Flowing Waters and the Flow of Time:
Guan Pinghu’s Interpretation of Flowing Waters
Lu Wang

Submitted in partial fulfillment of the
Requirements for the degree of
Doctor of Musical Arts
in the Graduate School of Arts and Sciences

COLUMBIA UNIVERSITY
2012
Copyright 2012
Lu Wang
All rights reserved
Abstract

Flowing Waters and the Flow of Time: Guan Pinghu’s Interpretation of Flowing Waters

Lu Wang

The search for alternative approaches to time outside of the Western concert music tradition has provided inspiration for many contemporary composers. This essay is a brief examination of temporal models taken from traditional Chinese guqin music. Focusing on the famous composition Flowing Waters, the study looks at aspects of temporality in the piece: the use of traditional notation (the jianzipu spectrum as well as brush-painting illustrations) with transcribed comparisons of individual interpretations, various finger-sliding techniques, the dual melodic and harmonic roles of single lines, and even the tuning system as a path toward revealing a new way of composed time, that which reflects the aesthetics of brush-stroke calligraphy, brush-painting, and ancient Chinese philosophical views on nature and the arts. Continual movement of textures, fluidity of materials, organic transitions, and gradual growth and decay of sound in space are the unique characteristics of this piece that become the main focus of the analysis.
**List of Figures**

<table>
<thead>
<tr>
<th>Fig.</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The traditional qin</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>An extract from 琴曲集成 (Qin Qu Ji Cheng), in early wenzipu notation</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Transcription of Guan Pinghu’s <em>Flowing Waters</em>, opening accelerando to approximately 0:45</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>Tempo change (accelerando) from quarter-note = 80 to 104.</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Dramatic ritardando from quarter-note = 100 to 50, near the conclusion</td>
<td>11</td>
</tr>
<tr>
<td>6</td>
<td>Jianzipu spectrum notation showing finger positions and techniques as related to poetic/naturalistic gestures</td>
<td>13</td>
</tr>
<tr>
<td>7a</td>
<td>Jianzipu spectrum notation of a passage from <em>Flowing Waters</em></td>
<td>15</td>
</tr>
<tr>
<td>7b</td>
<td>Transcription of Guan Pinghu’s version of the same passage</td>
<td>15</td>
</tr>
<tr>
<td>7c</td>
<td>Gong Yi’s version of the same passage</td>
<td>15</td>
</tr>
<tr>
<td>7d</td>
<td>Comparison of the rhythmic profile of both renditions</td>
<td>16</td>
</tr>
<tr>
<td>8a</td>
<td>Detail of a brushstroke for the character <em>yi</em> (one)</td>
<td>17</td>
</tr>
<tr>
<td>8b</td>
<td>Endless ways of writing the character <em>yi</em> (one)</td>
<td>17</td>
</tr>
<tr>
<td>9</td>
<td>自叙帖 (Zi Xu Tie), handscroll written in 777AD by Tang Dynasty monk 怀素 (Huai Su) in the cursive script style</td>
<td>18</td>
</tr>
<tr>
<td>10</td>
<td>Jianzipu spectrum notation for right hand finger-slides</td>
<td>19</td>
</tr>
<tr>
<td>11a</td>
<td>Extracts from “A Gesture-based Typology of Sliding-tones in Guqin Music,”</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>by Li Hanbing and Marc Leman</td>
<td></td>
</tr>
<tr>
<td>11b</td>
<td>The opening bars of Guan Pinghu’s performance of <em>Flowing Waters</em></td>
<td>22</td>
</tr>
<tr>
<td>12a</td>
<td>Pitches indicated in the jianzipu spectrum, without additional embellishment</td>
<td>22</td>
</tr>
<tr>
<td>12b</td>
<td>The left hand continues the plucked tones of the right</td>
<td>23</td>
</tr>
<tr>
<td>13</td>
<td>The left-hand rhythmic slides continue the end of each line</td>
<td>23</td>
</tr>
<tr>
<td>15a</td>
<td>A spectral resynthesis</td>
<td>24</td>
</tr>
</tbody>
</table>
Fig. 15b: Standard notation of Fig. 15a  

Fig. 16: 自叙帖 (Zi Xu Tie), handscroll written in 777AD by Tang Dynasty monk 怀素 (Huai Su) in the cursive script style  

Fig. 17: Brush-Painting 黃山文筆峰 (Huangshan Wenbifeng) by 張大千 Zhang Daqian  

Fig. 18: Transcription of the first 42 seconds  

Fig. 19: Transcription from 0:42 to 0:51  

Fig. 20a: A transcription of Guan Pinghu’s interpretation of Flowing Waters by 许健 (Xu Jian), with verbal notations below the transcription from 天问阁琴谱 (Tianwenge Qinpu)  

Fig. 20b: After the ritardando, the emergence of a new melody coming out of the accompanimental figure.  

Fig. 21: The open strings of the guqin in Flowing Waters  

Fig. 22: Tuning scheme based on common tones of Hui nodes on different strings
Acknowledgements

In early February 2005, when I was residing in Beijing, an email from America reached me, changing my life both personally and professionally. I will always remain grateful to the faculty of Columbia University, which generously brought me to the United States to study. I have been honored to be a doctoral candidate in composition in the music department. Seven years flew by, and in learning from wonderfully diverse professors and colleagues, attending concerts and festivals, teaching four kinds of undergraduate music courses, and meeting performers in the city, I can’t express how much I appreciate the opportunity to be a part of Columbia University and New York City.

As the Chinese idiom goes, “One can see the mountain more completely if one steps out of it.” Living and studying in New York has provided me with a unique view of my home country and culture. My increasing interest in incorporating linguistic elements of Chinese folk music and traditional instruments into my own composition has led me not only to fascinating sound worlds but also to a deeper contemplation of social and societal problems in my current country.

The choice of the topic of this dissertation on guqin music is in homage to my mentor Chou Wen-chung, who has always been supportive and enlightening since we first met in China in 2004. He has inspired me to do research into Chinese traditional arts and philosophy and thereby search for my own compositional language. Much gratitude goes to my husband, Anthony Cheung, whom I met in the music department, and who has accompanied, taught, supported, inspired and shared the ups and downs of life with me. And finally thank you to my parents, whose passion towards life and music and boundless love are the treasures of my life.
Introduction

Bo Ya always played the Qin in the mountains by himself. One day, the woodcutter Zi Qi came by quietly, stopped and listened. Without words, he comprehended the music. It was about the flow of water. From that time on, Bo Ya played for him in the mountains, until one day Zi Qi suddenly passed away. Bo Ya could not bear the loss of his only soul mate, so he threw his Qin off the cliff, never to play again.

Flowing Waters is an ancient classical Chinese qin piece derived from this myth in the Spring and Autumn Period of the Eastern Zhou dynasty (approx. 8th century BC). This story carried the legend of two friends’ deep communication through music for more than 2000 years. "智者乐水" (Zhi Zhe Le Shui) is a Confucian idiom suggesting that intellectuals are fond of water because their minds and thoughts are active and flowing as water.1 Therefore, Flowing Waters does not merely describe the images and sounds of water but is an analogue for the beautiful mentality, creativity and strength of the enlightened mind.

The qin (Fig. 1) is a seven-stringed zither instrument, which, together with chess, calligraphy, and brush painting, comprises the symbolic four artistic manners that traditional Chinese literati were required to master to be considered “well-cultured.”

Figure 1: The traditional qin

As Confucius says in the Analects (论语), “The mind is aroused by the odes. Character is established by the Rules of Propriety. Completeness is received by music.”2 By music, he is referring to the tradition of qin music for self-enlightenment. One can see that music in the
time of Confucius is already considered the highest form of art among all the disciplines. Playing the qin consists not only of technical mastery, but also aspires to the highest cultural, philosophical, and artistic pursuits of sophisticated intellectuals. Ancient literati who played the instrument were also experts in the three other disciplines, and thus associated qin music closely with the merging of colors in brush painting, the movement of brushstrokes in calligraphy and poetry, and the spiritual practices of Daoism, Confucianism, and Buddhism. The relationships between these aesthetic factors will be explained in detail later in the essay.

The purpose for playing the qin among the literati is thus to express personal emotion, gain philosophical understanding, and meditate on observations from nature. Rather than displaying technical brilliance or engaging with a public for the purposes of entertainment, the practice is founded on the ideals of an absolute and personal art form, designed for self-cultivation.

In comparison to other Chinese instruments, the qin has the most tranquil sound of all. The instrument was made with the intention to be played in a very intimate setting, for no more than a few listeners. These artistic characteristics and social functions of qin practice have affected the way the music has been received, notated, and inherited throughout Chinese music history. For more than two thousand years, qin music was taught primarily by oral practice. Many compositions bore a title as well as a poem or painting on the subject of the work. These interactions with other art forms inspired the qin players’ imagination and stimulated their inner reflections. It is not difficult to understand why every member of the literati created his own interpretation from the same original tune or poem. The musical atmosphere and expressive ethos were brought into being by each unique adaptation.

Today, there are roughly three thousand surviving qin pieces in the repertoire. This total number represents adaptations from about five hundred actual notated traditional scores. The written qin score, the 减字谱 (jianzipu) spectrum, was not developed until the
Tang dynasty by 曹如 (Cao Ru), out of the previously more elaborate 文字谱 (wenzipu) system, which reads like a series of verbal instructions using Chinese characters. (There is only one extant qin score in early wenzipu notation, a piece titled 碣石调幽兰 (Jie Shi Diao You Lan), from the Tang Dynasty, as seen in Fig. 2.)
Figure 2: An extract from 琴曲集成 (Qin Qu Ji Cheng), in early wenzipu notation.

Jianzipu spectrum notation represents a different purpose for notation, in contrast with a traditional western system. As with some types of tablature notation, it provides
informative details on fingering techniques and string positions; neither durations nor pitch names are definitively labeled, but their results are implied by the instructions. As a result, temporal and timbral varieties are innumerable. Each performance becomes an improvisatory endeavor with abundant surprises and variants of tone color, rhythm and structure.

On the topic of the qin’s timbre, the scholar 徐上瀛 (Xu Shangying) from the late Ming dynasty explained in his treatise 溪山琴况 (Xi Shan Qin Kuang) that there are twenty-four different categories of timbres in traditional qin playing. These timbres are poetic illustrations and interpretations, and are labeled by aesthetic rather than concrete performing techniques. As for technical divisions and categorizations of qin timbres, there are three basic types of sounds:

- San Yin: open strings
- Fan Yin: harmonics
- An Yin: fundamental fingered tones that are produced by the depressing the left hand at certain positions while plucking the string with the right hand

Accounting for all seven strings, there are an equal number of open strings (San Yin), with thirteen Hui (white dots showing the nodes for fingering harmonics) for each, which allow a total of 91 harmonics (Fan Yin) positions, and 147 basic, non-harmonic fingered note positions (An Yin). Thus, a total of 245 sounding pitch positions are available on the qin, ranging from C2 to D6, a total range of four octaves plus a major second.

In 1977, Guan Pinghu’s interpretation of Flowing Waters (from the 1950s) was selected for the Voyager 1 spacecraft’s “Golden Record” as the sole musical work representing Chinese culture. It is one of the most well-known and oft-cited interpretations of qin literature. The effortlessness of its natural flow and mastery of improvisatory materials have greatly influenced my own creative work as well. The purpose of this essay is to analyze the formal and temporal structures of this piece and Guan Pinghu’s particular
interpretation, as well as the mixed pitch/noise continuum in its sound world. The analysis will focus on three main sections.

- The use of principles from standard musical forms of traditional Chinese music.
- The free transformation of melody to harmony and vice-versa.
- Noise and noise-pitch mixtures with finger-slide techniques.

Issues regarding the tuning system, timbral varieties, various finger techniques, and notation and its philosophical reasons and implications will also be addressed. Again, my main interest in analyzing this version of _Flowing Waters_ is to find out how the music flows through time, and how such an interpretation captures the poetic and literal meanings behind such an elusive concept.

I. General Background on Guan Pinghu's _Flowing Waters_

This particular interpretation of Flowing Waters by Guan Pinghu is based on the score from 天问阁琴谱 (Tian Wen Ge Qin Pu), collected by 張孔山 (Zhang Kongshan) around 1876. The score was first recorded in a Ming dynasty (15 Century) volume, 神奇秘谱 (Shen Qi Mi Pu), which contains sixty-four qin pieces. It is the oldest qin score collection and was edited by the son of the first emperor of the Ming Dynasty, 朱权 (Zhu Quan).6

The original written score of _Flowing Waters_ is constructed in nine sections. Each section depicts different kinds of movement for flowing water, some of which are peaceful and elegant, while others are about aggression, drama, and energy. The verbal descriptions include these types: crystal brooks, the convergence of two rivers, the quick running of rivers off a cliff, the striking combat of water against stones, great rivers embraced by the ocean, etc.

In the same way that most other traditional qin pieces are inspired by poetry and painting, the title _Flowing Waters_ clearly suggests that the transformation of musical materials and motion follows a naturalistic, poetic impulse. As mentioned before, the title and images
are only intended to provide inspiration to qin interpreters but are not the absolute, literal message, and do not have to constrain the imagination of the performer.

The idea of ever-changing, organically growing and non-exact repetitions of any sort in this piece reflect a saying from Heraclitus: “You cannot step twice into the same river, for other waters are ever flowing onto you.” This articulates the metamorphosis of nature and our interaction with and dependence on it.

II. Formal and Temporal Considerations

If we look at the overall temporal scheme of this piece, it follows the basic structural principle in Chinese opera known as 散慢中快散 (San Man Zhong Kuai San), which refers to a continuum of tempo changes: music starts from being out-of-time and without pulse, gradually introduces inconsistent beats, moves towards a slow tempo, then accelerates to a medium tempo with a clearer ictus, consistently accelerates to a fast tempo, and towards the end returns back to non-metered free time, which reflects the beginning. In Guan Pinghu’s interpretation of Flowing Waters, tempo changes reflect the 散慢中快散 formal structure very clearly:

0”- 30”: Quarter-note = 46-63
30”- 42”: Quarter-note = 63-72
42”-1’22”: Quarter-note = 72
1’22”-1’45”: Quarter-note = 72-76
1’45”-2’25”: Quarter-note = 76
2’25”-2’57”: Quarter-note = 76-80
2’57”-5’00”: Eighth-note = 80-84
5’00”-5’20”: Unstable accelerating tempo
5’20”-6’35”: Quarter-note = 104
6’35”-7’18”: Quarter-note = 104-100
7’18”-7’30”: Quarter-note = 50

Thus the five different temporal sections can be divided approximately in this way:

散 (Free time): 0”- 42”
慢 (Slow tempo): 42”-1’22”
中 (Medium tempo): 1’22”-5’00”
Although the divisions of tempi are shown above, there are rarely exact moments when the tempo changes crystallize. The gradual speeding up and slowing down between the tempi make the continuation of the piece very organic and seamless. If measured strictly throughout the work, there can be a pushing forward or pulling back within a bar, but the deviations are usually slight. For example, the first tempo change (from quarter-note = 46 to 63) occurs as a very subtle, continuous acceleration lasting from the opening to about thirty seconds into the piece, within a single phrase and without any rigid demarcations of time.

The second clear tempo change (from quarter-note = 63 to 72) occurs over twelve seconds, or four bars, by a successive free acceleration from 30” to 42”, also rather unseeingly. Figure 3 shows the progression of the entire opening, and the gradual acceleration from quarter-note = 46 to 72.
While the gradual distortion of time is natural and completely free in qin music, certain textures without strong beat indications and rhythmic cells function also as transitions between dramatic tempi changes, e.g. the accelerando from quarter-note = 80 to 104 at 5:00 to 5:20 (Figure 4).

This change occurs towards the end of a long period of glissando textures, in which floating and interwoven glissando movement (both ascending and descending) is the strongest sonic feature for a long enough period to create the sensation of non-metrical time. Acceleration and deceleration are also naturally imbedded in this glissando texture, resulting in tempo distortion when combined with the gliding up and down motion on the strings. Another instance of a dramatic tempo change takes place towards the end of the piece, when a
decelerando results in a halving of the tempo (from quarter = 100 to 50; Figure 5). One perceives this shift as eighth- and sixteenth-notes in the new tempo are introduced first, before a further ritardando introduces longer notes and finally the coda.

Fig. 5: Dramatic ritardando from quarter-note = 100 to 50, near the conclusion.

All the unique and flexible ways of treating time in this piece belong to the tradition of qin playing. With the Jianzipu spectrum, notation does not precisely record and require the exact duration execution of each tone, allowing musicians to interpret their personal feeling of time with every single note and gesture; events occur on the note-to-note level much more than in Western music, which often is more felt on a phrase-to-phrase basis. The philosophy of qin music is to create an inner reflection of music in each individual, not as a singular “work of art” meant to be reproduced in performance by showing varying degrees of competence or prowess. The notation of the music itself reinforces this notion, in that it is not a descriptive visual representation of how the music should sound in terms of the parameterization of melodic shape, harmonic direction, intensity, duration, etc., but rather a set of flexible instructions toward realizing existing, shared cultural and poetic tropes.

III. Time and the Poetry of Notation

This is an example of a Jianzipu character. The notation instructs the performer to press the left thumb down on the fifth string at the seventh Hui (harmonic node position), and to use the right index finger to pluck the string. Despite a relative openness toward
temporal aspects, there is ample information on fingering techniques from the Jianzipu spectrum, which includes: position of the finger (such as which finger(s) to use, the part of the finger's flesh or nail, etc.), direction of the pluck (whether it is directed inward or outward), and intensity of the attack (relative strength and weakness, sometimes illustrated with paintings). For instance, examples can encompass a tiger crouching or a dragonfly skipping along the water (Figure 6). Combined with visual illustrations of the poetic metaphors of paintings, the meanings of adjacent finger gestures become reinforced.
Fig. 6: Jianzipu spectrum notation showing finger positions and techniques as related to poetic/naturalistic gestures. 琴曲集成•风宣玄品•手绘图（QinQu JiCheng• Feng Xuan XuanPin• ShouShi Tu)

For reasons stated earlier, temporal and timbral varieties vary greatly among different interpreters. Using Flowing Waters as an example, one can see obvious differences in
the durations of some convincing interpretations: Guan Pinghu’s version is about 7’30”, Gong Yi’s adaptation is only 4 minutes, and Wu Wenguang’s interpretation is 9’11”. If we examine for a moment a small extract from the middle of the piece, we can clearly see the differentiation in approach by comparing transcriptions of the versions by Guan Pinghu and Gong Yi.

Figure 7 shows the identical passage, first with Jianzipu spectrum notation, then transcriptions of the two interpretations.

Fig. 7a: Jianzipu spectrum notation of a passage from *Flowing Waters*.

Fig. 7b: Transcription of Guan Pinghu’s version of the passage.

Fig. 7c: Gong Yi’s version of the same.
As we can see, both interpretations retain the same overall pitch material, with the central pitch center moving from A to F. The global rhythmic characteristics of the passage also carry through, with clearly delineated rhythmic patterns and beat divisions (Figure 6d).

![Comparison of the rhythmic profile of both renditions.](image)

Both interpretations develop closely out of the variation and repetition of the core patterns. But the tempi and rhythms differ greatly, even though they both serve similar structural functions in their respective versions, occurring at this moment of driving rhythmic contrast approximately 2/5 into the overall length of the piece. On a local level, rhythmic flexibility between notes is created by adding various finger-slides and shades of vibrato. These subtleties of playing in traditional qin practice add to the continuous sonic connection between moving notes, emphasize the complete sound trajectory and direction of the central pitches, and make the overall melody smoother and more floating. Each individual note is treated as an independent and meaningful musical “life” through various types of actions: embellishing the decay of plucks through the bending of pitch, adding nail noise, prolonging resonance with excessive vibrato, and enriching a note’s presence from an attack to complete silence.

The composer and scholar Chou Wen-chung once gave an interesting example of the aesthetic by referring to all the ways in which a single line, the character for “one” in Chinese calligraphy, could be interpreted through brushstrokes. As shown in Figure 8a, a single brushstroke reveals a line that allows for details to emerge naturally alongside the
movement of the brush. This is but a single interpretation of an infinite number of possibilities for the same meaning.

Fig. 8a: Detail of a brushstroke for the character yi (one)

Sophisticated calligraphic characters are comprised of multiple unique individual strokes like in the above example. Not only is the visual appearance of each individual character unique, but also its independent meaning. A single character can signify anything from an isolated word to a phrase. Yet, when calligraphers write out the self-contained characters, they do so
using a continuous breath, with their brushstrokes following suit. The individual characters flow into adjacent ones, filling and connecting the space and separation between them, and keeping a generally uninterrupted flow to the motion (Figure 9).

Fig. 9: 自叙帖 (Zi Xu Tie), handscroll written in 777AD by Tang Dynasty monk 怀素 (Huai Su) in the cursive script style, detailing his own pedagogical background with calligraphy and his contemporaries’ appraisals of his craft.

There are many notational symbols in the Jianzipu spectrum used to describe finger-slides that are the equivalent of subtle brush strokes. Figure 10 shows a few examples for the right hand.
Fig. 10: Jianzipu spectrum notation for right hand finger-slides.

The column headers, from right to left, are annotated as follows:

십 : the right hand plays the open string without the left hand touching.

尸 : use the thumb nail to pluck inward, producing a strong, clear pitch. Meanwhile, the third finger rests upon the lowest string for support. If the attack is done partly by the nail and partly with the flesh of the thumb, the palm should lean at an angle. Too aggressive an attack is not recommended.
цы: use the flesh of the thumb to pluck outward while the third finger supports and rests upon the lower string.

木: use the tip of the flesh of the index finger to play gently in an inward motion; avoid leaning, and relax the thumb.

Aside from existing character-based notation, there have also been studies of sliding tones using traits that attempt to accurately represent gesture and articulation. In Li Hanbing and Marc Leman's paper, “A Gesture-based Typology of Sliding-tones in Qin Music,” sonic traits are categorized with newly invented symbols (Figure 11a), and a spectrum of variable vibrato types used during improvisation is mapped out (Figure 11b).

Fig. 11a: extract from “A Gesture-based Typology of Sliding-tones in Qin Music,” by Li Hanbing and Marc Leman, *Journal of New Music Research* Vol. 36:2, p. 62.
IV. Specific Fingering Techniques and Effects, From a Structural Point of View

The focus on various fingering techniques in the following section stems from their structural context. In *Flowing Waters*, diverse sound effects all serve the rhetoric of the flow of music.

Example 1:

In the opening of the piece as shown in Fig. 12, the left hand finger-slides modify the attack-resonance timbres emerging from the more direct plucks of the right hand, transforming them into soft and unstable upper partials by pitch-bending in both directions with the flesh.
of the fingers and nails during the decay of the initial attacks, which become smoothed out by the end of each phrase.

Fig. 12a: The opening bars of Guan Pinghu’s performance of *Flowing Waters*, showing the the left hand’s transformation of timbre during the decays of the right hand’s attacks.

The “x” note-heads in the bottom staff represent a mixture of pitch and noise resulting from the left hand finger-slides. The black triangle note-heads stand for high frequency noises with little pitch, obtained by sliding the nails of the left hand. If one only played the pitches indicated from the Jianzipu spectrum, without the embellishment of resonance made by sliding and vibrato in the left hand, the reduction would be as shown in Figure 12b.

Fig. 12b: Pitches indicated in the Jianzipu spectrum, without additional embellishment.

Example 2:

At 2’25” in Guan Pinghu’s recording, the left-hand finger slides are used more as extensions of the right-hand plucked notes, continuing the flow of the melody (Figure 13) with pitch-based finger-slides, as opposed to the noisier decays of the opening. The addition of neighbor tones (A-flat, for example) are the graceful result of sliding embellishments with the left hand.
Example 3:

In Figure 14, the added sliding noise in the left hand continues the momentum of the melodic line by imitating the last rhythmic pattern immediately after it has been played. This example of sliding notes mostly contributes to the rhythmic flow of the melody, as a kind of echoing refrain of the end of each phrase.

Since the finger-slides occur on the same strings as the plucked tones, which also share the same partials, the sliding pitches or noises thus sound more “in-tune” and resonant, due to the effect of sympathetic resonance, which occurs especially when two sounds share harmonics on the lower part of the harmonic series. The vibrations of one sound producing one set of partials reinforce the resonance of the other.

The organic musical flow depends not only on nail noises and bent pitches resulting from distorting the resonance of initial attacks, but also frequently from the combination of
nail noises with more pure pitches at the onset of plucked attacks. This blurs the sonic boundary between the pure, consonant timbre of pitch and a noise-based nail strike or slide. As demonstrated in Figure 15, even when sounds with “pure” harmonics are played, the finger gliding noises are produced simultaneously as part of the overall timbre.

![Spectral Resynthesis](image)

**Fig. 15 a:** A spectral resynthesis showing the complex, inharmonic timbres of attacks made from pure tones with their overtones combined with the noise of finger glidings.

The highlighted area reveals the complex inharmonicity of the mostly metal-like timbres, produced by striking the nail against the strings and the wood body of the instrument, simultaneous with the plucking of tones. According to the score, the pure harmonic pitches do not at all account for these complex sounds (Figure 15 a).

![Standard Notation](image)

**Fig. 15 b:** As in Fig. 12b, the standard notation's pitch information is incomplete, in this case giving pure harmonics but no complex inharmonic sonorities. The visual cue is far different from the resultant sound.

These consonant harmonic pitches correspond to the darker horizontal lines (overtones) in the lower range of the spectral analysis in Figure 15 a.
The result of the mixture between pure harmonics and noise in this particular case serves as a bridge, carrying over the nail sounds from the previous section into the contrasting sounds of “pure” harmonics. The timbral continuation into this passage is not a simple, abrupt contrast, but a natural continuation and novel introduction at the same time. And the noise component, instead of becoming a reactive, modulatory device, becomes integrated and fused with the pure tones themselves, in the manner of cross-synthesis.

V. Functional Ambiguity and a Dialogue with Calligraphy and Painting

As mentioned earlier, there have historically been scholarly categorizations of qin timbres. According to Xu Shangying’s book 淡山琴况 (Xi Shan Qin Kuang), the twenty-four aesthetic timbres are: 和 harmonious, 静 calm, 清 clear, 远 remote, 古 ancient, 朴素 unsophisticated, 惬 pleasing, 逸 free from vulgarity, 雅 elegant, 丽 fair and pretty, 亮 penetrating, 采 splendid, 洁 simple, 润 gentle and moist, 圆 round/perfect, 坚 melodious, 宏 grand, 细 delicate, 滑 smooth, 健 energetic, 轻 gentle, 重 powerful, 迟 slow, 速 swift.

Each descriptive name gives a unique and suggestive atmosphere as well as a specific poetic impulse, yet none clearly defines the exact techniques necessary to achieve the image. Again, the true, personal expression of thought from a qin musician’s inner world is more valued than pure artisanal reproduction. The player’s unique personality must be brought forth. The true value of interpreting a qin score is akin to composing and improvising a personal piece with poetic guidelines. The philosopher Zhuangzi once explained: “Do not listen for it with your ears, listen for it with your heart-mind. Do not listen for it with your heart-mind, listen for it with your qi. The ear stops with listening and the heart-mind stops with calculating. Qi is empty and waits for things to act. Only the Dao collects emptiness. What is empty is the heart-mind that fasts.”
Just as the fusing of noise and pitch create a kind of hybridity out of a duality, pitches themselves serve both melodic and harmonic functions in *Flowing Waters*, creating an interesting phenomenon of single-lined harmony that contributes to the flow of the music. The exact division between melody and harmony in this piece is often hard to place or define, which reflects the visual concept of a “line” in Chinese culture. Rooted deeply in traditional calligraphy and brush painting has been the notion that a line can never appear absolutely straight or even, but is constantly continuing, transforming, allying, and multiplying, as it takes on a life of its own. Even when one line ceases to expand, the way in which lines follow one another consecutively suggests that the “blank” space in between characters is not empty, but imaginatively and invisibly continuous.

As before in Figure 9, the calligraphic example from Tang Dynasty monk Huai Su (again in Figure 16) reveals the liveliness, fluidity and flexibility of the transformation of line in brushstroke calligraphy.

Fig. 16: 自叙帖 (Zi Xu Tie), handscroll written in 777AD by Tang Dynasty monk 怀素 (Huai Su) in the cursive script style.
If all the characters in Figure 16 were written out in clear, formal type, they would appear as thus:

戴公又云 鞭毫骤墨剧奔驷 满座失声看不及 目愚劣 则有从父司

An example of brush painting by 20th Century artist 张大千 Zhang Daqian (Figure 17) shows not only that lines are always fusing into one another, revealing surface and extra dimension, but also that colors are fading or merging freely. There are no single-edged “cuts” with which one can divide the images. Clouds, fog, mountains, and reflections in the water are all continually transforming and in motion, not stuck in a frozen, clear display of objects, but flowing forth in motion, as the outgrowth of natural processes and the expression of an atmosphere in flux.

Fig. 17: 黃山文笔峰 (Huangshan Wenbifeng) by 张大千 (Zhang Daqian).

In *Flowing Waters*, similar effects of ambiguity and blurring are achieved by transforming melody into harmony, and vice versa. Instead of following chords that serve a stabilizing harmony’s purpose, single-line melodies are played with worlds of variation within
parameters such as register and dynamics (including, for instance, frequent dynamic emphasis on low notes, the resonance of which produces the functions of both melody and harmonic fundamentals). On the other hand, ethereal high notes and harmonics are deployed not only melodically, but also as the sonic extension of related harmony. This kind of multifunctional way of dealing with musical lines resembles the same transformational and fluid aesthetic techniques as demonstrated in the painting by Zhang Daqian.

One frequent method of creating stable harmony is by using melodic leaps across the range of an octave or more, with strong dynamic emphasis on low notes (often with the motion of fourths or fifths); in creating strong fundamental resonance in successive phrases, the performer produces the effect of harmony and harmonic motion. Boxed notes in Figure 18 are accented in the lower register, resonating as emphasized fundamentals, while at the same time moving along with the melodies above. Notes above C4, played with softer dynamics, belong to melodies that grow out of and elongate the low resonances. The central pitches in this passage, all reinforced in the low register, move from C to F, and then back to C.
Fig. 18: Low notes take on harmonic stability, extending the melodic flow above, which also acts as an extension of harmonic resonance.

Playing very gently on high harmonics (Figure 19) suggests that a high melody can also be a quiet, horizontal manifestation of the overtones of a just-emphasized fundamental, as if it were a melodic echo.

![Figure 19: A fundamental followed by the echo of soft harmonics acting as its resonance.](image)

Figure 20a shows the use of textures that blur the boundary between melody and harmony with the goal of creating a mass, unified sonic web.

![Figure 20a: Two layers, the melody on top and arpeggio/glissando harmonic support below, become unified as one during a gradual descent.](image)

This excerpt is taken from a transcription of Guan Pinghu’s interpretation of *Flowing Waters* by 许健 (Xu Jian). The verbal notations below the transcription are the Jianzipu instructions from 天問箏譜 (Tianwenge Qinpu).

In this example, the recurring two-note bending motive first heard in the top line at the beginning is very clear as a separate melodic motive. As it descends, it gradually merges with the momentum of the arpeggio/glissando texture, fusing into the overall woven sound, until the separate layers are almost indistinguishable. By slowing down and clearing out the busy
texture as in Figure 20b, a clear melody gradually appears out of the massive texture, synthesizing the accompanimental figure into the melodic one.

![Figure 20b: A new melody emerging from the accompanimental figure.](image)

The section in Figure 20a was added by 张孔山 (Zhang Kongshan) in his 1876 edition of *Flowing Waters* and is named the 72 Variety (Gun Fuo); it calls for 72 glissandi in both directions across all seven strings to illustrate the impulses of the movement of water. This is a passage of music directly mimicking the motions and sounds of water rather than expressing the more abstract emotions stimulated by thinking about and observing it. There are many interpretations of the score that do not use the literal meaning of the 72 Variety passage; players rarely execute 72 exact glissandi, as the suggestion is more or less poetic.

**VI. The Tuning of Flowing Waters**

The pitch structure of *Flowing Waters* is based on a C pentatonic mode, with the seven open strings tuned accordingly (Figure 21).

![Figure 21: The open strings of the qin in Flowing Waters.](image)

When modulations of the pitch center occur, they do so within the limits of this pentatonic scale. This modal structure of shared pitches makes the modulations of central notes much
less contrasting in terms of tonal color but more ambiguous. Different primary focal points are established by having stronger attacks, repetitions, embellishments, etc. The tonal roles of the same pitches in altered modes switch as the central notes modulate, providing contrasting tonal basses and harmonic colors. The central pitches of this piece progress through four primary areas: C, F, A, and F.

The just intonation tuning method used for the seven open strings is also an important factor for the lasting resonance produced. On the instrument’s wood body, along each of the open strings, the thirteen white dots (Hui, as described earlier) indicate the finger positions for harmonics. The first harmonic, sounding an octave higher than the fundamental, is produced by depressing the seventh dot in the middle. Dividing each string into two, four, and eight parts in length by pressing the 1st, 4th, 7th, 10th or 13th dot produces octave-relation harmonics. Dividing each string into three or six parts in length by pressing the 2nd, 5th, 9th, or 12th dot produces perfect-fifth-relation harmonics. Dividing each string into five parts in length by pressing the 3rd, 6th, 8th or 11th dot produces major-3rd-relation harmonics. Thus, to tune the strings, one can do as shown in Figure 22, by pressing the Hui on the first indicated string in each bar, then comparing the resulting harmonic to the second harmonic produced by pressing on the indicated Hui on the second string. The process uses cross-relations of common-tone sounding harmonics between different open strings. All the upper staff pitches in each measure should sound in tune.
All seven strings are connected by a tight harmonic relationship because of the use of just intonation octaves, fifths, and thirds. As a result of the tunings, the seven strings share many common harmonics that, as mentioned before, support the resonances of one another when vibrating, creating an effect of sympathetic resonance, even when the articulations are subtle. Therefore, the use of the same pitches through modal modulation as well as the method of tuning across strings creates an overall continuous sonority that adds to the vagueness of the structural boundaries of the piece, and makes the music flow through a constantly similar sound world.

**Conclusion**

The qin is an extremely delicate-sounding instrument. The aesthetic of its music is heavily influenced by Daoism. Laozi’s idea of 大音希声 (Da Yin Xi Sheng), literally “the most beautiful sound is silence,” can be heard as the strongest sonic impression of qin music.⁹ The expression of inner calmness, emptiness, nature’s vastness, and the search for harmoniousness are results of this aesthetic. In a performance of a qin score, ample space
and time are sometimes left between sparsely placed sounding pitches, giving the players requisite time to reflect on the music and internalize it. Technically, temporal freedom is provided for players to be soloistic and improvisatory, and they can choose to add tasteful ornamentations between notes.

The flow of time in *Flowing Waters* is achieved naturally by the union of improvisatory temporal flexibility, timbral mixture of noise and pure pitch, finger- and nail-articulated slides between notes, dual functions of single-lined melody and harmony, and just intonation tuning. The aesthetics of calligraphy, brush-painting, and philosophy are the deep reasons behind the artistic and technical manifestations of notation, translating into performance. The timelessness and sense of complete discovery in each hearing of a work extends beyond the specifics of its cultural heritage. Guan Pinghu’s *Flowing Waters* recording continues to be played every hour as the *Voyager 1* spacecraft edges towards interstellar space, with the hope that an extraterrestrial civilization will be able to sense the universally communicative force of this manmade music. My hope is to discover the temporal and timbral possibilities from this ancient, celestial instrument, which will undoubtedly enrich my own compositional language, however dissimilar it might be to its source of inspiration.

---

1 智者乐水 (Zhi Zhe Le Shui) is from 《论语》 (*The Analects of Confucius*), chapter 6, 雍也第六 (conversation with student 雍 Yong).

2 The original text is “子曰：兴于诗，立于礼，成于乐” from 《论语》 (*The Analects of Confucius*), chapter 8, 泰伯第八 (conversation with student 泰伯 Tai Bo).

3 碣石调幽兰 (JieShiDiao YouLan), meaning Solitary Orchid, is the oldest surviving qin文字谱 (wenzipu) score from approximately 908 AD.

4 琴曲集成 (QinQu JiCheng), is one of the most complete qin score collections, including scores from the Tang Dynasty to 民国 (Min Guo – the Republic of China period of the early 20th Century), encompassing over 1300 years of history. This first edition was edited by 康生 (Kang Sheng) (Beijing, 1963).
5.溪山琴况 (Xi Shan Qin Kuang), written in 1641 by 徐上瀛 (Xu Shangying), discusses qin performance aesthetics.

6. 天问阁琴谱 (TianWenGe QinPu), a qin score collection, edited by 张孔山 (Zhang Kongshan) and 唐彝铭 (Tang Yiming) in the late 19th Century.

7. The original text reads “若一志，无听之以耳而听之以心；无听之以心而听之以气。听止于耳，心止于符。气也者，虚而待物者也。唯道集虚。虚者，心斋也,” quoted by Confucious in 庄子《人间世》(Ren jianshi). Translation is quoted from *Hide the World in the World* by Scott Cook.

8. 张大千 (Zhang Daqian, 1888-1983), one of the best known 20th Century Chinese artists to work in the brush-painting medium.

9. “大音希声” (Da Yin Xi Sheng) from 老子 (Laozi), 道德经 (Tao Te Ching), section 41.

### Bibliography

**Primary sources**

Confucius (孔子),《论语》(*Analects of Confucius*)

《徽言秘旨》(HuiYan MiZhi Ding) Edited by Qing Dynasty 孙ยว（Sun Jin）, based on 《徽言秘旨》(HuiYan MiZhi) written by 尹尔韬（Yin Er Tao） in Ming Dynasty

Laozi (老子),《道德经》(*Tao Te Ching*)


庄子 (Zhuang Zi)《人间世》(Renjian shi)

**Secondary sources**


Wailing

For Orchestra

Wang Lu
This piece was inspired by my experiences in a small remote town in a mountainous area of Northern China when I was 5 years old. I can still vividly remember a scene during that wintry season, when some robust young peasants were wailing and crying desperately while others were playing out-of-tune brass and percussion folk instruments in all ranges and with full force. They paraded past every house. I was told that someone had just passed away. Later the same strikingly mournful sound echoed upon the sterile earth once again, but this time, a young girl was getting married. The young men of the village got drunk after the procession, then went back to their group and played even more wildly.

Many years later, when I recalled my memory of these experiences, I suddenly understood why they were wailing so sadly, because that was the only way peasants could set free their repressed sorrow from years and years of weariness. They sang the same tunes for both funerals and weddings as if they were telling people that life is only a drama of birth, aging, ailing and eventually dying.
Instrumentation

Piccolo

2 Flutes
3 Oboes (3rd dbl. English Horn)

Clarinet in E-flat
2 Clarinets in B-flat (2nd dbl. Bass Clarinet)

2 Bassoons
Contrabassoon

4 Horns (F)
3 Trumpets (C) (straight mute)
3 Trombones (2 Tenor, 1 Bass) (straight mute)
Tuba

Timpani (30”-28”-25”-23”)

Percussion (for three players)

Bass Drum, 4 tom-toms. tam-tam, whip, chimes, glockenspiel, marimba, xylophone, vibraphone, triangle, crotales, cowbell, a pair of small cymbals, woodblocks, ratchet

Harp

Piano/Celesta(one player)

Strings

Accidentals last for the entire bar in the same octave only

Score in C