Article

A Case Study on Soundscape Analysis for the Historical and Ethnic Village of Dong Nationality in Zhaoxing County

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Abstract: A soundscape is a sound environment of the awareness of auditory perception and social or cultural understandings. Based on a soundscape investigation in 2019 in the historical and ethnic village of Dong Nationality in Zhaoxing County, Guizhou Province of China, a case study on the soundscape analysis with the acoustical sound pressure level and an impressive sound event or soundmark is introduced in this paper. Furthermore, in order to determine the subjective soundscape experience and its influence by the length of background music listening, the independent variable "Length of Listening" and six adjective pairs, such as "Monotonous" to "Rich", "Clamorous" to "Quiet", "Stressing" to "Relaxing", "Boring" to "Vivid", "Noisy" to "Musical" and "Disliked" to "Preferable" are chosen to obtain a curve-fit, which shows that the length of the music listening background has a higher correlation to the subjective experience, and no sufficient attention has been paid to the context of the traditional soundscape preservation, ethnic music and quiet and soft ambient sounds.

Keywords: soundscape; sound level mapping; curve-fit; Dong Nationality

1. Introduction

A soundscape, as suggested by Schafer, is a sound environment of the awareness of auditory perception and social or cultural understandings with the three features of keynote, sound signal and soundmark [1], or as defined by ISO, an "acoustic environment as perceived or experienced and/or understood by a person or people, in context" [2]. Domestic scholars mostly regard Chinese gardens and urban parks as research objects, for the collection, measurement and acoustical evaluation of soundscapes of noise control or architectural engineering design projects [3–6].

In the case of soundscape investigation and its human awareness, so much research has been carried out to prove the importance of protecting soundscapes in historical areas [7–9]. As a whole, sound sources, acoustic environment and its subjective evaluation, individual behaviors, social and demographical characteristics are the factors that influence soundscapes in historical areas [10]. Semantic differential analysis is often used to acquire the subjective evaluation [11], and then, for Chinese people, some adjective pairs which are easy to understand such as "Clamorous" to "Quiet", "Boring" to "Vivid", "Common" to "Divine", "Traditional" to "Modern", "Rough" to "Smooth", "Directional" to "Omni", "Far" to "Close", "Strong" to "Weak" and "Disliked" to "Preferable", were also suggested as the common semantic parameters to evaluate soundscape experience in historical areas [12].

Based on 37 typical binaural-recorded samples and the questionnaire on site in the historical and ethnic village of Dong Nationality in Zhaoxing County of Guizhou Province of China in 2019, a case study on the soundscape analysis with the acoustical sound pressure level, curve-fit and an impressive sound event or soundmark is introduced in this paper. The aim of this case study is to determine which kind of keynote, sound signal,

soundmark to preserve or restore, the subjective semantic soundscape experience and its influence by the three features and the length of background music listening.

2. Methods

2.1. Case Study Area and Samples

The area for this case study is the famous village of Dong Nationality in Zhaoxing County (Zhaoxing village for short) located in the southeast of Liping County, Southeast Miao and the Dong Autonomous Prefecture of Guizhou Province. It is one of the largest Dong villages with lots of drum towers and an area of 180,000 m^2 surrounded by mountains. For the local people of Dong Nationality, the drum tower is a special building for religious, social, traditional music and dancing, performing activities and fire warning. A strong drum beat can be heard all over the village when it works.

The shape of this area is shown in Figure 1 [13]. In 2009, the traditional music of Dong Nationality called Kam Grand Choirs (Dong Grand Song) was listed in the World Intangible Cultural Heritage list by United Nations Educational, Scientific and Cultural Organization (UNESCO).
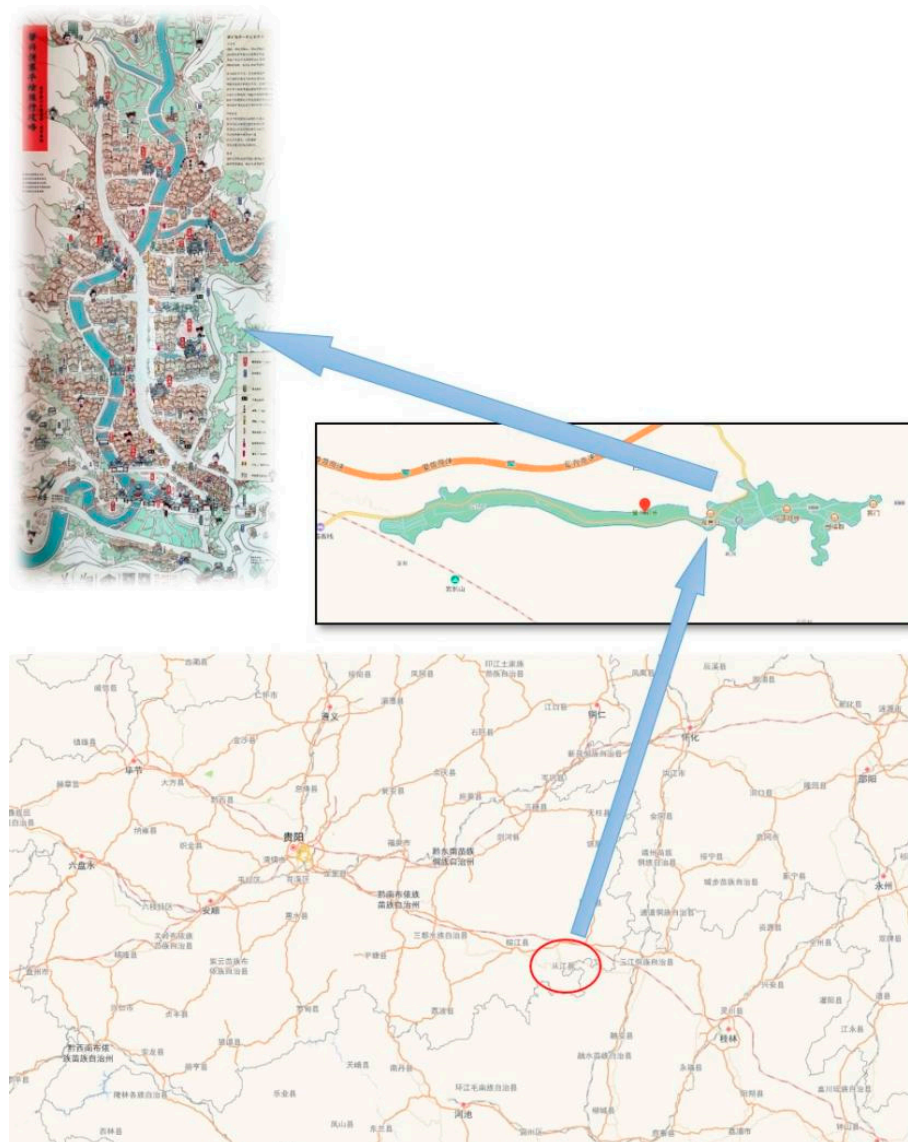
Figure 1. The location of Zhaoxing village.

All the samples involved in this paper were recorded on site in Zhaoxing village as shown in Figure 1, including the County Road 886 (the main street), the riversides, the Museum, the Performance Area, the Dong Garden, the Main Gate and the North Gate, four characteristic alleys, Alley 1, Alley 4, Alley 5 and the Xicai Alley, and five primary drum towers, the Lituan Drum Tower, the Xintuan Drum Tower, the Rentuan Drum Tower, the Yituan Drum Tower and the Zhituan Drum Tower.

There are 18 binaural soundwalk recordings, 19 binaural location recordings used to analyze the sound level mapping and to extract the keynotes, sound signals and soundmarks. Additionally, the interviews of 125 respondents (71 males, 54 females) on site from 16 to 22 August of 2019 are used to analyze the curve-fit.

2.2. Algorithm of Acoustic Parameter LA_{eq}

In Figure 2, we use the equivalent sound pressure level in dBA (LA_{eq}) to represent the sound level of each sample as Equation (1):

$$LA_{eq} = 10\lg\left(\frac{1}{n}\sum_{i=1}^{n}10^{0.1L_{p_i}}\right) \tag{1}$$

n—the numbers of equal duration section within a sample in the time domain, L_{pi}—the sound pressure level in dBA of each duration section.

2.3. Recording and Measuring Techniques

According to the complex situation on site and the local regulatory policy, it is impossible to use visible or big acoustic measuring equipment like large microphones or sound meters. Therefore, for the recordings, all the samples were binaurally recorded by an Apple iPhone X with a pair of Sennheiser AMBEO smart headsets (calibrated with a standard sound level meter in advance) plugged into the ears of the recording engineers. Additionally, especially for the soundwalk recordings, soft soles were required to avoid the sounds of footsteps. In order to simulate a listening situation of common people, recording engineers could freely or naturally do some slight body movements such as turning the head and squats during the soundwalks.

Then, for the measurement of LA_{eq}, firstly, according to the length of a sample, we cut each sample into 10 or more sections, calculated the sound pressure level (L_{p0}) in dBA with the microphone's sensitivity and the equivalent voltage level just at the first section of sample; then the L_{pi} can be calculated as Equation (2), and finally, the LA_{eq}, can be calculated by L_{pi} as Equation (1).

$$L_{p_i} = L_{p0} + \Delta L_{u_i} \tag{2}$$

L_{p0}—the sound pressure level just at the beginning of each sample, ΔL_{ui}—the difference between the equivalent voltage level of each section and that of the first section of this sample; the equivalent voltage level can be directly read from the recording software.

2.4. Subjective Evaluation and Its Curve-Fit Method

In order to determine the subjective soundscape experience on site and its influence by the length of background music listening, a short questionnaire on site based on the semantic differential analysis was design as shown in Table 1.

The independent variable *Length of Listening (LOL)* acquired by the question of "How long do you listen to music on average every day? (in minutes)", and six questions with the corresponding adjective pairs, differentiated in semantics as "Monotonous" to "Rich", "Clamorous" to "Quiet", "Stressing" to "Relaxing", "Boring" to "Vivid", "Noisy" to "Musical" and "Disliked" to "Preferable" were chosen to obtain a curve-fit. Then, the linear and quadratic curve-fit is used to show the length of music listening influence on the subjective soundscape experience represented by the average evaluation score of each adjective pair.

Table 1. Subjective Soundscape Experience Evaluation Questions and Adjective Pairs.

Questions	Adjective Pairs in Likert Five Scale (Without Unit)				
	−2	−1	0	1	2
1. The music or sound environment here makes you feel:	Monotonous		-		Rich
2. What do you think of the sound volume here?	Clamorous		-		Quiet
3. The music or sound environment here makes you feel:	Stressing		-		Relaxing
4. The music or sound environment here makes you feel:	Boring		-		Vivid
5. Do you think the sound environment here is musical?	Noisy		-		Musical
6. How much do you like this music or sound environment?	Disliked		-		Preferable
Question for the Independent Variable (*Length of Listening, LOL*)			-		-
How long do you listen to music on average every day? (in minutes)	**Not often**	**0–30**	**30–60**	**60–90**	**>90**
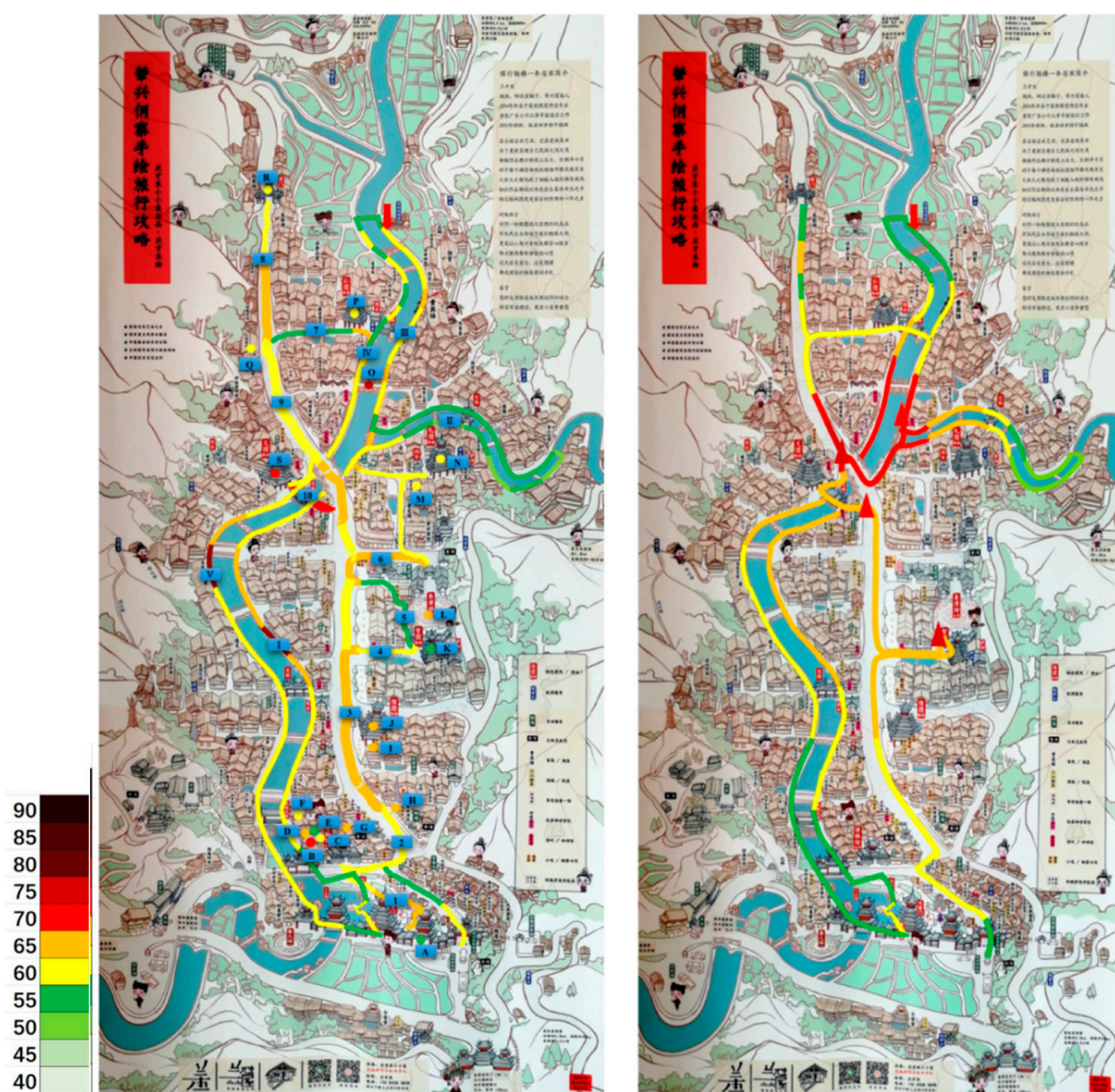
Figure 2. Sound level mapping (in *LA*$_{eq}$) of Zhaoxing Village during the day (left) and night (right, the estimated value for riverside soundwalk at night).

2.5. Soundscape Features

- Keynote

Keynote is a term derived from musicology, which refers to the first primary note in a particular musical scale. It is usually the fundamental tone. Keynote sounds are those which are heard by a particular lineage frequently enough to form a natural or social sound environmental background against other sounds. Examples might be the sound of wind for a valley village, or the sound of traffic in a big city. Most of the keynote sounds are lower in the sound pressure level, stable in the frequency spectrum, and then often ignored by the people.

- Sound Signal

The sound signals contrasted by keynote sounds are those which directly give attention or a particular information, such as traffic alert and church bell sounds, which may often be organized into some codes permitting messages to be transmitted quickly and clearly. However, for now, signals are also expanded to refer to some special sound events or sound objects in the foreground.

- Soundmark

The term soundmark is derived from landmark to refer to a special sound event which is native, unique and specially regarded or noticed by the people in a community, a village, a city, a country or, etc. Once a soundmark has been identified, its nativity, sociality and history related to its native time–spatial identifiability [14], deserves to be protected.

3. Results

3.1. Sound Level Mapping

The Sound level mapping (in LA_{eq}) is shown as Figure 2.

3.2. Soundscape Features Analysis

According to Figure 2 and the results of the experts' listening sessions, the soundscape analysis including keynotes, sound signals (signals for short) and soundmarks in detail is listed in Table 2.
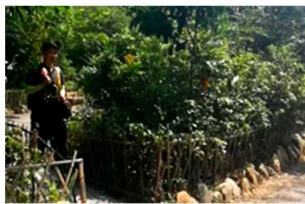
Table 2. Soundscape features analysis.

No. (Figure 2)	Native Location	Duration (mm:ss)	LA_{eq}	Illustration	Analysis
Main Street and Its Sides Soundwalk					
1	**Main Gate** to **Museum Entrance**	04:31	60–65		Both sides of this small road are dominated by shops, restaurants and guesthouse. People often wear traditional clothes. The sound is relatively quiet mainly with the natural sounds with a few of people at night. **Keynote**: Wind, Chirps, Water flow, Crowd noise. **Signals**: The collision sound of Dong's silverware. **Soundmarks**: None.
2	**Museum Entrance** to **County Road 886** and **Alley 1**	04:23	65		This is a noisy road with many shops. Since County Road 886 is a main road, the traffic is busy and noisy. **Keynotes**: Crowd noise, Traffic noise. **Signals**: Car horn. **Soundmarks**: None.

Table 2. *Cont.*

No. (Figure 2)	Native Location	Duration (mm:ss)	LA_{eq}	Illustration	Analysis
3	**County Road 886** and **Alley 1** to **County Road 886** and **Alley 4**	01:39	68		This section of the road, with traffic, tourists and shops, is a main street of Zhaoxing Village. The overall sound environment is very noisy. **Keynotes**: Crowd and traffic noise, music amplified. **Signals**: Car horn. **Soundmarks**: None.
4	**County Road 886** and **Alley 4** to **Zhituan Drum Tower**	01:26	60		This section to Zhituan Drum Tower is a small alley with lots of restaurants and hostels but fewer tourists on both sides of the river. The sound is dominated by the natural and the local people's daily life sounds. **Keynotes**: Chirps, Water flow, Daily life. **Signals**: None. **Soundmarks**: **Dialects** (Dong Language).
5	**Zhituan Drum Tower Trod**	01:15	53–57		The alleys opposite of Zhituan Drum Tower are mainly quiet resident areas with few tourists. **Keynotes**: Natural sounds, Crowd noise, Daily life. **Signals**: None. **Soundmarks**: **Dialects**.
6	**County Road 886** and **Alley 5** to **Performing Area**	01:33	65		This is a noisy road section with a lot of handcrafts or foods vendors. **Keynotes**: Tourists' conversation, Traffic noise. **Signals**: Vendors' broadcasting and barking sounds. **Soundmarks**: **Sounds of hawking**.
7	**Zhituan Drum Tower** to **Xicai Alley**	06:23	58		This is a quiet alley with less local people. **Keynotes**: Natural sounds, Light dialects. **Signals**: None. **Soundmarks**: None.
8	**Fork Road** to **North Gate**	03:24	66		This is a noisy resident section with lots of parking areas and a few guesthouses. **Keynotes**: Daily life, Traffic noise. **Signals**: None. **Soundmarks**: None.
9	**Fork Road** to **Yituan Drum Tower**	05:22	62		This noisy section with a few shops, restaurants and many pedestrians is the eastern end of the main street. **Keynotes**: Natural sounds, Light dialects and traffic. **Signals**: None. **Soundmarks**: None.

Table 2. *Cont.*

No. (Figure 2)	Native Location	Duration (mm:ss)	LA_{eq}	Illustration	Analysis
10	**Yituan Drum Tower** to **Main Street**	01:08	72		This section is passing Yituan Huaqiao Bridge and a small market. Since the Yituan Drum Tower is close to the resident areas and the Main Street, the sound environment is relatively noisy. There are so many bars located across of the main street and the river, and they are full of people at night. **Keynotes**: Natural sounds, Business noise. **Signals**: None. **Soundmarks**: None.
				Riverside Soundwalk	
I	**Main Gate** to **Yituan Drum Tower** (East side)	11:58	55–75		This road is a trail along the river with the local house buildings on the left side, the river on the right side and a few shops on both sides. The sound environment is dominated by low-density natural and pedestrian sounds. The sound level starts at 55 dBA lower, then grows higher, and there is not a commercial atmosphere obviously. **Keynotes**: River sounds. **Signals**: Beat piling. **Soundmarks**: None.
II	**Yituan Drum Tower** to **Bridgehead Bar**	04:13	50–55		With the river on the left side and a few inns on the right, this promenade is sparsely populated with high-density natural sounds as the main tone of an average sound pressure level of 55 dBA. **Keynotes**: River sounds. **Signals**: None. **Soundmarks**: None.
III	**Bridgehead Bar** to **Dong Garden**	03:43	60–70		This commercial route in the village with the natural and business sounds mostly around 70 dBA is mostly filled with tourists and shops. There are so many bars located across the main street and the river, and they are full of people at night. **Keynotes**: Natural sound; Business noise. **Signals**: None. **Soundmarks**: None.
IV	**Dong Garden** to **Qifeng Pavilion**	09:13	55–65		This promenade is separated by a small river-branch but with the same atmosphere of business at a lower sound pressure level around 60 dBA. **Keynotes**: Natural sounds; Business noise. **Signals**: None. **Soundmarks**: None.

Table 2. *Cont.*

No. (Figure 2)	Native Location	Duration (mm:ss)	LA_{eq}	Illustration	Analysis
V	**Yituan Drum Tower** to **Main Gate** (West side)	15:47	55–75		There are mostly resident houses with low-density natural sounds, crowd noise and a few construction sounds in this area. **Keynotes**: Natural sounds, crowd noise. **Signals**: Construction sounds. **Soundmarks**: None.
Main Nodes					
A	**Main Gate**	01:09	56		The village gate is the entrance to Zhaoxing Dong. Every morning and noon, the people of the Dong ethnic group welcome guests from afar with an original ecological performance. Generally, the sound level is moderate, with the natural sound and the conversation sound of tourists. Few people access the village by the main gate at night. **Keynotes**: Winds, Water sounds, Tourists' noise. **Signals**: Guide broadcasting. **Soundmarks**: **Traditional music and dancing performance** (at special times).
B–G	**Museum** Sound and Multimedia Installations	05:25	51–68		There are many sound and Multimedia Installations in this Museum, including Lusheng (68 dBA), Kuanyeu (56 dBA), Dong Opera (64 dBA), Kam Grand Choirs (Dong Grand Song, 51 dBA), a Wax Printing Craft performance (55 dBA) and a Dong Custom exhibition (59 dBA). **Keynotes**: Quiet and silence with low tourists' noise. **Signals**: None. **Soundmarks**: **Traditional music and sounds**.
H	**County Road 886 Intersection**	00:30	68		This intersection is located at the junction of County Road 886 and Alley 1, where it is close to the vegetable market. Therefore, so many motors pass through and the sound pressure level is relatively higher. **Keynotes**: Traffic noise. **Signals**: None. **Soundmarks**: None.
I	**Dong Tea Time**	00:44	69		Dong Tea Time is a milk tea shop with some pop music at a high sound pressure level. **Keynotes**: Loud background music, Crowd noise, Traffic noise. **Signals**: None. **Soundmarks**: None.

Table 2. *Cont.*

No. (Figure 2)	Native Location	Duration (mm:ss)	LA_{eq}	Illustration	Analysis
J	**Xintuan Drum Tower**	00:30	68		Xintuan Drum Tower is the first drum tower that can be seen after the Main Gate. It is close to County Road 886 in a noisy sound environment. **Keynotes**: Noise, Traffic noise, Music amplified. **Signals**: Drum beat (at special times). **Soundmarks**: **Traditional music and dancing performance** (at special times), **Dialects**.
K	**Zhituan Drum Tower**	00:37	59		Zhituan drum tower is located in alleyway 4, adjacent to the river, with few tourists coming and going. Most of the locals take a rest here, and the sound environment is relatively quiet. **Keynotes**: Chirps, Daily life, Traffic noise, Music amplified. **Signals**: Drum beat (at special times). **Soundmarks**: **Traditional music and dancing performance** (at special times), **Dialects**.
L	**Performance Area**	01:25	65		The performance area at the back of the Zhituan Drum Tower is located in Alley 5. It is generally quiet in the daytime, but full of vivid traditional music and dancing performing sounds at night. **Keynotes**: Quiet (daytime), Live sounds (night). **Signals**: None. **Soundmarks**: **Traditional music and dancing performance** (at night).
M	**Teaching House for the Dong Grand Song**	03:00	65		The Teaching House for the Dong Grand Song is located in a small shop next to the Lituan Drum Tower. A local teaches children to learn how to the sing dong grand song. Lovely and musical songs and some chatting in dialects can be heard during the Dong Grand Song classes for the children. **Keynotes**: Unknown. **Signals**: None. **Soundmarks**: **Dong Grand Song**.
N	**Lituan Drum Tower**	05:04	62		Quiet Lituan Drum Tower with few tourists is located in Alley 6. **Keynotes**: Natural sounds. **Signals**: Drum beat (in special time). **Soundmarks**: **Traditional music and dancing performance** (in special time), **Dialects**.

Table 2. *Cont.*

No. (Figure 2)	Native Location	Duration (mm:ss)	LA_{eq}	Illustration	Analysis
O	**Cascades**	00:25	82		There are so many natural or artificial sounds such as cascades in the river. When you pass through the bridge, you can feel the noisy but vivid sound of rushing water. **Keynotes**: Water. **Signals**: None. **Soundmarks**: None.
P	**Rentuan Drum Tower**	03:36	62		The most quiet Rentuan Drum Tower with few tourists is the easternmost drum tower of the village and close to the river. **Keynotes**: Natural sound, Daily life. **Signals**: Drum beat (in special time). **Soundmarks**: **Traditional music and dancing performance** (at special times), **Dialects**.
Q	**The Fork**	00:29	65		In this village, many residents use a hose to divert water and a bucket to store it. The water is usually used for washing vegetables. **Keynotes**: Natural sounds. **Signals**: None. **Soundmarks**: Washing sounds.
R	**North Gate**	00:56	61		The North Gate with few of pedestrians is located in the north-easternmost area of the village. It is mainly occupied by vehicles. **Keynotes**: Natural sounds, traffic noise. **Signals**: None. **Soundmarks**: None.
S	**Yituan Drum Tower**	01:18	70		The area around the Yituan Drum Tower is mainly inhabited by local residents. During the daytime, there are many locals resting and chatting. This tower is close to the river, and the vivid flowing water sound is integrated into the environment. **Keynotes**: Flowing water sound. **Signals**: Drum beat (in special time). **Soundmarks**: **Traditional music and dancing performance** (in special time), **Dialects**.

In order to analyze the soundscape features of Keynote, Sound Signal, and Soundmark suggested by Schafer [15], with all the samples played in headphones, two listening sessions (one for the soundwalk recordings, one for the location recordings the next day) were carried out in a lab for 5 experts to extract the three features and give some comments on the tourist flow, tourist behavior, tourism routing, the form of business and the aspects of ethnomusicology (Table 2), according to following guidelines.
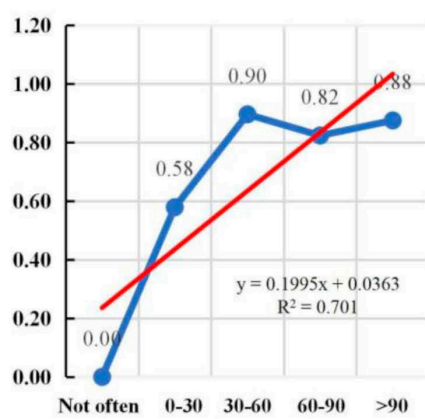
3.3. Curve-Fit Mapping

The average evaluation score without the unit of each interval in the question for the independent variable *LOL* is shown in Table 3, and the linear or quadratic curve-fit mappings are shown in Figure 3.
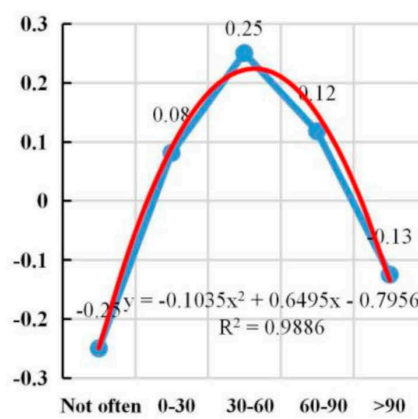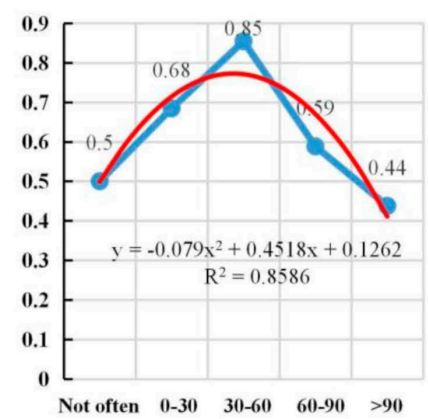
Table 3. Subjective evaluation score.

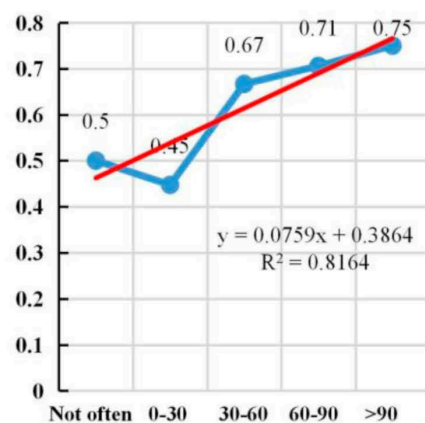| Question for the Independent Variable (*Length of Listening, LOL*)					
How Long Do You Listen to Music on Average Every Day? (in Minutes)	**Not Often**	**0–30**	**30–60**	**60–90**	**>90**
Average Scores Q.1	0.00	0.58	0.90	0.82	0.88
Q.2	−0.25	0.08	0.25	0.12	−0.13
Q.3	0.50	0.68	0.85	0.59	0.44
Q.4	0.50	0.45	0.67	0.71	0.75
Q.5	0.75	0.63	0.64	0.47	0.75
Q.6	0.50	0.53	0.75	0.88	0.93

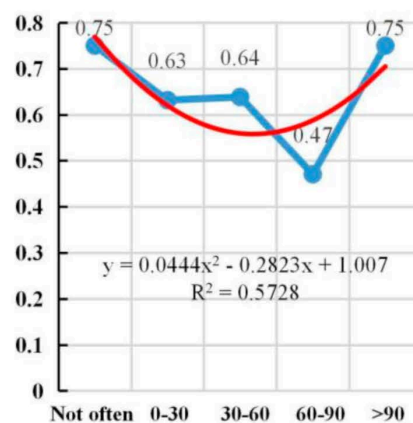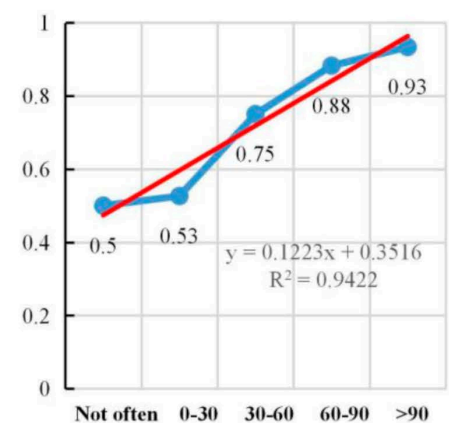(**a**) Q.1 "Monotonous" to "Rich" (**b**) Q.2 "Clamorous" to "Quiet" (**c**) Q.3 "Stressing" to "Relaxing"

(**d**) Q.4 "Boring" to "Vivid" (**e**) Q.5 "Noisy" to "Musical" (**f**) Q.6 "Disliked" to "Preferable"

Figure 3. Curve-fit mapping results of average scores (*y*-axis in the suitable scale for each question) distribution with the "*Length of Listening (LOL)*" (*x*-axis).

4. Discussions

4.1. Soundscape Features Analysis

According to Figure 2 and Table 2, except the main gate and the cross of the main street and the river, there was a similar distribution of other streets and alleys during the day and night. As the experts' comments on sample No.1, No.10, sample No.III and sample No.A in Table 2, the sound level of the cross was higher at night due to so many bars full of people at night in this cross, while that of the main gate was lower, because few people

access the village by the main gate at night. For sample No.3 of the main street, there were more people at night but a lot of traffic in the daytime, so there was a similar sound level both at the day and night.

In general, the sound levels were changing from 55 dBA to 85 dBA both in the day and night, and it is much noisier in the middle of the village than both in the south and north ends. The keynotes were mainly the natural sounds, traffic and business noise, with the sound signals of car horns. It was learned about from the local people that the drum beats from the drum towers were the most important sound signal for the local daily life for the religious, social, traditional music and dance performing activities and fire alert, but they were rarely heard in recent years. In this famous village, the traditional music and dancing performance is the most important soundmark obviously; however, according to the experts' comments, without a traditional cultural background as in the past, it is just like a newfangled performance for the tourists and an obligatory task for the local people. Therefore, both for the tourists and the local people, for the function of this kind of traditional music and dancing performance, they may have different interpretations and expectations. Additionally, in other words, the further research can be focused on a semantic analysis for the perception and understanding of keynotes, signals, soundmarks.

4.2. Relationships between Length of Listening and the Semantics

Base on Table 2 and Figure 3, some possible relationships between Length of Listening (*LOL*, the independent variable in Table 1) and the semantics (represented as the subjective evaluation scores in Table 3) could be shown in the curve-fit mappings with three types of the linear increasing, the optimal threshold and the worst threshold.

4.2.1. The Linear Increasing

The linear increasing for the adjective pairs such as **"Monotonous" to "Rich" (Q.1)**, **"Boring" to "Vivid" (Q.4)** and **"Disliked" to "Preferable" (Q.6)**. The accumulation of length of listening to music could lead to the improvement of "Rich", "Vivid" and "Preferable" perception of the soundscape. It can be also found that people's joviality, happiness and preference brought by the accumulation of intensity, and this increasing phenomenon is more in line with our daily feelings.

4.2.2. The Optimal Threshold

The optimal threshold of 30–60 min for the adjective pairs such as **"Clamorous" to "Quiet" (Q.2)** and **"Stressing" to "Relaxing" (Q.3)**. This is different from the result of linear increase in Type I, while Type II is a kind of interval for the optimal threshold. The highest points of curve-fit mapping for "Clamorous" to "Quiet" and "Stressing" to "Relaxing" both appear at 30–60 min. The negative effect of lower or higher intensity for "Quiet" or "Relaxing" is nervousness or panic, while a moderate intensity will achieve a good effect more consistent with our cognition.

4.2.3. The Worst Threshold

The worst threshold of 30–60 min for the adjective pair of **"Noisy" to "Musical" (Q.5)**. In contrast of Type II, there is the worst threshold of 30–60 min for the "Noisy" to "Musical" perception. It is obviously that the musicality of soundscape is more complicated; that is, no more attention has been paid to the music content.

5. Conclusions

According to results and discussions, for which kind of keynote, sound signal, soundmark to preserve or restore, the traditional music and dancing could be the most important soundmark with keynotes of natural sounds, local dialects and slight tourists or bossiness noise when the most important sound signal—drum beat is restored to work in its traditional ways.

For the subjective semantic soundscape experience and its influence by the length of background music listening, the perceptions of "Rich", "Vivid" and "Preferable" have a positive link with an accumulation of daily listening time, while the perceptions of "Quiet" and "Relaxing" perceptions need a suitable length of not too little or too much daily listening time. The "Muscial" perception for the soundscape is more complicated, with a worse score in a much more suitable daily listening time. Finally, the historical and ethnic Zhaoxing village was originally full of natural sounds, songs of insects or birds, traditional music, dancing and cultures. However, however, due to the influence of the modernization, the keynotes and soundmarks are not clear, with an increasing sound pressure level of kinds of noise. The excessively high volume of traffic, amplifiers, and performance leads to more noise than the traditional music itself, which also shows that the length of background music listening has a higher correlation to the subjective experience, and no sufficient attention has been paid to the context of the traditional soundscape preservation, ethnic music and the quiet and soft ambient sounds.

Additionally, many more questions were revealed in this case study, such as the reason why the drum beat could not be heard in recent years, the relationship between the subjective experience and the contents of the keynote, sound signal, soundmark, the "Musical" or "Artistic" perception, the necessity and the ways to restore the traditions of historical or ethnic soundscapes, are worthy of more research.

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