

Metrical Structure and Freedom in *Qin* Music of the Chinese Literati

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TEMPORAL ORGANIZATION IN TRADITIONAL CHINESE MUSIC

TEMPORAL organization in most genres of traditional Chinese music is informed by the *banyan* structure, the concept of which can be dated back at least to the sixteenth century (Wang and Zhang 1990). The *banyan* structure consists of regular pulsations at two levels. At the higher level, there are slower equidistant pulsations labelled as *ban*, whereas faster pulsations labelled as *yan* at the lower level mark the subdivisions between the *ban*, together acting as “measurement of time duration for the musical notes” (Du 2009). Common forms of the *banyan* structure include “one *ban* three *yan*” and “one *ban* one *yan*” (Du and Qin 2012, chap. 8), equivalent to Western quadruple meter and duple meter respectively. Regular quadruple *banyan* structure, which can expand or contract in different variations of a mother tune, has been well described for *sizhu* “silk and bamboo” music in Shanghai (Witzleben 1995, chap. 5) and Southern China (Thrasher 2008, chap. 4). Different percussion instruments are often utilized to mark the time points of the *ban* and *yan*. In traditional musical scores, the *banyan* structure is often indicated by circles and dots, representing *ban* and *yan* respectively, adjacent to musical notes in *gongche* notation.¹ This concept of temporal organization is akin to one common model of meter discussed in Western academic literature, where meter is considered as periodicity based on durational quantity, and can be defined as “the regular, hierarchical pattern of beats to which the listener relates musical events” (Lerdahl and Jackendoff 1983, 17).² Meter involves “our initial perception as well as subsequent anticipation of a series of beats that we abstract from the rhythmic surface of the music as it unfolds in time,” and is “a musically particular form of *entrainment* or *attunement*, a synchronization of some aspect of our biological activity with regularly recurring events in the environment” (London 2012, 4). London (2012, 7) considers that our capacity for entrainment is universal, and the concept applies to both Western and non-Western musical traditions.

There is not much in-depth discussion of the *banyan* structure in academic writings on Chinese music (Zhang 2000). While contemporary teaching materials on Chinese music often talk about strong accent at the *ban* beat and weak accent at the *yan* beat, some scholars question this (Du 2009). There can be complex interactions between rhythm and the *banyan* structure, as exemplified by a recent study of Cantonese opera by Yung (2020). Yung demonstrates how a syncopated rhythmic pattern in a strictly duple *banyan* structure can be

1. The *gongche* notation is a form of solmization using different Chinese characters to represent notes of a musical scale.

2. This model is sometimes labelled as the “quantitative periodic model,” as compared to the “qualitative model” explored by Zuckerkandl and Hasty (Horlacher 1995, 291).

heard differently as having a triple meter, and how a creative singer can add further syncopations so that it can be perceived as having a complex meter.

Indeed, while meter “constitutes the matrix out of which rhythm arises” (Cooper and Meyer 1960, 96), Western academic studies have demonstrated that interactions between rhythm and meter can be complex in many works of Western art music. A passage may contradict the established metric context (syncopation, hemiola), or a melody or rhythm may be construed in more than one metric framework (“metric malleability”; London 2012, chap. 6). There can be nonalignment of two or more layers of rhythmic activity (“metric dissonance”; Krebs 1999). In extreme cases, “the notated meter serves as an arbitrary temporal framework for the performers that is perceptually opaque to the listener” (London 2012, 23). Furthermore, some composers since the nineteenth century utilize irregular changing meter, with a basic regular pulse but irregular interruptions to periodicity at a higher level of the metrical hierarchy (Horlacher 1995), *The Rite of Spring* by Stravinsky being a notable example. Christopher Hasty’s concept of “metrical particularity” is another perspective on the relationship between meter and rhythm. Hasty (1997, 149) considers that one does not have “to identify meter with bar or to presuppose an invariant procession of equal beats” and “each measure or each metrical unit could be viewed as a unique projective situation in which uniqueness or particularity arises both from the measure’s internal constitution and from its assimilation of prior events (and its potential for being assimilated to future events).” Cook (1999, 608) considers that “it is with post-tonal music that the fruitfulness of Hasty’s method as a protocol for disciplined analytical interrogation becomes most apparent.”

Looking beyond Western art music, a significant number of musical forms around the world do not use regular meter, or indeed any form of periodic organization (Clayton 1996, 323). In the concluding chapter of *Analytical and Cross-Cultural Studies in World Music*, Michael Tenzer (2011, 422) uses five terms to describe “a continuum of diachronic frameworks along which time is perceived as increasingly regulated and constrained by equidistant pulsations (beats) and by repetition of content”: namely, unmeasured rhythm, pulsation, meter, cycle, and ostinato cycle. Here, meter is defined in the following terms: “When events do suggest higher-order regularity, we can track two or more synchronized streams as long as the pulsations’ durations are related by sufficiently elementary ratios” (Tenzer 2011, 423). Music with regular pulsation but no higher-order regularity is described as “pulsation.” With this classification, the categories “unmeasured rhythm” and “pulsation” are without regular meter.

In Chinese music, the predominant temporal organization in most genres is in the form of a regular meter; however, there are also significant exceptions. Mountain folk songs and nomadic folk songs are often in free rhythm (Wang and Wang 2015). In genres with an overall metered framework, sections without a regular meter do occur. For example, in Chinese opera, sections in free rhythm, labeled as *sanban* (“free beat”) or *yaoban* (“swaying beat”; Du and Qin 2012, chap. 8), are strategically placed between metered sections to provide contrast (Wichmann 1991, 67). In some instrumental genres, gradual acceleration of metered music with increasing tension culminates in a fast non-metered section with regular *ban* beats only,

without subdivisions into *yan*. Such sections are labeled as *kuaiban* (“fast beat”) or *liushui ban* (“flowing water beat”; Thrasher 2008, 94), or specifically in Chaozhou music, as *kaopai* (“whipped beat”) and *sanban* (“third beat”; Thrasher 2008, 140).³ In this paper, we will focus on music of the *qin*, the seven-string zither of the Chinese literati, which is traditionally not thought of as informed by the *banyan* structure, and is characterized by metrical irregularities and ambiguities. This distinctive temporal organization in *qin* music is familiar among *qin* players themselves, but there has not been much discussion of this in scholarly studies published in Chinese or English. The present paper aims to provide a systematic discussion about this. In particular, this paper will focus on one special category which may be referred to as “pulsation with interpolated half-beats.”⁴ A case study using computer and statistical analysis will be carried out on a representative instance of this special category. Finally, the implications of these findings will be discussed.

QIN MUSIC OF THE CHINESE LITERATI

Qin music represents an important part of Chinese cultural heritage.⁵ The *qin* is historically associated with the literati, who were scholars of Chinese literature and philosophy. The literati played the *qin* as amateur music-makers, and they also practiced other art forms like poetry, painting, and calligraphy. *Qin* music has been heavily influenced by Confucian, Daoist, and Buddhist philosophies.⁶ Chinese classical sources on the *qin* are replete with references to these philosophies.⁷ For the literati, the *qin* was a musical instrument played not only for pleasure, but also for cultivating one’s heart. Playing the *qin* was one of the activities “central to their sense of identity as a cultural elite” (Yung 2017, 509). In fact, cultured literati who played the *qin* well as amateurs were often more respected than professional *qin* players who made a living by teaching the art (Yung 2017).

Qin music differs from other traditional Chinese music genres in many respects. *Qin* music is characterized by its elegance, serenity and subtlety, and is revered for the poetic

3. Some of these “*ban* only” fast-tempo sections do have periodicity at a higher level, though not in the usual sense of a metrical unit. In Cantonese opera, for example, Bell Yung (1989, 76) describes a fast “*ban* only” aria type for a verse structure of seven syllables per line, and each musical line occupies seven beats. Another higher-order periodicity is that the “*ban* only” sections in Chaozhou music are part of a “beat-form variation” suite, and often have the total number of beats fixed at 68, which is the total number of beats in a commonly used mother tune, *baban* (Thrasher 2008, 141).

4. In this paper, the term “interpolated half-beats” is used as a shorthand for “interpolated events that last the duration of half a beat.”

5. The music of the *qin* was proclaimed as one of the Masterpieces of the Oral and Intangible Heritage of Humanity by UNESCO in 2003.

6. An early comprehensive review of the *qin* written in English is *The Lore of the Chinese Lute* by Robert Hans van Gulik (1940). In chapter three, Gulik gives an account of the establishment of the *qin* ideology heavily influenced by Confucian, Daoist (spelled “Taoist” in his book), and Buddhist thinking. He classifies the Daoist influence as a religious factor, though his description actually centers around the Daoist philosophy and not the Daoist religion.

7. The work by DeWoskin (1982) provides a useful introduction to some of the Chinese classical sources on this.

mood it produces, rather than for attractive melodies or lively rhythmic patterns.⁸ The instrument is very quiet, commensurate with its function in cultivating one's heart rather than entertaining an audience. Compared to other plucked stringed instruments, the *qin* is special in its ability to produce a variety of tone colors with different playing techniques. In addition to open string notes, stopped notes and harmonic notes, soft gliding notes without further plucking (hereafter referred to as “non-plucked gliding notes”) can be produced by the left hand gliding on the string after a plucked stopped note. Many forms of ornamental slides and vibratos add fine nuances to the plucked stopped notes and non-plucked gliding notes. Gulik (1940, 1) aptly described the essential quality of the music as “painting with sounds.” The first author has further argued in a recent publication that timbre is an important structural element in *qin* music (Tse, forthcoming).

Regarding rhythm in *qin* music, gradual acceleration of tempo is common and sometimes can span almost the entire length of a *qin* piece (Latartara 2005; Yung 2008, 109). The first author has published an empirical perceptual study among music students demonstrating that, unlike acceleration in other genres of traditional Chinese music, acceleration in *qin* music can paradoxically not be noticeable to listeners, a feature which carries aesthetic and philosophical implications (Tse 2007). However, scholarly studies have not devoted much discussion to the metrical structure of *qin* music. Liang's (1972, 229) claim that “the meter of ch'in [*qin*] music is always duple” is an obvious over-simplification of the issue. Mitani (1981, 130) in an analysis of the melodic features of *qin* music says that “the metrical structure of *qin* music consists of phrases of unequal length in binary time, ternary time, or a combination of both.” Wu and Wu (2001, preface 4–7) in the preface to their transcriptions of *qin* music of the Wu family, discuss rubato and free rhythm, and mention the terms “isometric,” “regular compounds,” “irregular compounds,” and “irregular metric modulation” as forms of metrical structure in *qin* music, without going into any further detail.

Transcriptions by scholars of *qin* melodies may give insights into the issue of meter. In Latartara's analysis of *Xiaoxiang shuiyun* (“Water and Clouds over Xiao Xiang”), bar lines are not used in the transcription. He comments that “the rhythms for phrase I are non-pulsed and the rhythms for the rest of the work, while at times pulsed, are often irregular” (Latartara 2005, 234). Wu and Wu (2001) mostly use half bar lines to divide the musical phrases into irregular duple and triple “measures.” Joseph Lam's (1993) transcription of *Changmen yuan* (“Lament of Empress Chen”) features measures with three beats interspersed within a basically duple metrical structure. Yung (1997) transcribed six pieces of *qin* music played by *qin* master Yao Bingyan (1921–1983). For the third to the sixth pieces, changing meter is used in the transcription, with varying time signatures marked as 3/2, 2/4, 3/4, 4/4, 5/4, 6/4, 7/4, 6/8, 7/8, 9/8, 10/8, 11/8, 15/8, and “unspecified meter.” The meter variations do not fall into any fixed pattern. Yung explains that, because of a lack of temporal instructions in the original *qin* notation, “in

8. One of the most important pieces of literature on the aesthetics of the *qin* is *Xishan qinkuang* or the “Xishan treatise on the aesthetics of *qin* music” written by Xu Shangying in the seventeenth century. An English translation of this treatise has recently become available (Tse and Lam 2015).

writing down guqin [*qin*] music with Western staff notation, the result is . . . a particular interpretation of a performance” (Yung 1997, 12). Yung (1997, 11) discusses different ways to bar a musical phrase, depending on whether the transcriber tries to force the phrase into a regular metrical framework, or to conform to melodic motives, or to indicate plucking techniques and finger movements.⁹ However, Yung does not proceed to give a systematic discussion of temporal organization in *qin* music. In order to fill this gap, the present paper aims to provide a systematic discussion of this feature. Before this, we would like to briefly discuss two issues raised by Yung: namely, the lack of temporal instructions in *qin* notation, and the transcription of *qin* music as an act of interpretation.

Lack of Temporal Instructions in the *Qin* Notation

Instead of notating the musical notes directly, the tablature score used for the *qin* notates the fingering. Each fingering notation is formed by combining simplified components of Chinese characters and numerals to indicate finger movement and position.¹⁰ By following these fingering instructions, the player produces a musical note. A series of fingerings would give a series of musical notes; however, elements of rhythm, like the overall tempo and the duration of individual notes, are not notated in the tablature score, but are passed down orally from one generation to another.¹¹ To help a player master the piece, rhythmic patterns are sometimes implied by the notated fingering patterns.¹² Infrequently, descriptive words like *rupai* (“starting the pulsed section”), *ruman* (“starting the slow section”), *shaoxi* (“small pause”), or *diedang* (“unsteadiness”) may be added to the score. In certain handbooks from the nineteenth century, dots were added adjacent to individual tablatures to indicate the pulse, but other details were still lacking.¹³

Bell Yung (1994) comments that the absence of detailed temporal instructions in the score allows flexibility and encourages creativity on the part of individual *qin* players. The *qin* tradition emphasizes the authority of the teacher–student relationship, and details of performance practice including the rhythmic details are meticulously learned through the oral transmission process. However, after a piece is learned, the tradition allows mature *qin* players to make alterations to the rhythm of the piece and develop their own interpretation of

9. Yung (1997, 11) relates the finger movements to “the performer’s choreographic and kinesthetic perceptions in performance.”

10. More detail on the tablature score of the *qin* can be found in Gulik (1940, chap. V-3) and Yung (1994).

11. The learning process is usually through imitation phrase by phrase.

12. For example, an instruction for vibrato after a stopped note implies that the duration of the stopped note is to be prolonged. Combination of a stopped note produced by right hand pluck followed by a stopped note produced by left hand pluck is usually played with the former note as a long note and the latter as a short note.

13. From the late twentieth century, transcriptions into staff notation or cipher notation of important pieces played by *qin* masters are available commercially, for example, the publication by Li and Gong (2010). However, the transcriptions are sometimes not very accurate. The current generation of *qin* students often utilize such publications in their learning, but they still rely on recordings of *qin* masters or oral transmission from their teachers in learning the rhythmic details and fine nuances of the music.

the music.¹⁴ If the oral transmission of a piece has been interrupted, mature *qin* players can reconstruct the music from the score through a process of *dapu*, based on a good understanding of traditional playing style and aesthetics.¹⁵ Without detailed temporal instructions in the tablature score, there is flexibility in determining the rhythm during the process.

This flexibility does not mean that the rhythm of a *qin* piece cannot be studied. Though two different *qin* players may play the same piece differently, once a certain player has established their way of playing the piece, there is often little change in the rhythmic details between individual performances.¹⁶ Thus, selected renditions of a piece can still be studied meaningfully.

An Act of Interpretation

Because the original *qin* notation does not provide information about meter, studying the metrical structure of an individual rendition of a *qin* piece is an act of interpretation by the researcher.¹⁷ Such interpretation is not always straightforward.

In Western tonal music with a regular meter, hierarchies of pulsation can be recognized through identifying different types of accents in the music. Lerdahl and Jackendoff (1983, 17) distinguish three kinds of accents: phenomenal, structural, and metrical.¹⁸ The first two are part of the musical event, whereas the third is a regular pattern inferred by the listener. Compared to Western tonal music, there are special features in *qin* music that affect the perception of hierarchies of pulsation. First, *qin* music does not have harmony, and thus does not have accents arising from harmonic changes. Second, *qin* music is monophonic, and does

14. In the *qin* tradition, flexibility given to *qin* players to manipulate the piece is not limited to the non-notated rhythmic elements. *Qin* players are free to manipulate the fingering and musical notes as well, resulting in different notated versions of a same piece of music (Yung 1987). This latter aspect of the flexibility of *qin* music is not the focus of the present paper.

15. *Dapu* is “the process of deciphering and interpreting the tablature, whereby mute music in notation is converted to live music to be experienced” (Yung 1985, 370). Yung outlines the *dapu* process as consisting of three stages: research into the literary content of the music, deciphering of the technical content of the notation, and creative input from the *qin* master.

16. In the *qin* tradition, similar to traditions that allow modification of a piece of music on transmission, the concept of “a musical piece” is a broad one. When the versions of a piece of *qin* music collected in different *qin* handbooks have variations in the tablature, they are considered different versions of the same piece. When the renditions of the same version played by different players have variations in temporal elements, they are considered different renditions of the same version of the same piece.

17. Yung (1997, 11) considers that interviewing a traditional *qin* master regarding metrical groupings probably would not help. “He does not have to represent what he does in terms of notation with specific metrical symbols. . . . The very question itself forces him to perceive the music in a different light.”

18. Explanation of the three kinds of accent is given by Lerdahl and Jackendoff (1983, 17) as follows: “By *phenomenal accent* we mean any event at the musical surface that gives emphasis or stress to a moment in the musical flow. Included in this category are attack points of pitch events, local stresses such as *sforzandi*, sudden changes in dynamics or timbre, long notes, leaps to relatively high or low notes, harmonic changes, and so forth. By *structural accent* we mean an accent caused by the melodic/harmonic points of gravity in a phrase or section—especially by the cadence, the goal of tonal motion. By *metrical accent* we mean any beat that is relatively strong in its metrical context.”

not have an accompaniment part providing the beats. Third, soft non-plucked gliding notes are sometimes used as structural notes of a melodic line, in such a way that a soft gliding note falls on the downbeat of an entrained metrical pattern, leading to incongruence between phenomenal and metrical accents (Tse, forthcoming). Fourth, unlike Western tonal music with a regular meter for which listeners can infer a sustained metrical pattern, much of *qin* music does not have higher-order regularity in its temporal organization.

Because of the above features, perception of hierarchies of pulsation in *qin* music often depends on agogic accents and pitch accents of the melodic line, repetition of melodic patterns, and separation into musical phrases.¹⁹ Fine nuances arising from the variety of fingering techniques can also affect the perception of pulsation or phrasing. However, sometimes such perceptions can be ambiguous, and thus a good understanding of the hierarchies of pulsation in *qin* music depends on a familiarity with the repertoire and a thorough grasp of traditional performance conventions and common melodic patterns in the music.

Having played the *qin* for over 35 years, and as a researcher, teacher, composer, and *dapu* practitioner of the *qin*, the first author of this paper is in a good position to analyze temporal organization in *qin* music.²⁰ The second author, who is also an experienced *qin* player, brings his expertise in computational and statistical analysis to this study. Our analysis is based on the interpretation of music of important *qin* players of the present and previous generations using available recordings and of pieces learned by the first author from important players, focusing on the perspective of a listener.²¹

CLASSIFICATION OF TEMPORAL ORGANIZATION IN *QIN* MUSIC

In our work, we attempt to classify temporal organization in *qin* music into different categories. Although we will describe each of the categories as if they were distinct, one must understand that these categories actually form a continuum wherein each category merges into the next. At one end of the continuum is “regular meter,” which is found in some simple short pieces only. At the other end of the continuum is “free rhythm,” where there is no regular pulsation. We divide the practice between these two extremes into “changing meter,” “metrically ambiguous,” and a special category dubbed “pulsation with interpolated half-beats.”

One should note that these categories do not occur in isolation in separate pieces. Sections belonging to different temporal categories are often juxtaposed in the same piece.

19. An agogic accent is a stress perceived because of a more prolonged duration of the musical note, whereas a pitch accent is a stress perceived because of a higher pitch of the musical note.

20. The advice of Timothy Rice (1997, 117) that insiders should “undergo a productive distantiation necessary for the explanation and critical understanding of their own culture” has to be borne in mind.

21. The players were the Hong Kong master Tsar Teh-yun (1905–2007) and Kwan Shing-yau (1943–2011), a student of the Guangzhou master Yang Xinlun (1898–1990).

Free rhythm is often used at the beginning and the end of a piece, and at climactic sections. The main body of the music is often in changing meter, sometimes intermingled with metrically ambiguous sections. Interpolated half-beats may occur in sections in regular or changing meter as well as metrically ambiguous sections. The five categories recognized here will be described in the ensuing sections, with a special focus on “pulsation with interpolated half-beats.”

Regular Meter

Some simple short *qin* pieces do exhibit a regular meter, mostly duple or quadruple. Interpretation of such metrical structures seems straightforward. As an example, *Qiu fengci*, a well-known beginner piece from a twentieth-century handbook *Mei'an qinpu* (1931), can be transcribed, after the introductory phrase in free rhythm, with a regular meter of 2/4 throughout, and with musical phrases having 8, 8, 10, 10, 10, 10, 10, 8, and 10 beats sequentially.²²

Changing Meter

However, if the piece is played a bit faster, as some performers do, the metrical structure of the piece might be perceived differently. With a faster tempo, the listener may group 2 beats together as a single beat such that the beats are perceived at a higher level of the metrical hierarchy, and the listener perceives the lower level as subdivisions of a beat.²³ The phrases after the introductory one will have 4, 4, 5, 5, 5, 5, 4, and 5 beats sequentially, and the transcription would not be duple throughout. The 5-beat phrases would be interpreted to have a changing meter involving 3-beat measures. The listener's expectations formed after entrainment to the initial duple meter would be thwarted, and again after being accustomed to the 5-beat phrases. Below in Example 1 are given the second and third phrases (after the introductory one) from *Qiu fengci* transcribed in two different ways.²⁴ One should note that all phrases after the introductory phrase have a similar ending with two short notes and one long note of the same pitch (as open string note, stopped note, and open string note, played with a standard fingering combination), and it is common for musical phrases in traditional *qin* pieces to end in this way. According to Lerdahl and Jackendoff (1983, 75), “where two or more groups or parts of groups can be construed as parallel, they preferably receive parallel metrical structure.” Therefore, in Example 1b, after the first phrase in duple meter, the 5-beat phrase is divided into two measures of 3 and 2 beats instead of the other way around.

22. This beginner piece is a *qin* song, which the player can sing while playing the *qin*, and the lyrics can help a beginner to shape the musical phrases.

23. London (1995), in his discussion of complex meter, describes this phenomenon with Beethoven's “Ode to Joy” as an example. However, unlike our example here, in London's example the measures are still regular after being moved to a higher level in the metrical hierarchy.

24. In all music examples in this paper, the pitch of the open string note of the first string is taken as C2. The slurs in all examples are utilized to indicate soft non-plucked gliding notes after the plucked note at the beginning of the slur, and not as phrase markings.



a. Transcription with regular measure lengths.



b. Transcription with changing measure lengths.

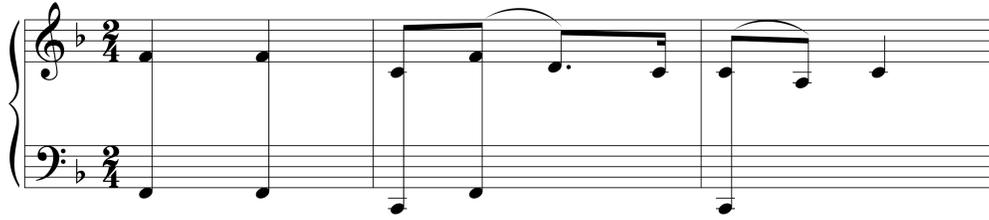
Example 1. Two phrases of *Qiu fengci* from *Mei'an qinpu* transcribed in two different ways.

In fact, most *qin* music is characterized by changing meter. While hierarchies of pulsation can be perceived, there are measures with an odd number of pulses interpolated among duple or quadruple measures. Such interpolations do not form a regular pattern, and do not, therefore, together with the duple or quadruple measures, constitute the non-isochronous or complex meter found in some non-Western music genres (London 2012, chap. 8).

There are some commonly used strategies to thwart the listener's expectations formed after entrainment to the predominant duple or quadruple meter.²⁵ First, motives of three-beat duration are juxtaposed with duple or quadruple melodic figures. Second, when a melodic phrase is repeated, the length of the phrase is varied, bringing freshness to the phrase on its repetition. In Example 2, events that last the duration of two beats are compressed into one beat. In Example 3, two soft gliding notes that last the duration of a beat are added.

Third, in a melodic phrase in duple rhythm, the melodic figure in the last three beats of the line is taken as a new motive and then restated, resulting in an ensuing three-beat measure. In Example 4, the melodic figure in the last three beats of the first phrase is restated as a bridging phrase to the ensuing phrase. In this example, the C at the second beat of measure 6 can be perceived as a downbeat due to its agogic accent and relative loudness (being a double stemmed note played on two strings, by a special fingering technique that aims to change the tone color as well as sound volume). However, the D at measure 6 can also be considered as the downbeat because of entrainment to the preceding duple meter as well as the pitch accent. In this transcription, we have taken the latter approach, because we consider this is what a listener would likely perceive as the music unfolds. Then, on hearing

25. Discussion of these strategies and the examples were first published by the first author in 2017 in a short paper in Chinese (Tse 2017).

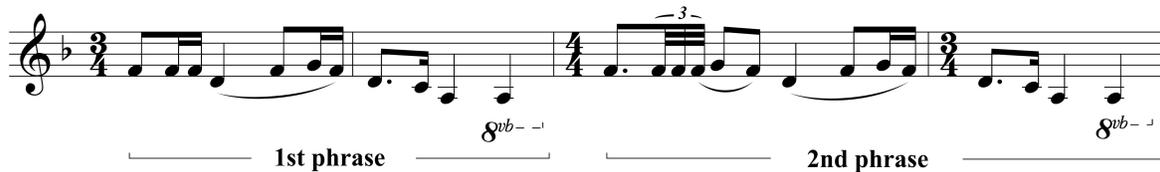


a. Repeated F in the first measure lasting for two beats.

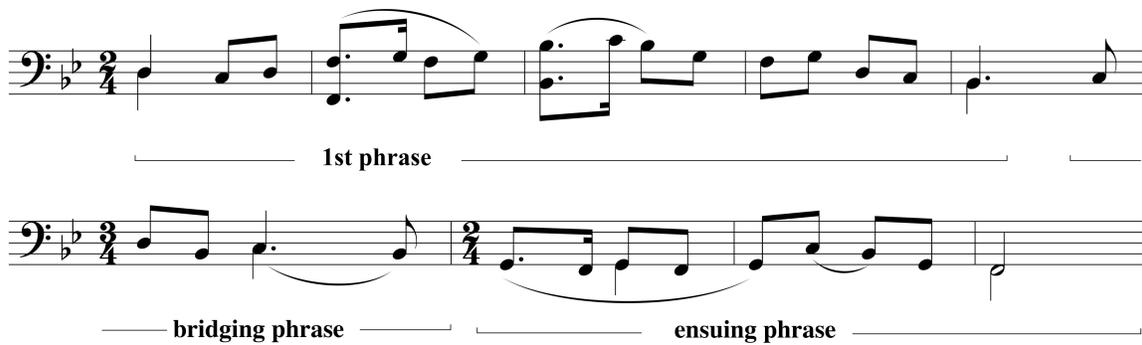


b. Repeated F in the first measure compressed into one beat.

Example 2. Two similar phrases in *Guanshan yue* from *Mei'an qinpu*.



Example 3. Two similar consecutive phrases in *Liangxiao yin* handed down by the Hong Kong master Tsar Teh-yun (1905–2007), with gliding notes lasting the duration of a beat added after the first beat of the second phrase.



Example 4. A section from *Yulou chunxiao* from *Mei'an qinpu*, with a 3-beat bridging phrase derived from the end of the first phrase.

the ensuing C with its agogic accent and relative loudness, the interpretation becomes ambiguous. One should note also that the last B \flat at measure 6 is considered to belong to the bridging phrase, instead of to the next phrase as an anacrusis, because this is a soft non-plucked gliding note (indicated by the slur) intimately related to the preceding C.

Metrically Ambiguous

Sometimes with a fast, regular basic pulse and a frequently changing meter, the patterns of accent are metrically ambiguous. In Example 5 is a passage in harmonics from *Xiaoxiang shuiyun* handed down by the Hong Kong master Tsar Teh-yun. This passage can be divided into short phrases as A, A₁, B, B₁, and C, and can be interpreted as having a predominant duple meter interrupted by measures with an extra beat. However, there are alternative ways to rebar the passage. Example 6 shows how the same melody could be interpreted as having a predominant triple meter. One can also combine the approaches in Examples 5 and 6 and rebar the passage as in Example 7.

Example 5. A passage in harmonics from *Xiaoxiang shuiyun* handed down by Tsar Teh-yun, barred with a duple meter interrupted by measures with an extra beat.

Example 6. The same passage from Example 5 rebarred with predominantly triple meter.

Example 7. The same passage from Examples 5 and 6 rebarred with alternating duple and triple meter.

One can see that, while the metrical structure of phrases A and C is quite clear, the metrical structure of phrases A₁, B, and B₁ can be interpreted either as predominantly duple, predominantly triple, or alternating duple and triple. The passage can even be interpreted as consisting of free combinations of long and short notes placed along a series of basic regular pulsations. One cannot be sure in what way a listener would perceive the passage or a performer would interpret the passage. In view of the ambiguity, it may not be suitable to force a metrical interpretation on these phrases: it is more appropriate to interpret the temporal organization as “metrically ambiguous,” without clearly defined pulsations at a higher level of the metrical hierarchy.²⁶

Free Rhythm

At the end of the continuum of diachronic frameworks is “free rhythm,” which is commonly used in *qin* music in the beginning and end of a piece, and at climactic sections. Infrequently, a piece may be in free rhythm throughout (Yung 2008, 113).²⁷ We divide free rhythm in *qin* music into two sub-categories, one with “pulsation” in extreme rubato, and a non-pulsed sub-category. In both sub-categories, the music is divided into phrases, which are separated by a “breathing space” (a pause). In the first sub-category, “pulsation” and sometimes a “changing meter” can be discerned, but the tempo varies widely within a phrase. A common pattern is a slow beginning of a phrase, accelerating toward the middle portion, and then decelerating toward the end. If there are interpolated half-beats within phrases in extreme rubato, the pattern becomes very free, and merges with the next sub-category of non-pulsed free rhythm.

In non-pulsed free rhythm, no pattern of pulsation is perceived. The music is usually very slow. The inter-onset intervals between musical notes vary without a pattern, and the sense of pulse becomes obliterated.²⁸ Sometimes, part of a phrase has pulsation in extreme rubato and part of it is non-pulsed. In some very long notes in the non-pulsed parts, vibratos are added, beginning very slowly with a large amplitude and then accelerating with decreasing amplitude as the sound lingers on. Such fine manipulation of the sound adds interesting nuance to the non-pulsed parts.

Pulsation with Interpolated Half-Beats

Perhaps the most interesting feature in *qin* music that deserves special discussion is the occurrence of interpolated half-beats in passages with a regular pulse. Here we do not mean instances of syncopation. If the total number of such interpolated half-beats between two

26. Some scholars label such temporal organization as “pulsation” (Tenzer 2011, 423). We prefer to label this category as “metrically ambiguous,” because the term “pulsation” gives an impression that there is only a single layer of pulsation in the music. Here, although pulsations at higher levels of the metrical hierarchy are not clearly defined, one cannot say that there are *no* pulsations at a higher level.

27. One notable piece in free rhythm throughout is *Longxiang cao*. Please see Yung (2008, 113–14) for a discussion of this piece.

28. An inter-onset interval is the time between the beginning of one musical note and that of the next note.

pieces, and become a distinctive feature of their music. Such temporal organization has not been well described in traditional non-Western music, and defies the usual binary division of musical time organization in world music studies into categories with or without a basic regular pulse. On the other hand, temporal organization along this direction is used in contemporary music such as the works of Messiaen, and the interpolated time durations are called “added values” (Messiaen 1956, chap. 3).

Here, one may query whether the “half-beats” should in fact be counted as the basic pulse. However, in fast passages, counting the half-beats as the basic pulse may mean a rate over 200 beats per minute. Psychological studies have shown that for periodic sound stimuli of over 120 beats per minute, people often perceive the stimuli as subdivisions of a slower beat (Duke 1989). Thus, in fast passages, it will be unlikely that the interpolated half-beats would be perceived as the basic pulse.

A CASE STUDY OF PULSATION WITH INTERPOLATED HALF-BEATS

In order to demonstrate the characteristics of this special kind of temporal organization, a recording of a representative piece is analyzed. The piece examined here is *Meihua sannong* played by twentieth-century master Zhang Ziqian (1899–1991), based on a Qing Dynasty handbook *Jiao'an qinpu* (1868). The rendition by Zhang Ziqian, often called *lao Meihua* (“the ‘old’ *Meihua*”), is different from the common versions played by most other contemporary *qin* players.²⁹ In *Jiao'an qinpu*, there are markings indicating the end of phrases, but no dots added to indicate the pulse. In Zhang’s rendition, many sections of the piece have pulsation with interpolated half-beats without higher-order regularity. There are two commercially available recordings of Zhang’s rendition, one recorded in 1956 and the other in 1982, and the two are very similar.³⁰ In the piece, after the introductory section, there is a section played in harmonics. Afterwards, this harmonic section is repeated two more times with slight variations, between intervening sections played with stopped notes and open string notes. We have chosen these three sections in harmonics for our analysis because, without the use of non-plucked gliding notes, the durations of all notes in these sections can be measured precisely. The transcription of the first section in harmonics in the 1956 recording is provided in Example 10.³¹

In the transcription given here, a quarter note is taken to represent a beat. There is an overall gradual acceleration of the tempo from start to finish. The largest number of notes are one-beat notes, followed by half-beat notes and one-and-a-half-beat (dotted-quarter) notes. In

29. One common version, based on another Qing Dynasty handbook *Chuncaotang qinpu* (1744), is usually played with a regular basic pulse and a changing meter.

30. The 1956 recording is from Disc 3 of the CD set *Zhongguo yinyue daquan: guqin juan* (An Anthology of Chinese Traditional and Folk Music: A Collection of Music Played on the Guqin), published by Zhongguo changpian shanghai gongsi (China Record Shanghai Corporation) in 1994. The 1982 recording is from the CD *Guangling qinyun* (Guangling Qin Music), volume 1, published by Hugo Productions (HK) Ltd. in 1987.

31. The 1956 and 1982 recordings are very similar, except that the last C note of the eighth phrase in the 1982 recording has a duration of two and a half beats, instead of two beats as in the 1956 recording.

gradual acceleration

The musical score consists of four staves of music in a single system. Each staff contains several phrases of music, with brackets underneath indicating the duration of each phrase in beats. The first staff has three phrases of 4.5, 5.5, and 7.5 beats. The second staff has three phrases of 5.5, 6.5, and 7 beats. The third staff has two phrases of 6 and 7 beats. The fourth staff has three phrases of 4.5, 5, and 6.5 beats. The music is written in a treble clef with a key signature of one flat (B-flat).

Example 10. First section in harmonics of *Meihua sannong* played by Zhang Ziqian, with “bar lines” indicating separation into phrases.³²

addition, there are two pairs of sixteenth notes and three half notes (two at the end of the last phrase). The melody has a clear phrase structure. “Bar lines” are added to separate musical phrases, which are of varying lengths. The resulting “measures” indicate musical phrases instead of a metrical structure or the location of pulses. Parallelism in grouping structure is the main principle considered in the separation of the phrases (Lerdahl and Jackendoff 1983, 51).³³ The first, second, third, and eighth phrases are based on the same motive, progressively elaborated, and all end in three consecutive C notes. The fourth to seventh phrases are based on another motive, progressively elaborated, and all end in two consecutive A notes. The ninth (second-to-last) phrase is very long and is subdivided into two sub-phrases by a “half bar line,” taking into account parallelism between the beginning of the second sub-phrase here and the beginning of the second phrase.

Concerning the location of the pulses and the interpolated half-beats, let us look at the following situations: First, the four notes in the first phrase are clearly “on a beat.” Based on the principle of parallelism, the three consecutive C notes in the second phrase are also “on a beat.” As a result, the G note at the second phrase is an interpolated half-beat note. Second, if the two consecutive A notes in both the fourth and fifth phrases are considered “on a beat,” there is an interpolated half-beat in between the onset of the second A note in the fourth phrase and the onset of the first A note in the fifth phrase, because the duration between the two amounts to 5.5 beats. Third, along the same line of thought, there is an interpolated half-

32. The corresponding section of a common version of the piece based on *Chuncaotang qinpu* is transcribed at Appendix I for comparison.

33. The phrasings here are in line with the markings indicating the ends of phrases in *Jiao’an qinpu*, and we have divided some of the long phrases as notated in *Jiao’an qinpu* into shorter ones.

beat in between the onset of the third C note in the third phrase and the first A note in the fourth phrase, and another one between the onset of the second A note in the seventh phrase and the first C note in the eighth phrase. Fourth, the ninth phrase is interpreted as starting with an “anacrusis,” and the third note F is “on a beat.” Then, the A at the beginning of the second sub-phrase is “on a beat,” and the ensuing G is an interpolated half-beat note.

The melody has mostly a stepwise motion along the pentatonic scale. Except the three consecutive half-beat notes near the beginning of the ninth phrase, all other half-beat notes are preceded by a one-beat note, and followed by a one-beat note (or a one-and-a-half-beat note in one instance), creating an off-beat effect. The overall pattern is a gradually accelerating basic pulsation interrupted by half-beat-long events without higher-order regularity.

The transcriptions of the second and third sections in harmonics are not shown here. The melody of the second section is similar to the first section, but transposed an octave lower. The third section differs from the first section in having an additional short phrase beginning with glissando before the last phrase.

However, not every listener parses these durations as above. In a published transcription (Li and Gong 2010, vol. 2) of the same rendition by Chinese scholar Xu Jian, notes which are classified by us as one-beat notes were transcribed as eighth notes, and combinations of a long and a short note (classified by us as a one-beat note and a half-beat note) were transcribed as triplets occupying a single pulse (with the long note transcribed as a quarter note representing two triplet eighths tied together), so that there are no extra half-beats in the measures. Please see Example II for Xu’s transcription of the first three phrases. Furthermore, one may query whether the irregular temporal organization is in fact free rhythm without regular pulsations.

In order to confirm the accuracy of our own transcription, the inter-onset intervals of all notes in the three sections in harmonics were measured by the second author, using the software Raven Pro (<https://ravensoundsoftware.com/software/raven-pro/>).³⁴ However, before meaningful comparison can be made between the durations of the one-beat notes and the half-beat notes, we have to take into account the gradual acceleration. In order to do so, the durations of the one-beat notes, half-beat notes, and one-and-a-half-beat notes were plotted against onset time. Linear regression analysis was made. The same procedure was done for



Example II. Xu’s transcription of the first three phrases of the first section in harmonics.

34. Using the software, the sites of onset of individual notes at a magnified spectrogram were identified manually, and the onset times were generated by the software with an accuracy of up to 0.001 second.

both the 1956 and 1982 recordings. In the plotting, (1) for comparability between the three sections, the extra phrase in the third section as well as the last phrase of all three sections was not included in the plotting; (2) the two pairs of sixteenth notes were considered subdivisions of half-beat notes, and their durations in each pair were added together to represent the duration of a half-beat note in the plotting.

The graphs for the first section of both recordings are shown in Table I. The x axis represents time in seconds. The y axis represents duration of the notes in seconds, with Y_1 , Y_2 ,

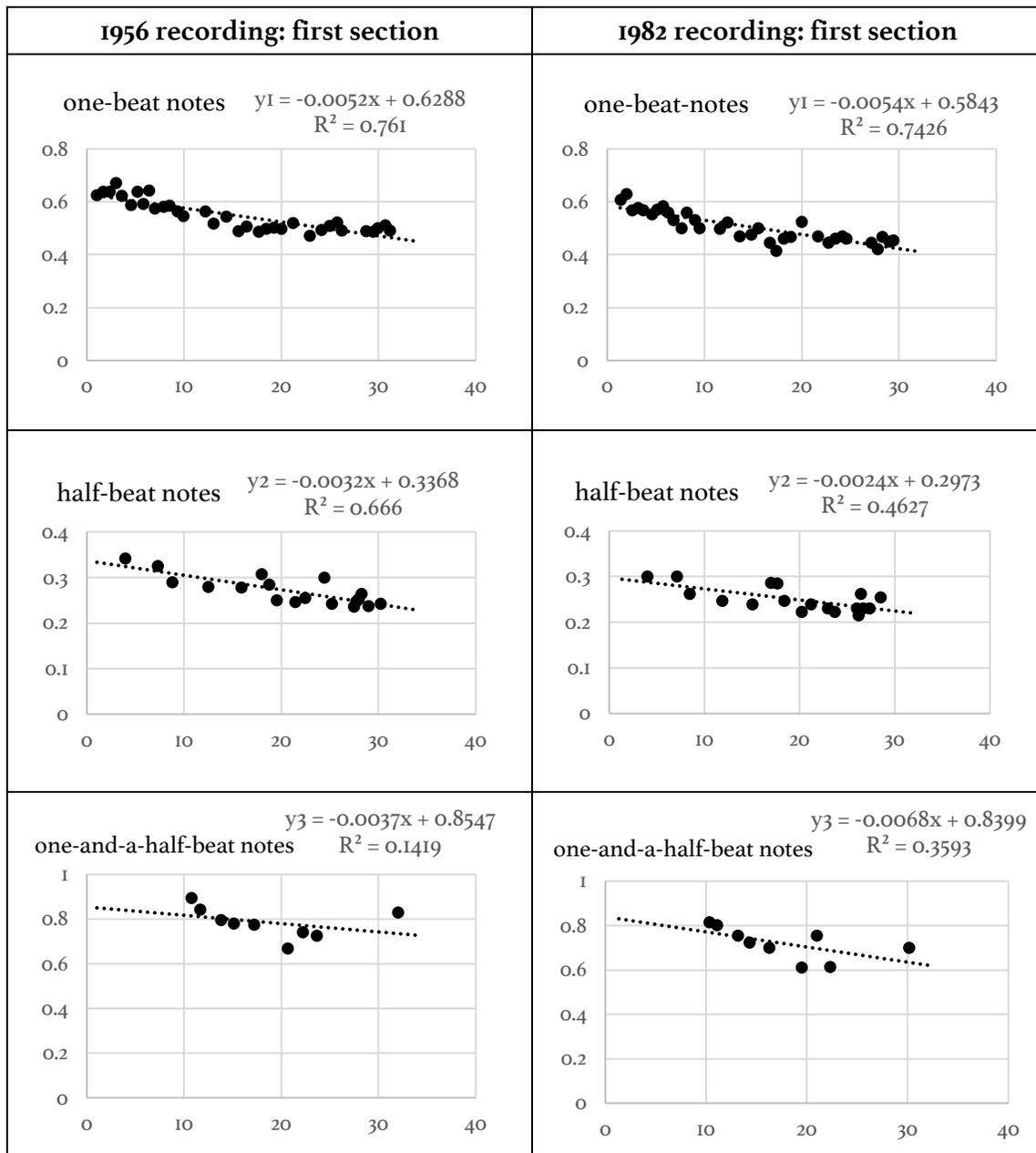


Table I. Graphs of inter-onset intervals for the first section in harmonics of both recordings.

and Y_3 being the linear regression of the duration of the one-beat notes, half-beat notes, and one-and-a-half-beat notes respectively.

Let us first look at the graphs for the one-beat notes. In both recordings, the regression lines are slightly sloping downwards, indicating a gradual acceleration. The deviations of the individual durations from the regression line are small, with a high coefficient of determination (R^2). The initial values of Y_1 for the 1956 and 1982 recordings are 0.6288 and 0.5843 seconds respectively, indicating an initial tempo of 95 bpm and 103 bpm respectively. For the half-beat notes in both recordings, the trend is similar to that of the one-beat notes. For the one-and-a-half beat notes, the coefficient of determination (R^2) is less high because of sparsity of available data, but the trend is similar.

Next, the values of Y_2 and Y_3 are compared to the value of Y_1 . These represent the respective ratios of the duration of half-beat notes and one-and-a-half-beat notes to one-beat notes after linear regression. The results are given in Table 2. Y_2/Y_1 is very close to 0.5 for both recordings. Y_3/Y_1 is close to 1.5 for the 1982 recording. For the 1956 recording, the range of Y_3/Y_1 is bigger, but still centers around 1.5. This indicates that the interpretation of the notes categorically as “half-beat” and “one-and-a-half-beat” notes is appropriate.³⁵ One can also see that there is not much change in the temporal organization by the performer over a span of nearly 30 years. The results for the second and third sections follow a similar trend. Please see Appendix 2 for details of the statistical analysis.

The graphs show that there are deviations from the regression line. Such deviations are understandable because timing variations are normally present in musical performances (Penel and Drake 2004). However, with deviations from the regression line, one may query whether some adjacent pairs of transcribed “one-beat note” and “half-beat note” may actually have shorter durations, such that the total duration of the pair is similar to that of a one-beat note. To look into this, we have selected a few instances with interpolated half-beat notes to examine the duration of the individual notes, using the data from the first section in harmonics of the 1956 recording as shown in Tables 3 to 5 below. One can see that, no matter whether the duration of the half-beat note (G in the second phrase, C in the fifth phrase, F and

	1956 recording	1982 recording
Y_2/Y_1	0.526 to 0.525	0.491 to 0.556
Y_3/Y_1	1.371 to 1.570	01.444 to 1.492

Table 2. Ratios of Y_2/Y_1 and Y_3/Y_1 for both recordings.

35. Clayton (1996, 327) considers that “auditory perception being in many respects categorical, time intervals which are roughly equal will be perceived as equal, and deviations are likely to be perceived as accents or as simply giving ‘life’ to a performance.”

Pitch	A	G	F	C	C	C
Note Value	1 beat	0.5 beat	1 beat	1 beat	1 beat	1 beat
Duration	0.624	0.342	0.590	0.640	0.593	0.644

Table 3. Durations of musical notes in the second phrase of Example 10 in seconds.

Pitch	F	F	D	C	A	A
Note Value	1 beat	1.5 beat	1 beat	0.5 beat	1 beat	1.5 beat
Duration	0.546	0.783	0.490	0.278	0.509	0.777

Table 4. Durations of musical notes in the fifth phrase of Example 10 in seconds.

Pitch	G	F	G	D	C	C	C
Note Value	1 beat	0.5 beat	1 beat	0.5 beat	1 beat	1 beat	2 beats
Duration	0.496	0.300	0.510	0.243	0.524	0.494	1.009

Table 5. Durations of musical notes in the eighth phrase of Example 10 in seconds.

D in the eighth phrase) is added to that of the preceding note or the ensuing note, the sum is much bigger than the duration of other one-beat notes.

Overall, the findings above confirm the accuracy of our transcription. The transcription of some notes as triplets by Xu Jian described above is not strictly accurate, but probably represents a desire to rationalize the transcription in order to avoid the occurrence of extra “half-beats.” The section is also not in free rhythm. There are stretches of regular pulses which can be perceived clearly, though the sequences are broken irregularly by “half-beats.”

Theoretical discussion regarding the metrical hierarchy usually centers around levels of the hierarchy higher than the basic pulse, namely the meter level as well as the hypermeter level (Ito 2013). Here, in “pulsation with interpolated half-beats,” the interruptions are at the basic pulsation level. One may argue that the basic beats can be subdivided into two, and the “half-beats” can be counted as the basic pulse. However, in this music example, counting the half-beats as the basic pulse means a rate mostly over 200 beats per minute. As we pointed out earlier, periodic sound stimuli of over 120 beats per minute are often perceived as subdivisions of a slower beat (Duke 1989). One may argue that these subdivisions can still be the basic pulsations, and the perceived slower pulsations are at a higher level of the metrical hierarchy. Then, this category of “pulsation with interpolated half-beats” is analogous to a changing meter where there are interpolations of an extra beat in a passage in duple meter. However, we believe that this way of perceiving the music is unlikely. Here, the majority of the periodic

stimuli are actually the one-beat notes. The half-beat notes are mostly interspersed between the one-beat notes, instead of grouping together as stretches of half-beat notes. It will be very unlikely that a listener would be entrained to a layer of very rapid pulsations below the layer formed by the one-beat notes. Yet, this layer formed by the one-beat notes is perceived to be shifting at irregular time intervals by half a beat, and the listener is sometimes not sure whether certain notes are “on a beat” or are syncopated. A listener may try to infer a metrical pattern, but will soon find the pattern ambiguous or unsustainable. Indeed, with irregular interruptions to periodicity *both* at the basic pulse level and at higher levels, the metrical structure can be very ambiguous, because it is often determined by the relationship between pulsations at different levels of the hierarchy. In this particular case, instead of being entrained to layers of regular pulsations, the listener’s expectations or “projection” depend more on the local details, the “uniqueness or particularity arising both from the measure’s internal constitution and from its assimilation of prior events (and its potential for being assimilated to future events)” (Hasty 1997, 149). This deserves further theoretical discussion, which is beyond the intended scope of this paper.

As to how the performer created this temporal organization, we consider that the performer might just have in mind the one-beat and half-beat notes as long and short notes.³⁶ These combine to create iambic or trochaic patterns.³⁷ Regarding the one-and-a-half beat notes, it is less likely that the performer considered these simply as a type of long note. These are seldom preceded or followed by a half-beat note. These were more likely perceived as a combination of a one-beat note and a half-beat note. With the iambic or trochaic patterns, the performer may have wanted to create an effect of syncopation or hemiola, but at the same time, was *not* concerned with maintaining an overall regular pulsation or any higher-order regularity.³⁸ As an analogy, it is like writing Chinese poetry with prosodic features in mind but not following the strict requirements of traditional poetic forms.³⁹ Thus, the effect becomes pulsation with interpolated half-beats.

Such patterns of interpolated half-beats were used not only by Zhang Ziqian and Tsar Teh-yun. Some other *qin* masters of the previous generation also used such patterns in selected pieces. In Example 12 is a section from *Bijian liuquan* handed down by the Guangdong master Yang Xinlun (1898–1990).

36. As pointed out earlier, *qin* masters often modify temporal elements passed down from previous generations. Zhang Ziqian, like many traditional *qin* masters, did not discuss in any detail how he determined the rhythm of his music. Thus, this can only remain as a speculation.

37. Discrete patterns of combinations of long and short notes were described in ancient Greek rhythmic theory and given specific names. These rhythmic patterns also possess more recent historical significance: Wagner may have had ancient Greek rhythm in mind when he composed a scene in *Tristan* with changing meter (Cheong 2018).

38. Syncopations are common in *qin* music. One can see many examples of these in the transcriptions by Bell Yung (1997). Syncopations are also commonly used in some operatic genres like Cantonese opera (Yung 1989, 70). Hemiolas are less commonly encountered in traditional Chinese music but, similar to syncopations, they involve shifting accents.

39. Traditional Chinese poetry from the Tang Dynasty onwards had strictly prescribed formats in terms of line lengths, rhyme, tone patterns, and couplet-based structure.



Example 12. A section from *Bijian liuquan* handed down by Yang Xinlun, with interpolated half-beats.

TEMPORAL ORGANIZATION OF QIN MUSIC BEFORE THE TWENTIETH CENTURY

The above discussion of the temporal organization of *qin* music is based on the performance practice of the current and previous generation of *qin* players. One may question whether or not this also represents the practice before the twentieth century. We argue that this is likely to be so. The *qin* tradition emphasizes oral transmission from teachers to students. Traditional *qin* practices are venerated, and details of performance practice are meticulously learned through the transmission process. Though flexibility in playing a piece is encouraged, the changes are usually at the level of fine detail. Broad directions and concepts would not have changed dramatically within a few generations.

One Qing Dynasty *qin* handbook, *Zhang Jutian qinpu* (1844), provides support for this claim. In this handbook, in addition to traditional *qin* pieces, there are arrangements from vernacular songs and operatic pieces. For these arrangements, *banyan* markings were added to indicate a regular metrical structure. However, for the traditional *qin* pieces, some had dots to indicate pulsation without differentiation into hierarchies as in *banyan* markings. Some even had no indication of pulsation at all. This indicates that, according to the compiler of the handbook, the metrical structure of the traditional pieces, unlike the arrangements from vernacular and operatic pieces, was not regular and hence not suitable to have *banyan* markings added.

IMPLICATIONS OF THESE FINDINGS

The above discussion highlighted the characteristics in various special categories of temporal organization in *qin* music, ranging from irregular disruption of a regular meter, to pulsation with interpolated half-beats, to free rhythm. There are a number of contextual factors affecting the freedom of metrical structure in *qin* music. In Western tonal music, one function of regular meter is to facilitate collective performance in an ensemble. On the reception side, metric entrainment allows listeners to synchronize their perception with musical rhythms. A regular meter in most genres of traditional Chinese music probably serves similar functions. In contrast, one can argue that, in the past, because the *qin* was usually played solo, and usually played for cultivating one's heart rather than for an audience, there

was no need to keep to a regular meter.⁴⁰ Regarding notation, one may postulate that the freedom in metrical structure is one underlying reason for the lack of temporal instructions in the *qin* notation. On the other hand, this very lack of temporal instructions together with the flexibility allowed in manipulating the rhythm may have further enhanced players' freedom in interpreting the metrical structure. At the ideological level, the use of temporal organization more sophisticated than the regular meters found in usual vernacular genres may represent a subconscious effort to differentiate elegant *qin* music from the vernacular. Furthermore, music without a regular meter might be imagined as more akin to music of the distant past. In the cultural tradition of the literati, a quest for antiquity is a common ideological concept.⁴¹ Skeptics may even postulate that, as the literati were not trained professional musicians, but played the *qin* as amateurs, their knowledge and skill might have limited their ability to keep the pulse in complex pieces originally in regular meter. While these are plausible factors, we consider that the distinctive aesthetic and philosophical perspectives of the *qin* players are particularly important in the development of this freedom in metrical structure.

At the aesthetic level, *qin* music is revered for the poetic mood produced instead of attractive melodies or lively rhythmic patterns.⁴² The beauty of *qin* music does not rely on harmony or polyphony. Instead, fine manipulation of timbre and rhythmic details is pivotal in bringing out the poetic mood of a piece. A changing meter brings freshness to the music. Free rhythm at the beginning and end of a piece creates a broad and serene poetic mood. Pulsation with interpolated half-beats creates an exquisite lively mood. Ambiguities created by a lack of higher-order regularity add fine nuances to the expressiveness of the music. Through such manipulation, the carefree mood of a recluse living in the mountains, the tranquility of wild geese alighting on smooth sand, the vastness of flowing water, and the elation of the drunk may be depicted.⁴³

At the philosophical level, as mentioned earlier, *qin* music has been heavily influenced by Confucian, Daoist, and Buddhist philosophies. In earlier papers, the first author discussed inconspicuous acceleration (Tse 2007), ambiguity of pitch, and use of soft non-plucked gliding notes at accent points (Tse, forthcoming) as features of *qin* music that reflect paradoxes and

40. The performance context of *qin* music has been changing over the past century. Currently, *qin* music is often played in concerts. Traditional pieces have been arranged for ensembles. Yet, the freedom in metrical structure of traditional pieces has been mostly maintained. In recent reconstructions from old scores and in new compositions, freedom in metrical structure is also the norm in many cases. The freedom in metrical structure is thus more related to the underlying aesthetic and philosophical perspectives shaping the traditional performance context. These perspectives will be discussed later in this section.

41. A quest for antiquity was probably rooted in the Confucian and Daoist ideologies, which considered that the world order was better in ancient ages and one should attempt to follow the life of the ancients (Liu 2001, 225).

42. In other art forms of the literati like painting and calligraphy, the poetic mood is also an important goal of artistic expression.

43. "A recluse living in the mountains" (*Shanju yin*), "Wild geese alighting on smooth sand" (*Pingsha luoyan*), "Running water" (*Liushui*), and "Drunken elation" (*Jiukuang*) are titles of famous *qin* pieces.

opposites, which are characteristic concepts of Daoist philosophy.⁴⁴ Here, the freedom to manipulate the temporal organization without any prescribed constraints may reflect another aspect of the influence of Daoism, a quest for freedom from worldly constraints. “The Taoist way of achieving freedom is to give up the self, to identify the self with the Tao—great nature—so that the constraints will not apply as such” (Ni 1993, 25).

Indeed, a number of traditional Oriental art forms have been affected by Daoist philosophy as well as by *Chan (Zen)* Buddhism, which was likely influenced by Daoism during its early development in China (Wu 1985; Fang 1995). Important perspectives like acceptance of imperfection and impermanence (*wabi-sabi*) in Japanese architecture, interior and garden design, flower arranging, and raku ceramics (Juniper 2003; Koren 2008), and the concept of nothingness in Chinese painting and calligraphy (Fan 2010), have both Daoist and *Chan (Zen)* Buddhist roots.⁴⁵ The life of the literatus was subject to many constraints in worldly matters, and strict constraints were present even in art forms like poetry. Playing *qin* music with freedom in placing accents, without concern for maintaining an overall metrical pattern, or indeed any defined hierarchical structure, allowed the literatus to achieve a kind of mental freedom in a Daoist way.

CONCLUSION

A general lack of higher-order regularity in temporal organization is one important feature that differentiates *qin* music of the Chinese literati from most other genres of traditional Chinese music. But this has seldom been discussed in scholarly circles. To fill this gap, the present paper has provided a systematic discussion of the freedom in metrical structure characteristic of *qin* music.

Qin music has been heavily influenced by Confucian, Daoist, and Buddhist philosophies. Because rhythmic elements in *qin* music are not notated in the tablature score, and fine nuances arising from a variety of fingering techniques can affect the perception of phrasing and hierarchies of pulsation, studying the metrical structure of *qin* pieces is an act of interpretation and depends on a thorough grasp of traditional performance conventions and common melodic patterns in the music. Both authors being experienced *qin* players, this study is based on our interpretation of music of important *qin* players of the present and previous generations. Categories of temporal organization without higher-order regularity identified by the authors include “changing meter,” “metrically ambiguous,” and “free rhythm,” as well as the particular category of “pulsation with interpolated half-beats,” forming a continuum

44. There are famous sayings in Daoist texts demonstrating concepts of paradoxes and opposites. Laozi (Lao Tzu), the founder of the Daoist philosophy over 2000 years ago in his classic book *Tao Te Ching* said “the weak overcomes the strong” (Lin 1977, 64), “the great voice sounds faint” (Lin 1977, 78), and “great craftiness seems clumsy” (Lin 1977, 85).

45. In this perspective, nothingness is a precondition for aesthetic appreciation and an essence in artistic creation. Nothingness as a formative element of artworks can be represented by *liukong* (leaving blank) in Chinese painting and *bubai* (arranging whiteness) in calligraphy (Fan 2010).

where each category merges into the next. Our case study of a representative example of the last category demonstrated an accelerating basic pulsation interrupted irregularly by interpolated half-beats, defying the usual binary division of musical time organization in world music studies into categories with or without a basic regular pulse. This interpretation is confirmed by measurement of inter-onset intervals and linear regression analysis. With the irregular interruption, the listener is sometimes not sure whether certain notes are “on a beat” or are syncopated. Together with irregular interruptions to periodicity at higher levels, the metrical structure can be very ambiguous. The performer might have wanted to create an effect of syncopation or hemiola, but was not concerned with maintaining an overall regular pulsation or any higher-order regularity. The freedom in metrical structure in *qin* music of the literati demonstrates the importance of contextual factors in shaping musical characteristics. The distinctive aesthetic and philosophical perspectives of *qin* players are particularly important in developing this freedom, which we regard as a Daoist conception. The temporal organization in *qin* music, in particular, the special category “pulsation with interpolated half-beats,” should provide useful insights for future work on temporal organization in world music, and indeed toward future work on the typology of temporal organization in music in general.

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GLOSSARY OF CHINESE TERMS AND NAMES

baban 八板

banyan 板眼

Bijian liuquan 碧澗流泉

bubai 布白

Chan (Zen) 禪

Changmen yuan 長門怨

Chuncaotang qinpu 春草堂琴譜

dapu 打譜

diedang 跌宕

gongche 工尺

Guanshan yue 關山月

Guan Pinghu 管平湖
Jiao'an qinpu 蕉庵琴譜
Jiukuang 酒狂
kaopai 拷拍
kuaiban 快板
Kwan Shing-yau 關聖佑
lao Meihua 老梅花
Laozi 老子
Liangxiao yin 良宵引
liukong 留空
Liushui 流水
liushui ban 流水板
Longxiang cao 龍翔操
Mei'an qinpu 梅庵琴譜
Meihua sannong 梅花三弄
Pingsha luoyan 平沙落雁
qin 琴
Qiu fengci 秋風詞
ruman 入慢
rupai 入拍
sanban (free beat) 散板
sanban (third beat) 三板
Shanju yin 山居吟
shaoxi 少息
sizhu 絲竹
Tao Te Ching 道德經
Tsar Teh-yun 蔡德允
Xishan qinkuang 谿山琴況

Xiaoxiang shuiyun 瀟湘水雲

Xu Jian 許健

Xu Shangying 徐上瀛

Yang Xinlun 楊新倫

yaoban 搖板

Yao Bingyan 姚丙炎

Yulou chunxiao 玉樓春曉

Zhang Jutian qinpu 張鞠田琴譜

Zhang Ziqian 張子謙

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APPENDIX I

Transcription of the first section in harmonics of a common version of *Meihua sannong* based on *Chuncaotang qinpu*.

Example A1. The first section in harmonics of a common version of *Meihua sannong*.

The passage has a regular basic pulse with a changing meter. The phrases here correspond to the phrases in the version by Zhang Ziqian as in Table A1.

Common Version	1st	2nd	3rd	4th	5th	6th	7th	8th
Version by Zhang Ziqian	1st	2nd	3rd	4th	5th	8th	9th	10th

Table A1. Corresponding phrase numbers in the two versions of *Meihua sannong*.

APPENDIX 2

Details of statistical analysis for the second and third sections.

In Table A2, the regression equations and the coefficient of determination (R^2) of the three types of notes, the initial tempos, and the ratios of Y_2 and Y_3 to Y_1 are shown.

			1956 recording	1982 recording
2nd section	Regression equation and R^2	One-beat notes	$Y_1 = -0.0037x + 0.5795$ $R^2 = 0.7188$	$Y_1 = -0.0041x + 0.5651$ $R^2 = 0.4829$
		Half-beat notes	$Y_2 = -0.0023x + 0.3117$ $R^2 = 0.613$	$Y_2 = -0.0021x + 0.2833$ $R^2 = 0.3668$
		One-and-a-half-beat notes	$Y_3 = -0.0114x + 1.0085$ $R^2 = 0.6257$	$Y_3 = -0.0074x + 0.8644$ $R^2 = 0.6553$
	Initial tempo of one-beat notes		104 bpm	106 bpm
	Y_2/Y_1		0.534 to 0.522	0.487 to 0.523
	Y_3/Y_1		1.735 to 1.390	1.530 to 1.446
3rd section	Regression equation and R^2	One-beat notes	$Y_1 = -0.0025x + 0.5089$ $R^2 = 0.5266$	$Y_1 = -0.0029x + 0.483$ $R^2 = 0.5085$
		Half-beat notes	$Y_2 = -0.0021x + 0.2768$ $R^2 = 0.4907$	$Y_2 = -0.0007x + 0.2311$ $R^2 = 0.0651$
		One-and-a-half-beat notes	$Y_3 = -0.009x + 0.8503$ $R^2 = 0.5597$	$Y_3 = -0.004x + 0.7304$ $R^2 = 0.1228$
	Initial tempo of one-beat notes		118 bpm	124 bpm
	Y_2/Y_1		0.532 to 0.509	0.461 to 0.537
	Y_3/Y_1		1.588 to 1.739	1.494 to 1.537

Table A2. Analysis of the second and third sections in harmonics of both recordings.

Overall, the 1982 recording is slightly faster than the 1956 recording. For both recordings, the initial tempo of the second section in harmonics is slightly faster than the first section, and the third section in harmonics is slightly faster than the second. The other features are very similar to those of the first section. Gradual acceleration is present for all the notes, except the half-beat notes of the third section in the 1982 recording, which show no significant change over time. Y_2/Y_1 is around 0.5 for both recordings, and Y_3/Y_1 is around 1.5 for the 1982 recording. For the 1956 recording, the range of Y_3/Y_1 is bigger, but still centers around 1.5. This indicates that the interpretation of the notes categorically as “half-beat” and “one-and-a-half-beat” notes is appropriate.