expression of transcendent power. This idea that music contains and exceeds sound still today finds its response in standard traditional instrumental practices, such as, for example, the tendency of the psaltery players to continue their vibrato even after the cessation of any audible sound. Music above and beyond the sound (at least the mere experience of the hearable and the hearing), based on complex and articulated connections determined by the relationship between music and the order of the universe – the organization and the structure which manifest themselves in the music are the same ones that regulate all human activity, which therefore represent only the faithful mirror of the harmony of the cosmos. This conception confirms that the human reaction is consequent to nature and brings one to that harmony with nature that pervade all Chinese thought.

At the base of Chinese thought, one places man and the cosmos in a close rhythmic relationship such that both breathe and pulsate in synchronicity pervaded by the same energy. In the west, composers have for centuries imitated nature, instead in the Chinese culture the musician must not imitate anything since music is nature which manifests itself through the human expression of sound. This natural quality which permeates Chinese music, also the traditional music, is testified to by the prevalence of vocality; nothing could be more *natural* than the voice, the place of encounter without mediation (as are the musical instruments) of nature and culture. “*The voice is sound. Sound is the most subtle element of perceptible matter. In the history of each one of us, as in our collective history, it was precisely that, in the beginning, the place of encounter of the universe and of intelligence.*”<sup>26</sup>

A fundamental phenomenon of human sonoric experience, the voice is “primordial sound”, material object, the expression of that desire which does not want to and cannot find completion.

“Even before language had its beginning and it articulated itself in words to transmit messages in the form of verbal statements, the voice had already existed; *it is* as potentiality of meaning and it vibrates that indistinct flow of vitality, that confused push to *wanting to say*, to the *expressing*, that is, to *existing*. Its nature is essentially *physical, corporeal*; it has relationship with *life* and with *death*, with *breath* and with *sound*. It emanates from the same organs which preside over *feeding* and *surviving*”.<sup>27</sup> (Zumthor, 1992, p.23)

The “vocal instrument” can substantially be considered under a double aspect which is synthesizable in the definitions of *spoken* and *sung*. More precisely, this means the relationship between *Voice* (inter-individual code) and *Word* (individual act of the use of the code). In this way two systems of social functioning are distinguished: orality and vocality, where for orality we mean the sense of the voice as vehicle of the message and for vocality everything that is expressed in the functioning of the voice irrespective of the message.

Language and writing are so distant one from the other as to exclude reciprocal revelations. As regards the research in this field, those who have carried it out have been submerged by the richness of an archipelago in which each island represents a world.

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<sup>26</sup> Paul Zumthor, in the Preface to Corrado Bologna, *Flatus Vocis*, Il Mulino, Bologna, 1992

<sup>27</sup> Paul Zumthor, in the Preface to Corrado Bologna, *Flatus Vocis*, Il Mulino, Bologna, 1992, p.23



Instrumental and vocal music today are separate and the study of the first shows us that it has its origins in a text in which only sound had importance, and that it was decisively devoid of any meaning. The authentic relationship between sound and meaning, between oral and written, is expressed, in China, in music.<sup>28</sup>

Listening to the vocal repertoire shows us that there does not exist a universal Chinese way to sing, which transcends the genres, the epochs, and the regions. There does not exist, in the Chinese language, such an intrinsic character to force it to be constantly musical. The marking of this choice was instead a long tradition which tied together the destinies of poetry and music. However, the relationship is not reciprocal and not all Chinese music has its origin in the language.

If “Chinese poetry has never been spoken”<sup>29</sup>, that does not mean that it has only known the use of the “five notes” (*do-re-mi-sol-la*). From the spoken to the sung, certainly all the possible intermediary steps have been developed. The supremacy of the writing of the word had not prevented silent reading from appearing as an aberration, or at least as a limited case in which the sound is dissolved in the silence.

The classical Chinese identifies with a single term (*nian*) both the “reading” and the “reciting out loud”. Modern Chinese says “look at” (*kan*) a book to indicate silent reading. Even the sacred Confucian books, pure symbols of predominance of the literary culture, were recited.

The psalmody of the Buddhist choruses (*fan bai*) produces an *effect* of connectedness similar to the ebb and flow of the sea (*haichao*); both opera and ballet know the alternation of recitative and of song. Some forms of ballet like the “rapid book” (*kuaishu*), carried out with a simple accompaniment of taps, certain songs of the Northeast, cannot be compared, if not to rhythmic speech (*rap*) of black Americans. Even when poetry invents forms (the *fu*) which “are not sung”, it remains oral and pays attention to the trick of timbre or of the pitches, if not even of rhythmic pulsations.

Chinese ideogram writing does not indicate the pronunciation. That can vary without the writing which notes it. The transmission of the meaning of a text is thus assured regardless of the language. Instead, orality makes the sound vulnerable to the slightest interruption or modification. Fortunately the immensity of the country, its subdivision in languages and dialects whose maintenance has been helped by their common writing, have allowed some communities to maintain a much more musical spoken language; from Canton to Amoy, even to Shanghai, much less, without doubt, in the North.

The inability of written Chinese to fix the sounds has as its positive implication the importance of orality, and therefore of music. Not texts but procedures, forms, and styles testify to the ancient and to the authentic. We can still hear alternating songs, improvised in the rice paddies or in the collective farms, similar to those that Marcel Granet (1982) revealed in “Canon of Poems”. We can find educated people able to recite from memory in the ancient style.

Chinese is a monosyllabic language, where the word does not mark gender, nor number, nor tense, nor case, and not even form: *the context will bring the necessary clarifications*, poetry does even less and these ambiguities are totally beautiful. Paul Demiéville demonstrated this masterfully: “The

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<sup>28</sup> Picard-Restagno, op. cit., p.55

<sup>29</sup> Paul Demiéville, *Antologie de la poésie chinoise classique*, Paris, Gallimard, 1962, p.20



monosyllabism forces rhythmic formulations and a metric structure of the syllable, even in daily spoken language.”<sup>30</sup> (Illustration 1)

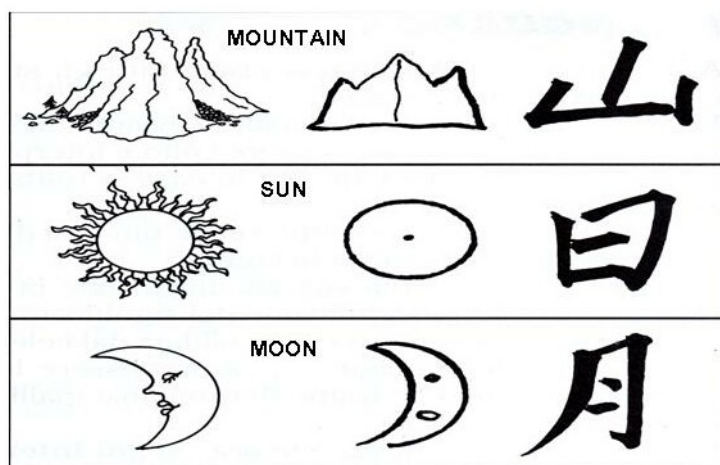


Illustration 1

Yet the regular verses are not the only ones. The strict syllabism (to each syllable its note), although frequent, is not an absolute rule. On the one hand, the juxtaposition of a new text on a pre-existing melody can force the use of empty syllables (our “tra-la-la”) and, on the other hand, this rule is in contradiction with respect to the tones of the language. These last ones, symbolized by different absolute pitches, have, in reality, as a principle characteristic, that of being movements without absolute pitch or subdivision determined by the field of pitches in intervals.

Chinese writing, generally so rich in meaning, possesses its magical characters, the *fu*: the voice has its songs and its incantations, similarly free of meaning and therefore much closer to the sacred. The puff, the groan, the breath, the roar, the grumble, the laugh, and the whistle are other possibilities of the human voice. Each one of these has its own use, its own effectiveness. The language and the words do not belong only to who speaks. The multiplicity of the voice is therefore imposed.

## An aesthetics of sound in China

Music is the substance of the universe, the nature of beings. Union with this substance, being in tune with this nature, this is harmony.<sup>31</sup>

The substance of music for the Chinese resides in the sound. The substance-body (*ti*) is opposed to the function (*yong*) as is nature (*xing*) to passion (*qing*). Music does not have function nor does it express any sentiment. It is equivalent to a resonance (*ganying*), a spontaneous response, air place in movement (*dong*), puff. It is sound.

It is not limited to being noise organised in time. Conditioned by space, it shows itself different in the North and in the South, in the centre and at the borders, static or in movement. It entertains relationships with the language under

<sup>30</sup> Paul Demiéville, *op. cit.*, p.12

<sup>31</sup> Ruan Ji, “Studio sulla musica” (*Yue lun*), around 250. Republished in Ji Liankang, Ji Kang, “Saggio. La musica non conosce tristezza né gioia” (*Ji Kang: Sheng wu ai/e lun*), Beijing, Renmin yinyue 1987, p. 73.

the aspects of the language and of the writings, which in China are radically separate. If music is mainly circumscribed in the time of its execution, memory and the possibility of anticipating its course predetermine this moment. History, the individual and collective cultures interfere at every instant. Ignoring improvisation, as it is practiced in jazz or in Indian music, Chinese music never lowers itself to a “music of the instant”. Memory, repetition, updating, as with the rite – music allows us to relive the past, to render it present. The liturgy makes particular use of this power of structuring time.

A general distinction often happens in Chinese thought. While the rites have the function of distinguishing between what is inferior and what is superior, music must bring men together, establish and manifest harmony. The West assigns the first function to the sacred, the second to religion. In China it is possible in the same way to put forward a ritualized sacredness, Confucianism, a religion in the real sense, expression of the communities, which is called popular religion or “paganism”.<sup>32</sup> Music covers the same role as this last one, in this consists its truth.<sup>33</sup>

## Time in China

Ancient China and new China follow one another and they oppose one another and, in turn, each one of them can embody the good, the positive. In Chinese thought nothing spontaneously marks time, which is neither fluid, nor articulated, no irreversible. It can be written and rewritten. It is a human task to construct a provisional model of it for the ritual. Man reacts to this model and as a consequence reacts to time. He can attempt to fix it by means of the alternation of the drum and the taps, of the bell and the drum. This does not prevent it from changing. The musical consequences are immense: the time of the ritual, of the music, require above all an overture, under the form of a prelude, as invitation to the spirits, which cannot have a place before the sacred area is prepared. Shells, trumpets, bells, woods, and drums being struck. At the end, it will be necessary to accompany the invited again, the spirits, clear out the area, the airs<sup>34</sup>.

The coda (*weisheng*), which is very ordinary, will still not take on the form of a thematic recapitulation. Taken on loan from a small repertoire of models, it allows the abandoning of the particular aspects of a certain rite, of a certain suite, of a certain composition, to re-enter into the general. The closed forms, fixed, can always be combined, mixed, by means of insertions, internal repetitions, and elisions. The overture-summary, the ex position-variation, appear as truly very simple forms, which are tied to a time that is truly very linear, to find their place here. Only a complex and refined analysis allows the unveiling of the whole presentation of the main theme, hidden in the performance or sometimes even definitely omitted. The entire spectacle will form a whole.

The modern concert opens and finishes systematically with an orchestral passage and the western structure allegro-adagio-allegro has perhaps inspired this form, in itself not traditional, but the fact itself is meaningful for considering the concert on the whole as a single event, regardless of the place, of the public, or of the instruments.

The constant presence of the past has consequences for the repertoires and for their structures. Numerous genres present “Eight great pieces”, such as the *Jiangnan sizhu* or the suites of the Shanxi, and many function on a combination of

<sup>32</sup> According to the definition of Marc Augé, *Génie dupaganisme*, Paris, Gallimard 1982.

<sup>33</sup> François Picard–Enzo Restagno, *op. cit.* pp. 7-8

<sup>34</sup> Here Picard plays with the assonance between *l'aire, les airs*. [N.d.T.]

timbres (*qupai*) and of formulas. The overlapping of tempos which follow each other at different speeds eliminates the hope of considering the history of Chinese music as a succession of events<sup>35</sup>.

It is impressive to note how music, the same as history, does not let itself be attributed to a linear development. The progressive acceleration of time, practices with much frequency, constantly modifies the isochronous time, marked by the alternation of the tap and the drum. Time lost (*sanban*), fluid (*liushuiban*), slow (*manban*), average (*zhongban*), rapid (*kuaiban*) follow each other and overlap each other and the interest is constantly taken back to the art of transition and of its preparation.

As regards the instruments, they overlap and counter, at will, their different sound densities, from the placidity of the three string lute and the mouth organ to the virtuosity of the *p'i-p'a* lute or the *dizi* flute. Rhythmic impulse, time, phrase, and gesture coexist so well, diversified and mixed at the same time, to the point of a transcription of values (minims, crotchets, quaver...) with bars of the beat, which is always possible, yet always turns out to be false.

## From the temple to the Chinese concert

The arts of the noblemen in service to the ancient court were divided into two categories: the civil virtues (*wen*), like diplomacy and the military virtues (*wu*), like strategy<sup>36</sup>. We find these categories in the repertoires of the *p'i-p'a* lute and of *Jiangnan sizhu* as in the scenes of the Beijing Opera, where they designate respectively the strings and the woods and the percussion. The opposition of timbres, of speeds, opposition of meaning, but also artificial opposition, conventional, within the same genre that is fed by this complementarity. Still more than “civil” and “military”, the opposition between subtle, refined (*xi*) and coarse, rough (*cu*) comes from a classificatory will.

The drums of Xi'an (*Xi'an guyue*) rather than measuring the “weight” of the music, preferred defining it by means of a more functional attribute, correlated to the position of the musician: seated (*zuoyue*) or walking (*xingyue*). This more pertinent and more eloquent contrast corresponds to two different moments, two relationships with the space. In no way extra-musical, but instead intimately connected to the music, it refers to the modality of execution and to the listening conditions, even if in part it conceals the distinctions between instruments.

The classification in groups of winds and percussion instruments *chuida* or *guchui*, groups of string or wind instruments *sizhu* and groups of string instruments *xiansuo*, as comfortable as it is, does not tell us much about the history of the genres, their sociological aspect, or the relative modalities of elaboration or transmission. Certainly, it allows us an ordering and refers to the ancient categories of the Tang, which have now become unusual, of ceremonial music (*yayue*), military (*guchui*), of the Four Barbarians (*siyi*), of the women (*niiyue*), all open and mobile categories.

The only analytical and non descriptive classification, able to testify to the various speeds of evolution, modalities of transmission, and conditions of execution is that which distinguishes the liturgical, para-liturgical, and profane sectors. It only allows us to evaluate the contributions supplied to the work of the ritual, to place the art of the *qin* zither in a different perspective from that of a

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<sup>35</sup> See the editorial *Tentons l'expérience*, «Annales», Nov.-Dec.1989, Paris, Armand Colin, pp.1318-9.

<sup>36</sup> Jacques Gernet cit., p. 87.

splendid isolation. It avoids the sterility of the theories which speak of a diffusion from the court to the people and gives testimony of a condition, that of live music.

### 1) Liturgical music

The beauty and the authenticity of the liturgical music is not tied so much to its spiritual essence as to the slow elaboration, to the strictness of its transmission, to the substantial indifference which it shows compared to the modes. The repertoire of the cults, mainly unified in all of the country for about four centuries, is the adaptation to forms of great diversity. This meant that the music remained essentially local, tied to a strong regional character. The three fundamental elements, voice, percussion, and melodic instruments, when they are united, acquire a strength that has little to envy of the grandest forms of opera.

### 2) The three religions

The only and true religion of the Chinese has no name. It can be called paganism, cult of the ancestors. It expresses a particular way of believing in a time which renews itself, in a transformation of time and of matter.

Inspiring each other, reciprocally imitating and fighting amongst themselves, the religions and their priests, have evolved over more than a thousand years. Some have tried to several times to integrate them into a single doctrinal set, but most of the Chinese, making exception for the forms exclusive of faith, refer to one another according to the various recurrences: giving birth, funerals, exorcisms, interior growth, longevity, cult of ancestors, celebration of the order, and celebration of the culture.

The beliefs notwithstanding, systems and practices separate Confucianism, Taoism and Buddhism, these three religions are lived by the vast majority of Chinese as three aspects, three instances of a single world vision, of man and of society, which have their origin in the same Chinese thought; thought of the harmony of man with nature, of mobility, of the continuous mutation of values and matter.

Division and harmony, rite and music, these form a couple of complementary organisations so diverse and inseparable like shadow and light, male and female, the sun and the moon, the Ying and the Yang. Forever and in every place, the ritual, the ceremony, separates and distinguishes, establishes hierarchies, assigns to each person (king, princes, courtesans, merchants, people) his place, determines the preceding time and that which follows, traces the border between inside and outside, sacred and profane, the specialist officiant, chosen ordained, and the secular, anonymous and collective spectator. Forever and in every place, music reunifies the opposites, high and low, deaf and vibrant, short and long, fixed notes and movable sounds, tight rhythm and fluctuating inspiration, like so reunite voice and percussion, text and song, meaning and sound, right and left, in front of and behind, reflecting itself on the walls, passing through the walls, overcoming distances, music which is not born either from heaven or from the earth, but from their union, which passes through man, better yet through the assembly of men reunited.

Still more than the flags and the walls, than the altars and the statues which mark the space, must mark the time of the ritual, the time of collectivity. However, in its own way, always different, always varied, it also marks the distinctions, the rites, and the places.

So it is for the bowl of the beggar which, having become a sounding bell, confirms the Indian origin of Buddhism. So it is for the carillon and for the union of string instruments and winds, for the complementarity of the sonorous materials, wood and leather, silk and bamboo, which refer to the ancient ceremonies. So it is for the mysterious dances, the inspired writings, the proclamations in incomprehensible languages that show the power exercised by the Taoist masters over the objects, the spirits, and the world.

However, the music of the Taoist, Confucian, and Buddhist rituals, ceremonies, and assemblies are carried out by men who live here or elsewhere, in society and who are profoundly rooted, beyond the great unities, in the multiple local cultures, inseparable from the popular culture. Instruments, groups, airs, and rhythms resound from Shanghai or from Beijing, from the coast or from the mountain, from the plain or from the desert.

### **Living traditions**

The comparison with the concreteness of the sheet music has highlighted the fact that the evolution of music in China was carried out through procedures of different natures and according to different speeds. The analysis of its transmission over time and space reveals the central role of the oral tradition in an environment of great homogeneity, as anthropology explains, which considers the religion of the people as the “only institution in the country that is truly popular”.<sup>37</sup> The slowness with which this environment evolves, despite moments of crisis like foreign invasions or the unification, around 1600, of the Buddhist rituals explains the extraordinary longevity of its traditions.

The autonomy of music within the historical and social phenomena constitutes another of these processes. The adaptation to one genre or to one particular instrument will obey the proper musical rules of the genre or this instrument; rules which prescribe form, timbre, scales, extensions, orchestrations and rhythms. This process obtains the result of making the same motif unrecognisable. It will still maintain for the analyst, often also for the musician, an original identity. This incessant work of adaptation has as its corollary the absence of improvisation or of creation. It still does not have to do with the real work of composition, according to the double meaning of “put together” and “do with”. The nature of musical techniques does not appear then more complex in one cultural sphere (courtesans, educated people, professional musicians, farmer) than in another. These different environments are characterised exclusively by their speed of evolution.

### **The role of music in Chinese society**

Music occupies a privileged position in the written traditions; all of which makes us think that the oldest book handed down, the “Canon of Poetry” (*Shijing*), consists of a compilation of songs, some of which go back to the IX century before our era. The musical instruments (*yuequi*) were part of the most prestigious signs of distinction, as is witnessed by their presents in the tomb of a prominent

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<sup>37</sup> Kristofer Schipper, *La religion traditionnelle, un contre-pouvoir*, in Pierre Gentelle (edited by) in *L'Etat de la Chine*, Paris, La Découverte 1989, p. 268.

provincial figure<sup>38</sup>, amongst his most precious assets: women and talismen<sup>39</sup> (*qi*). The official culture of ancient China gives great importance to music, since it got to the point of dedicating a classic work to it, the “Memorial of Music” (*Yueji*). These traditions are found in the first dictionaries, *Erya* and *Guangya*, which place music (*yue*) between the talismen (*qi*) and heaven and earth (*tian e di*).

In the X century the entirety of the activities “under the discipline of the imperial seal (*Taiping yulan*) includes a music section (*yue*), which is after the section dedicated to man (*ren*), to the rites (*liyi*) and which precedes literature (*wen*) and study (*xue*).”<sup>40</sup>

## Chinese opera

Born from the fusion of the rites of exorcism and the festival dances, being able to assimilate the inheritance of Indian theatre and absorb its tricks, Chinese opera, a set of local forms spread throughout the whole continent, fruit moreover of the work of the educated while waiting for work, shows that there exist, far from the western *bel canto*, refined and popular forms, at the same time able to combine music, body, and space. Art of the spectacle, of emotion, of virtuosity, Chinese opera requires its participants qualities that are difficult to find in a single actor: voice, dramatic expression, acrobatic gifts. Its three secrets are: “interpret the passage, interpret the character, interpret the feelings”. In the course of the very rigorous apprenticeship, begun at the most tender of ages, the novices simultaneously develop their own technique and their own repertoire, under the baton of the master, matured in the business, and with his character forged from the incredible atmosphere of diffuse competition before the Liberation, amongst the itinerant companies, if not to say roaming. It was necessary to show oneself to be the best, or leave, because this art form always lived in symbiosis with a public which was less eager for novelty than for excellence, custodian of tradition, as ready to recognize the genius innovator as to reject the less gifted imitator.

At the sound of the percussion (drums, cymbals, and certainly the famous gong) the company defined the space and the event, embattled and bent under the pressure of the feelings, this very intense energy found its release in the voice, very acute or tonal, mocking or solemn, mutable between word and song, active in action or as suspended in the air, wrapped in the sinuosity of the two string *vielle*, rendered majestic by the oboes in the military scenes or the court.

Chinese opera is a code, with the tricks and gestures of its actors, its apparatus and its voices, and it reveals itself only when it is represented, made theatre-like, transformed into a spectacle. In this way it becomes immediately accessible to whomever has ears, eyes, and a heart. Game of love and shrewdness, mirror of customs, of intrigue and of courage, the action immediately joins itself to the universal.

However, the connoisseur, even if he appreciates the plot, will evaluate overall the qualities of who the actor-singer, inheritor of the art of the marionettes, will know how to demonstrate, overcoming the limits of his own role: young prima donna or ‘prima actor’, young male or female warrior, old man or clown.

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<sup>38</sup> The Marquis Yi of Zeng; see Alain Thote, *Une tombe princière chinoise du i siècle avant notre ère*, in «Académie des inscriptions & belles-lettres, Comptes rendus des séances de l'année 1986, avril-juin», Paris, 1986, pp. 393-413.

<sup>39</sup> *Qi* means “utensil”, but Granet showed that in ancient times *Xa* parol\ had the value “talismano”. See Marcel Granet, *Danses et légendes de la Chine ancienne*, Paris, PUF 1959, p.134.

<sup>40</sup> François Picard–Enzo Restagno, *op. cit.* pp. 8-9

An entire typology pre-set as in the opera of Verdi or in the comedy of Moliere, a typology that, like these great forms, best expresses itself in a company of actors, a perpetually boiling organism, which lives on exchanges and acquired contrasts, yet controlled.

One who loves the Beijing Opera reminds us more of the western opera maniac than of the theatre fanatic. A closed repertoire and one known by the spectators, the prominence in which are placed the first parts, placement on the second level of the production and of the librettists, the practice of the recital of the favourite arias, good service of the groups and classification of the singers based on their roles; these are the many common points between Chinese opera and western opera. Here, as there, one goes to listen, before watching. The great difference, of notable importance, is the absence of the composer as signatory.

As with Wagner, Chinese opera is a mosaic of loans, from the popular songs to the military fanfares, from instrumental groups to the ballets, to the singing storytellers, to street art and travelling theatres, and finally to the rituals. The demonstrations of the martial arts seem to have had a preponderant influence, since two terms for the opera, *xi* and *ju*, are written with the radicals one which means halberd and the other knife. As a matter of fact, the most theatrical part, the most spectacular of the Taoist rituals is the battle of the master against the demon which, when subdued, will become a beneficent god on the earth.

However *Kunju*, “the violence of Kunshan”, is also synonymous with *Kunqu*, “the ballet of the Kunshan”.

In ancient times, it was the itinerant companies that performer on request on the occasion of specific rituals of the liturgical calendar and of exceptional events (drought, famine), tied to family or community life (benediction of a place). The absorption of the great companies into the official structure brought about the reserving of these intervention for the lightest forms of the theatre of shadows and or marionettes.

The talk about the actors<sup>41</sup> reveals the internal hierarchy which every representation must respect: above all the word, then the song, the action, and finally the silence. The word is divided in spoken and sung, the music in vocal and instrumental, the action in movement of the hands, of the eyes, of the body, and of the feet.

There are eight passions which must be expressed: joy, anger, sadness, pleasure, anxiety, impatience, displeasure, and melancholy. The “four countenances” are the imbecile, the spoiled young person, the madman, and the idiot.

“Without hands there is no gesture, with the mouth there is no song”. The technique of the song is based on the study of the “five points of articulation of the tongue” and of the “four respirations”. However, it is also necessary to master the modes, the pulsations, and the rhythms which is not easy when you must combine singing, dancing, and action. Both in the opera of Sichuan and that in Beijing, the musicality of the singing is learned with the study of the genre considered as classical, the *Kunqu*.

Chinese opera is generally divided into two great genres according to the material used. Either rhythmic modes are used as in the Opera of Beijing, and they are the so-called *pihuang* operas, from the names of the two main modes *xzpi* and *erhuang*, or one attains to a very rich repertoire of “timbres” (or pre-established

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<sup>41</sup> A recurring proverb in the sphere of the Sichuan opera.

arias) on which new words are placed, and this is the most ancient form and certainly the richest both from the emotive and musical points of view.

So, the Kunqu, which dates back to the XIV century of the Kunshan in the Jiangsu, includes seven diatonic scales; that is, seventeen tones subdivided into four modes. This numbers a thousand timbres, amongst which 335 are airs of the Yuanqu (theatrical airs of the Mongol age) and 543 of Nanqu (airs of the theatre of the South). Extension, force, rhythm, and instrumentation, under the Ming, distinguished the airs of the North (with the oboes) from those of the South, accompanied a groups of string instruments *xiansuo*. Under the Qing, the group included a flat drum with a castanet *guban*, a three sting lute *xianzi*, a traverse flute *di* and a mouth organ *sheng*.

A major form like the opera of the Sichuan gathers five forms of singing, which, before the Revolution of 1911, were the exclusive property of different companies: one genre “of timbres”, the Gaoqiang, where the percussion, the oboes and a chorus in the wings accompanied the voice; another genre “of timbres”, the Kunqiang, inheritance of the refined Kunqu, where the traverse flute doubles the voice; a genre of rhythmic modes, derived from the Beijing Opera, the Hunqin, which draws its name from the two string vielle; the Tanxi, a variant of the Bangzi opera or “theatre with taps” of the Hebei, and the Dengxi or “theatre of the lanterns”, a popular local form.

Three characteristic and well differentiated musical styles permit us to recall equally distinct theatrical atmospheres: a first style for the scene imprinted with cheerfulness, vivacity, or passing discomfort; a second style for the imploring or contemplative behaviours; and a third, finally for desperation and anguish formed the raw material for the musical system of the opera. In this way, the different situations were associated with established, more or less conventional, motifs, whose function can be compared to that of the *leitmotiv*, the guiding, Wagnerian, theme. As in the case of the silent movies and that of the primordial ones with sound, these melodic formulas, true musical stereotypes, were available to any musician who intended to evoke determined types of emotions which recur in many melodramatic plots. As a consequence, it was not difficult to find, in a great number of operas, the same motifs, which allowed the casual spectator, who did not know the poetic text, to identify himself without problems in the emotive context of the opera.

All of this should not make us think of Chinese opera as a musically banal product. No Chinese person goes to ‘see’ the opera, even if the spectacle is full of dances and acrobatic exhibitions, but rather to ‘listen to’ the opera, for its literary value and because the music and the singing always constitute the centre of major interest.

All the scenes begin with the “overtures” of percussion instruments. Even the “recitatives” are usually accompanied by percussive performances. In the “arias”, instead, the melodic instruments, flutes, bowed and plucked instruments, accompany the singing in unison or at intervals of fourths and fifths. The aria always concludes with the clash of cymbals.

The vocal quality of the signing depends in great measure on the role of the character represented. The male parts require singing characterized by a rigid strident falsetto, while the female ones are often imposed on a characteristic intense and nasal register.

Here are some examples of the melodic formulas which recur in Chinese opera:



**anger, desperation, conspiracy**



**argument between lovers**



**joy, pleasure, libation**



In our times, the opera is now the only genre in which it is possible to find ancient Chinese music. Today, in fact, China boasts about prestigious “conservatories” from which graduate a growing number of courageous interpreters of western music, while those who dedicate themselves to the traditional singing and instruments are always rarer.

## **Western music**

### *1. Rhythm and tempo: generic meaning of the two terms*

The origin of the rhythmic phenomenon, as a primordial and experienced human fact, is tied to the comparison of elements in equal or unequal proportions in time. Such comparison give origin to the common rhythm, that can be directly lived or contemplated. From the discovery of the rhythmic reality, inherent in the instability of things, the typical (unambiguous) rhythms take form, fruit of “incidentals” (objective) and “accidentals” (psychological). The rhythmic perception experienced, in virtue of man’s ability to observe externally and internally, has had two results: one in quantitative rhythm, or diastematic; the other in the rhythm-symbol. In both cases, one finds himself before a musical phenomenon.<sup>42</sup>

The term “rhythm”, of Greek origin, translated by the Romans with *numerus*, indicates the action of measuring with precision. From this, its relevance with music, is born the correlativity with the term “tempo”, from the Latin *tempus* and with the term space, from the Latin *spatium*. In the first case, the term “rhythm” refers to the “arts in movement” (music, poetry, dance) and in the second case the rhythm is in the habit of calling itself “symmetry”. Therefore, the term “rhythm” is correlated to “tempo” (as when we confirm that the 2 elements

<sup>42</sup> Clemente Terni, item *Ritmo e Tempo* in DEUMM (Dizionario Enciclopedico Universale della Musica e dei Musicisti), UTET, *Il Lessico*, vol. IV p.105

which constitute the essence of music are rhythm and sound), while the term “symmetry” is its “space”. Also in music we can talk about symmetry, however only referring to the compositional fact both of the particular (aside, semi-phrase, phrase, period), and of the form in general (sonata tempo, symphony tempo, dance, suite, symphony, sonata) in relationship to the elements that make them up.<sup>43</sup>

Rhythm can be natural and artificial. The first is found in nature, as everyone can observe without difficulty (the constant falling of a drop, the wind, the movement of the waves on the sea, etc.). The second was invented by man to express himself with poetry, music and dance, that is, for the so-called arts in movement. Artificial rhythm, created therefore by man, can be divided into 2 great systems: the one of free rhythm and that of measured rhythm. The difference which passes between the 2 systems consists in this: while in the first the articulation is actuated by means of a syllable, short  $\square$  and long  $\text{—}$  (terminology and signs given by Greek and Latin metrics) and the rhythms are formed by addition of the unit of measure, in the second the articulation is produced by the weak and strong accents and the rhythms are formed by *division* and *subdivision* of the unit.

It is not easy to establish the chronology of the 2 systems, even limiting ourselves only to Europe and the Mediterranean basin. In general, it is maintained that first the system of free rhythm was used, but, judging from the conclusions which are offered us by the musical ethnologists, it seems that the 2 systems were practiced contemporaneously.

The essential elements of rhythm are the measure and the movement. The measure, which originally was called “first tempo” and that in poly-vocal music identifies itself with the denominator of a fraction of the unit, is half articulating. Movement, instead, has the function of characterising the expression. The term “rhythm”, taken in a universal sense, can be defined as: articulation of *time* in general; or, as the famous Greek musical theorist Philosseno said: order of the *times*. In this sense, the term “rhythm” is similar to the term “metre”. The 2 terms are distinguished, however, in practice because, while the metres are verses to recite, obliged to isochrony, rhythms, instead, are lyrical elements not necessarily under the law of isochronisms and dependent instead on the movement of the agogic. Through the *tempos* one always speaks of the distinction that there is between *rhythm* and *metre*.

In music, rhythm is the measure of the *sonorous time*, and therefore, in relationship to the user subject, the personal sonorous experience of time. The measure, however, supposes the number and the number certain relationships. The numerical relationship produces rhythmic formulas that can be or not be constant. On these depends the articulation, which can verify itself in the sphere of even, uneven, or mixed quantities. The even and uneven ones can produce a rhythm of beat.

Rhythmic clarity is given by the clarity of measure, which can be obtained by addition or by division. In the ancient musical documents, up to the XVI century, that were normally called *De Musica*, it was the habit to divide the subject into 2 parts. The first dealt with everything that referred to sound, to its

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<sup>43</sup> Galante D., *Mathematics, Physics and Music, to interpretate didactic situation in secondary school*, “Quaderni di ricerca in didattica” edited by G.R.I.M Palermo, quaderno 17, supplemento 4, 2007, pp.1-203

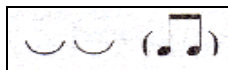
division and to its articulation. Instead, the second dealt with rhythm and of how the musical rhythm differed from that of the oratory and poetic ones. While these last 2 needed the word in order to manifest itself, the first could do without it. Such an undefined meaning, almost incorporeal, of musical rhythm saw to it that, through different processes, it assimilated with the term “tempo” and, that is, with the universal. It is enough to think of the identity of meaning of the phrases “go by rhythm” and “go by tempo”, “feel the rhythm” and “feel the time”, “binary rhythm and trinary rhythm”, which is equivalent to “binary tempo and trinary tempo”.

## 2. Origin, compositional and formal value of rhythm and tempo in the system of free rhythm

The system of free rhythm is based on the unit of indivisible movement which the Greeks called *tempo*. The term “tempo”, passing from the universal meaning to the specific, thus becomes synonymous to measure of the movement and of rest, as Aristide Quintiliano tells us. The unit of movement, also called *first tempo*, is indivisible and also the shortest of all. Such *quantity* was described by Aristoxenus when he said that the “first tempo” could not be divided in any other rhythmic manner; not in 2 syllables, nor 2 sounds, nor in 2 dance steps. The “first tempo” can add to itself and therefore we have *composite tempo*. Joining simple and composite tempos one has the foot, whose parts are essentially the *arsis* and the *thesis*, which in their alternating determine the articulation of it. The terms “*arsis*” and “*thesis*” can be assimilated to “up” and “down”.

### A) Foot of 2 first tempos

Pyrrhic

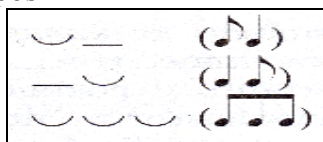


### B) Foot of 2 first tempos

Iamb

Trochee

Tribrach



### C) Foot of 4 first tempos

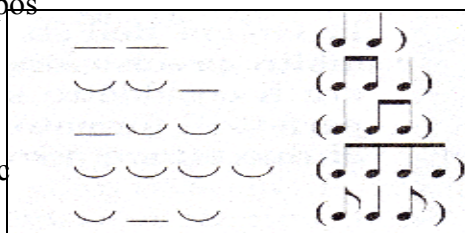
Spondee

Anapaest

Dactyl

Proceleusmatic

Amphibrach



Another element of musical rhythm is the *empty tempo*, today rest which serves to indicate silences. Such silences or rests vary in value.

If, at first, music depends on poetry, or rather on poetic metrics, then after, the term “rhythm” goes on to assume more musical meaning. This, up to the point of referring not only to the articulation of the specific, but also of the whole, taking on a formal sense. We have therefore a formal rhythm of musical character. An example of this is the choral construction of Stesicoro: *strophe-antistrophe-epode*.

The free rhythm practiced by the Greeks and Romans has arrived up to our time by means of the chant practiced by the catholic church and, that is, Gregorian chant.

Starting from the VIII century A.D., from the juxtaposition and the alternating of acute and grave accents were born the neumes, which in their turn, presented themselves in binary or trinary groups characterised the rhythm of Gregorian chant interpreted in free rhythm.

As regards rhythm from a grammatical and syntactical point of view, more *neumes* form a *motif*, more *motifs* a *member* and more *members* a *period*. It is at this point that the term “symmetry” can become synonymous with “formal rhythm”.

### *3. Origin, compositional and formal value of rhythm and tempo in the system of measured rhythm.*

Measured rhythm, or rather subject to beat, as we have said, is made up of elements formed by the division of the unit and not by addition; precisely the contrary of what happens in free rhythm. One cannot support a succession of the use of the 2 rhythmic systems, especially on the basis of the latest studies of musical ethnology (such a succession perhaps can be acknowledged in the Mediterranean area and in part the European), but it is necessary to make a distinction. There is a measured rhythm and a subject to beat, and therefore its symbolic exteriorisation of an instinctive character in service mostly of the dance, of the rites, and of work and there is a measured rhythm which is completely rational, raised up and developed in the service of instrumental music in Europe (starting from the XIII century). In the first case we have measured rhythms called spontaneous, that are almost always tied to a symbolic meaning and which never separate themselves from poetry and dance.

Rhythms receive their own characterisation both from the language, and from the instruments used and above all from the aim for which they are created. There are, in this way, rhythms of the harvest peoples, rhythms of the hunter peoples, rhythms of the shepherd peoples, and rhythms of the agricultural peoples. Such rhythmic exteriorization (that of measured rhythm of an instinctive character) finds its greatest expression in African poly-rhythm.

In Europe, the development of polyphony, with the diversification of melodic lines and the rhythmic autonomy of the parts, brings with it the necessity of identifying a musical semiography which is able to specify the duration of the sounds. The first passage from the system of free rhythm to the system of measured rhythm came about with the school of *Notre-Dame* between the end of VII and the middle of the XIII centuries through the system of rhythmic modes, which based its principles of its own articulation and of its own value above those of the feet of the Greco-Latin metrics: iambic mode, trocheean, dactyl, etc. The articulation therefore is based on the short and the long, starting from the concept of division and not of addition and changing therefore the meaning of the classic feet. The long one, however, was considered perfect only if it was worth 3 tempos (that for symbolic reasons in reference to the Trinitarian principle of God) and not 2 as in Greco-Latin metrics, and so it had a relative value according to the place it occupied. This randomness of value of the short one brought about the rise of the whole note, which, for the principle of rhythmic perfection and imperfection was called *proportional*. From here, the evolution of musical rhythmic writing in the modern sense had its origin; it is worth saying by subdivision of the unit and not by addition. For one principle which does not need to be demonstrated, since its

subdivision had begun, the trinary tempo lost its own supremacy, and the prevailing of binary tempo encouraged the subdivision. These various stages in the division of the unit were called: modes for the division of the longs into breves, tempos for the division of the breves into semi-breves, and prolation for the division of the semi-breves in minims. Modes and tempos were called perfect if they were trinary (always for symbolic reasons) and imperfect if binary. Prolation was instead called major and minor.

The elements that form the structure of *measured rhythms* are: pulsation, movement, measure or beat and tempo, and the organisation of the durations and we now see each of these elements together with its function in rhythm and in music.<sup>44</sup>

A) *Pulsation*. This is understood as a succession of regular beats, called *tempos*, of identical duration. Classical *musical pulsation* is that which is generated, for example, by the *metronome*. It gives the measure of the *movement*, slow or fast, and offers at the same time a stable base for all the possible rhythmic inventions. In our musical practice, rhythm has its foundation in the pulsation, an indispensable coordinating element of any musical performance. It can be effectively articulated with the appropriate instruments, the percussion in popular and light music, or implied, and, that is, mentally articulated as in most cultured music. The duration of the sounds is calculated in a number of beats, or *tempos*: one, two, three, four and more *tempos*; not only, but also in its fractions: half time, quarter time and so on. In this way, a group of performers is able to play in perfect synchronization, referring to a pre-established *pulsation*.

B) *Movement*. Different from that of a clock, *musical pulsation* can be slow, moderate, fast, and very fast. The different speed of the pulsation takes the name of movement and it is one of the expressive elements of rhythm and therefore of music itself. A certain motif carried out with slow movement takes on a solemn character, serious or even sad which, however, can radically transform itself into gleeful, joking, or excited if carried out with lively movement. In order of growing speed the different *movements* can be divided into three groups:  
*slow movements*: Largo - Adagio - Grave - Lento - Larghetto;  
*moderate movements*: Moderato - Andante - Andantino - Sostenuto - Mosso;  
*fast movements*: Allegro - Presto - Vivace.

*Movement* is usually indicated at the beginning of the composition, with the metronomic number (for reasons of precision). In some cases, for the specific needs of the interpretation, the composer leaves it to the discretion of the performer, placing the indication *a piacere* or *ad libitum*. It is a good idea to remember that every good musical performance is always full of minor, barely perceptible, variations of *movement*: retards, holds, accelerations, as in spoken language which confer on it its elastic and expressive performance made of rests and reprises, of impulses and hesitations. Only in exceptional cases does rhythm maintain a rigorously chronometric *pulsation*. For this reason, in the course of the performance, the initial movement can be modified according to the intentions of the composer who, in the desired points, places beside the staff one of the following indications: *rallentando*, *ritardando*, *diminuendo*, *meno mosso*, *calando*, *morendo*, when he intends to slow down the initial movement; *stringendo*, *incalzando*, *accelerando*, *più mosso*, when he wants to speed it up. To return to the initial *movement* it returns to the indication *a tempo*. The movements and their varying of speed constitute the agogics which, together with dynamics

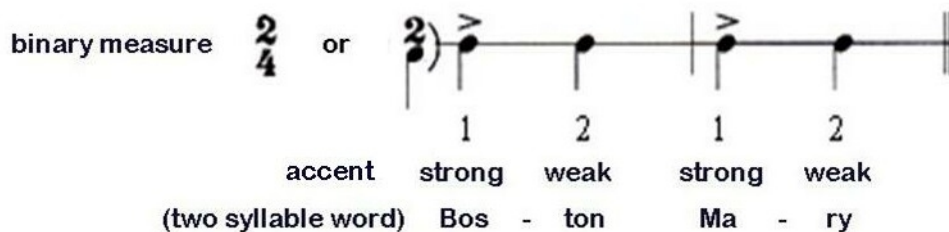
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<sup>44</sup> Romano Becatti, *Nella Musica*, Fabbri Editori, Milan, 1997, vol. I, pp. 53-69

(which have to do with the intensity of the sound), is a basic element for the expressive character of the musical discourse.

C) The *measure* or *beat*. A simple pulsation can become *measured rhythm* having available, with a certain order, some *accents* on determined *tempos*. The accents are a primary rhythmic element also in spoken language. As a matter of fact, when we speak, we do not pronounce the syllables in a uniform way, but to some we give greater force, we *accent* them and to others no. Doing this, each word *displays* its own unmistakable *rhythm* which contributes to its understanding. Moving the accent from one syllable to another means altering the rhythm of the word and, in most cases, even rendering it less comprehensible, while in music it is possible to move the accent using the procedure of syncopation and it serves to create tension.<sup>45</sup> *Measured rhythm*, in its different forms, is above all founded on the disposition of the *accents*. A rhythm is called *binary* when it has an accent every two tempos. It is called *trinary* when it has an accent every 3 tempos and *quaternary* when it has an accent every 4 tempos. The original pulsation thus turns out to be subdivided in many equal “rhythmic cells”, which in the first case are 2 in the second 3, and in the third 4 *tempos*. These elementary rhythmic cells take the name of *measures* or *beats*. Each of these begins in correspondence with the accent, called the strong accent or strong tempo. They are indicated with two vertical bars which contain the relative tempos, 2, 3, 4, according to the type of rhythm. In practice, the *strong accent* is not indicated, being understood that it always falls on the first *tempo* of each measure. The word *beat* is derived from the expression *beat time* which means exactly, highlighting the periodicity of the rhythmic accents together with the speed and the regularity of the pulsation.

The relationship with verbal language is very strong because the number of the tempos (or pulses) and the disposition of the accents of each beat is in close symmetric relationship and with the number of syllables and of the accents of the different words. In singing, the strong accent of the measure and that of the word must always coincide. In particular, the beat of the binary rhythm coincides with the two syllable word; the beat of trinary rhythm is the equivalent of a three syllable word and the beat of quaternary is identical to the four syllable word. (Illustration 2).



<sup>45</sup> One speaks of *syncopation* when a sound begins on a weak tempo extending itself on strong tempo which follows it immediately. The effect produced by the *syncopation* is a displacement of the rhythmic accent. In this way a lag in the regularity of the beat resulting in a contrast charged with dynamism and tension. The western repertoire, both sacred and profane, both vocal and instrumental, has a notable quantity of syncopated moments of the composition. A different example is the rhythm of *jazz*, whose most salient characteristic is given by the repeated *syncopations* (*syncopated rhythm*) determined by the fact that the strong tempos of the melodic sections (trumpet, sax, clarinet, etc) never coincide, or almost never, with those of the rhythmic sections (drums, piano, guitar, bass, etc).



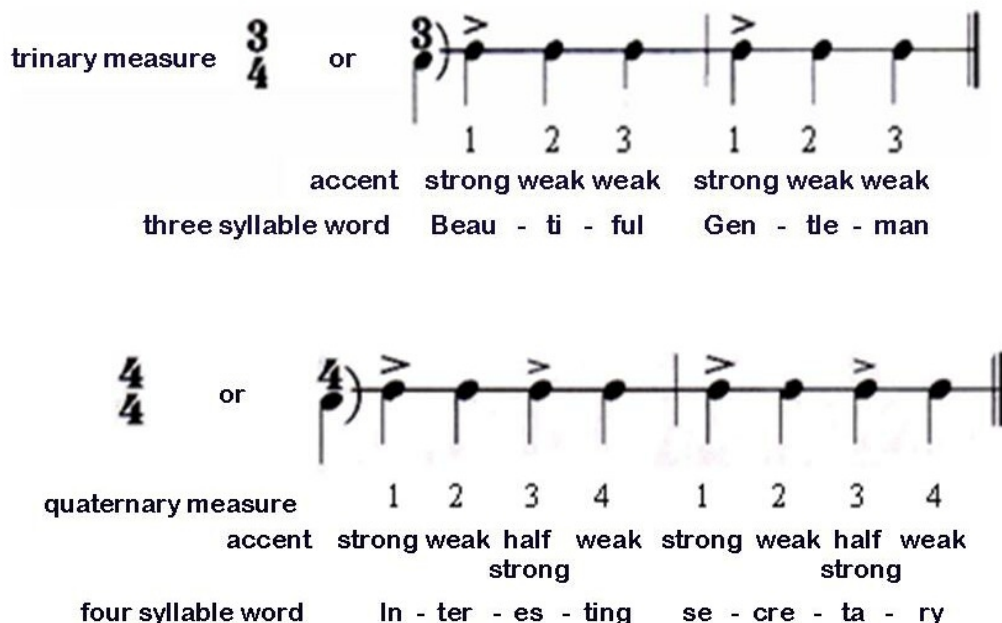


Illustration 2

D) The *tempo*. This is the special indication which is placed at the beginning of each passage, immediately after the key, to establish how many tempos the *measure* or *beat* is formed of. Such an indication consists of a fraction whose numerator sets the number of *tempos*, and the denominator their individual value.

Moreover, when a composer sets verse to music, he chooses the rhythmic structure (binary, trinary, quaternary, combined differently, simple or composite) on the basis of the metrics of the verses themselves. In this way, when working with the verses of a sixteenth century madrigal or an air from an opera of the nineteenth century he must examine the succession of strong and weak accents to match the most suitable rhythmic tempo to them (binary, trinary, quaternary, etc.). Without this operation, it is impossible to proceed in the composition with the elaboration of the melodic line and the harmony, followed by the form, and even this in close relationship to the form of the verses to compose in music.

Up to this point we have analysed *rhythm* only as the organization of *tempos and accents*. Even taking into account the variable *movement*, it turns out to be a rather rigid structure and certainly monotonous if it should be founded only on one succession of identical durations (pulsation) even if they are accented differently. Pulsation by itself is not yet rhythm.

E) The *organisation of the durations*. It is the different duration of the sounds, or better the variously organised following of one another of *different durations* that gives life to true rhythm and therefore to all of the musical discourse. The possibility of creating different rhythms using the figures of available values are, as one can easily imagine, almost infinite. A few different durations are in any case sufficient, for example minims, crotchets, and quavers, to give life to an entire rhythmic phrase.

#### 4. Passage from the eight medieval modes to the modern bimodal tonalities

The formation of the harmonic-tonal system, that is, from the model of writing based on the use of major and minor bimodal tonal scales and on the linking of chords, which was reached in the 1900s, is the fruit of a slow process

which matured over the entire history of European music, from Greek antiquity, through the Middle Ages, up to the second half of the XVI century, when it reached a decisive turning point. It is, as a matter of fact, in this period that we see the transition from polyphonic musical writing to monody accompanied by the figure bass, which represents not only a simple change of style, but a profound transformation of the way of considering the musical art and its possibilities of expression.

The attainment of harmonic-tonal writing presupposes the development of both a vertical and a horizontal sensitivity; two distinct processes, but always parallel and concomitant that, over the period of two centuries, determined:

- a) The forming of the modern concept of tonality, that is, a hierarchical relationship between the seven sounds of the scale contained within the octave, with the first degree of the scale called “tonic” that acts as a pivot and toward which the other sounds aim.
- b) The transition of the eight modes of medieval theory into only two major and minor modes of the western musical system.

In antiquity there did not exist a difference between mode and tone. In the medieval period they called their scales mode and tone indifferently, thus having the “first mode” or the “first tone”, “second mode” or “second tone”, etc. In each of these, each one of which began at different degree of the diatonic progression, the position of the tones and semi-tones was different; for which, not having alterations available, performing the same melody in the different modalities meant modifying it.(Illustration 3)<sup>46</sup>

The progress of the Gregorian modality toward our bimodal tonality was lead by the progressive conquest of the tonal centre of gravitation, something which was lacking, as was noted, in the liturgical scales where the relationships between sounds did not constitute centres of tension toward the resolution in the tonic. This last phenomenon was most because of the fact that the medieval modalities did not have a subtonic (that is, the seventh degree of the scale which is a semitone from the sound of the octave).

The singers and theoreticians of the Middle Ages, amongst them Guido d’Arezzo, did not appreciate a scale which had the note before the octave a semi-tone from it; while they called the seventh note of the Gregorian scale *emmelé* (well-resounding) which was one tone from the octave. In the authentic Tritus, where the distance between the seventh and the octave was a semi-tone, the liturgical songs avoided the note *MI* before the final *FA* in the cadences.

However, in popular music the effect of the subtonic was usual even from the most ancient of times as can be confirmed by the fragments of French melodies from the XI century which modern ethnomusicology has studied. In the 1300s with the school of the Ars Nova the subtonic became ever more frequent even in cultured music, to the point of fully affirming itself in Flemish music of the fourteen and fifteen hundreds, and then in the Italian polyphonic schools as a modulating element.

So, it happened in this way that the Gregorian modalities modified themselves from within for the alteration of the seventh degree with the goal of creating an interval from the final of a semitone, passing from the medieval model of the of the eight modes to the bivalent model of two major and minor modes which from J. S. Bach to the end of the 1800s characterized western music (Illustration 4).<sup>47</sup>

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<sup>46</sup> Donald Jay Grout, *Storia della Musica in occidente*, Feltrinelli Editore, Milan, 1988, pp. 67-75

<sup>47</sup> Claudia Galli, *La musica nel tempo*, Poseidonia, Bologna, 2001, pp.62-66



Tonal musical language is based on the major-minor relationship, has fixed functions of the degrees and of the chords within the scale, alternates the concept of consonance with that of dissonance, articulates the moment of tension with that of rest, evolves, over the centuries, toward complexity, the infinite combination of the constitutive elements of musical language: sound, rhythm melody, timbre, and form living life to real sonorous architecture which was representative of the Baroque as with Illuminism and Romanticism. It is necessary to arrive at the end of the nineteenth century to see the de-structuring of the tonal system and in particular at the second school of Vienna with Arnold Schoenberg, Alban Berg and Anton Webern, to witness the birth of a new musical language, the *twelve-tone system*, in which the 12 sounds of the chromatic scale are without a centre of gravitation represented by the first degree of the scale. After a century of avant-garde, at the end of the twentieth century, western musical language took great consideration of its thousand year history and alternated tradition and innovation with confidence.

1. Authentic:	DORIC	
2. Plagal:	HYPODORIC	
3. Authentic:	PHRIGIAN	
4. Plagal:	HYPOPHRIGIAN	
5. Authentic:	LYDIAN	
6. Plagal:	HYPOLYDIAN	
7. Authentic:	MIXOLYDIAN	
8. Plagal:	HYPOMIXOLYDIAN	

Figura 3

Scala di DO Maggiore	
Scala di LA minore	

Figura 4<sup>48</sup>

<sup>48</sup> Luigi Rossi, Teoria musicale, Edizioni Carrara, Bergamo, 1977, p. 40

## Conclusion

More often treated harshly than praised by the ideologues, the musician occupies the place of honour in every ritual. His conceptual elaboration is organised around the correspondences with the system of the five elements and that of the lunar months. His aesthetics owe a lot to calligraphy, to painting a landscape with the moons, mountains, and waterfalls which characterize it. His discourse borrows elements from law, from meteorology, and from poetry.

A spontaneous echo of nature, music in China is resonance. A wise construction, it owes less to nature than to combinatorial art and the game. Tied to specific styles, it demands sophisticated performance techniques: impact of the tongue or the bow, fingerings, articulations, an entire corporeal repertoire near that developed in the technique of guided breathing, the *qigong*. Structured in the form of time, it does not begin as a creation and ignore the genius, the inspiration. A collective action, it unifies the community, an individual action, it allows meditation..

In the west, over the centuries, under the leadership both of the catholic Church and the political powers, the development of the musical language came about as a function of the liturgy and of court life. The path taken gradually simplified the modal system up to the conquest of the bivalent tonal system. Singing had its own existence uniquely in the memory of the singers and was spread and handed down from one generation to another by means of the oral tradition. The turning point came in the IX century, when, with the use of the neumes, the pitches of the sound began to be outlined. With the arrival of polyphony, toward the end of the XII century, work of the so-called School of Notre Dame, it became necessary to develop a rhythmic notation system which was able to calculate the value of the duration of the sounds, along with the notation of the pitches which already existed. The vast and multiform, western, musical, cultural patrimony reached us thanks to the birth of modern musical writing. Contemporaneously, musical language evolved in the direction of a complex architectonic form which was able to contain, in the horizontal dimension, the *melos* of the instruments and of the voice and in the vertical dimension counterpoint and harmony. Both of the directions, in turn, were used to explore the ever more complex rhythmic, timbric, and formal structures.

Chinese musical language, with its pentatonic scale never felt the need for a sonorous centre of gravitation around which to make melodies and the lack both of the *subtonic* and the semitone interval within the pentatonic scale opened wide the doors to a musical system devoid of complex sonorous architectures. For this reason, the musical patrimony, this very articulated and complex as well, for centuries was handed down orally (as happened in the west in the first thousand years of Christianity) and musical notation was limited to the practice of tablature to simplify the performance of the instrumentalists. The lack of written documents, above all as regards the popular music practiced in the vast territory of China makes it difficult to analyse that extensive patrimony and, even more demanding, its comparison with that of the west. Within this conception, precisely because the Chinese language is monosyllabic, the rhythmic dimension as it has been handed down for centuries with the characteristic of immutability, did not feel the need to develop such a practice and, as a consequence, an articulated and complex mensural notation. Rhythm is a “dimension” of sound and the order of movement (platonic matrix) should not be understood in the western sense of the word, that is, rigid, synchronic, but on the contrary flexible, formalised with the rites and ceremonies to allow man to place himself in the condition of being able

to inscribe himself in the cosmic order letting the portion of “heaven” which is closed inside of him resound. In this sense, rhythm and more generally all Chinese music always has an ethical value and this even before Plato in the West asserted the analogous thesis of Ethos (IV century B.C).

Amongst rhythm, language, and western music and Chinese music, the single possible comparison is with a game, but in its richest meaning: defined rules, subtle understandings, inventiveness, interaction amongst allies, but also play between the elements without which a machine does not work. “The idea of play apposes, in an unstable and paradoxical equilibrium, the two groups of notions formed of the concepts of liberty, openness, and empty space on the one hand and of those of adjustment, contact, and systemic closure on the other”<sup>49</sup>. For a long time associated with archery, it is the first amongst the attributes of the man of letters, first of the chess pieces, long before writing and painting. In the character “play” (*you*), there are traces of “swim”, “fluctuate”, “enjoy oneself”, “roam”, and also “wander”, “be a nomad”; all musical characteristics. Play, joy, and pleasure, one also says *yule*, where *yu* is written with the key for woman and where *le* uses the same character, pronounced differently, as “music” (*yeu*).

A synthesis in two tables of the results fo this work:

European Culture	Chinese Culture
Rhythm and syllables Rhythm and metrics Metrics as succession of syllables  Scales: modal, tonal, twelve-tone	<i>čie</i> (rhythm), <i>pan-yen</i> (measure) binary rhythm (measure of 2 and of 4 tempos) is very frequent, while the trinary (measure of 3 tempos) is very rare in the traditional classical music. Scale: pentatonic
Rhythm as order of the movement (Plato)	Music is nature that manifests itself through sound; Rhythm an “aspect” of sound
Middle Age: Gregorian Chant with free rhythm and without pre-established metres	Monosyllabic language Syllabic singing
Music text: Italian melodrama	Music text: melodic and polyphonic compositions without western harmony
Measured rhythm: based on the disposition of the accents.	Free rhythm (without disposition of the accents) and measured

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<sup>49</sup> J. Henriot, *Jeu*, in Sylvain Auroux, *Les notions philosophiques, dictionnaire*, Paris, PUF 1990, p. 1391.

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