

## **Research and Analysis of Featured Soundscape Image of Tourism spot in Taipei City**

**Wu, Jou-Hsuan**

**National Chiao Tung University, Master Program of Sound and Music Innovation Technologies**

**No.1001, University Rd., Hsinchu City 300, Taiwan (R.O.C.)**

**Tseng, Yu-Chung**

**National Chiao Tung University, Master Program of Sound and Music Innovation Technologies**

**No.1001, University Rd., Hsinchu City 300, Taiwan (R.O.C.)**

### **ABSTRACT**

**In recent years, the tourism development of Taipei is booming. Taipei has obviously become the first choice for East Asian tourists. There are also many European and American backpackers who want to see this beautiful and diverse city. Based on the soundscape theory, this study explores the featured soundscapes of tourism spots in Taipei. The purpose of this study is to construct the image and characteristics of “City Soundscape” of Taipei through the classification and analysis of sounds. The significance of soundscape research is to enrich the composition of urban ecology. And sound will inevitably become the historical evidence of immaterial forms of the city.**

**Keywords:** Soundscape, Soundscape Triangle, Ecological Triangle, City Image, Taipei Tourism

**I-INCE Classification of Subject Number:** 70

## **1. INTRODUCTION**

### **1.1 Preface**

The value and status of sounds in the environment has been broadened since a new proper term “soundscape” has given by the Canadian composer Murray Schafer in 1970.

Sound, which represents timeliness, is the element of depth in the concept of space. In the environment, it means that different information is interacting with each other; in the city, the sound plays a diversified role in different aspects to convey the emotions of city and characteristics. [1]

Each city has its own unique character. If the city is regarded as an organism or “personified”, the linkage of its expressions will contain five senses and emotions. Therefore, through the connection of the five senses, the city not only has the landscape, but also the soundscape. [2] Among the five senses, vision and audition were the main sensory abilities in daily life, but in terms of audition, human beings could not end their

auditory function in a conscious situation. As a result, it is proved that the auditory recognition is no less than vision. [3] By means of soundscape research, we can explore the deeper perception of the city from a broader perspective.

### **1.2. Soundscape Theory**

"Soundscape" is a concept proposed by Canadian composer R. Murray Schafer from the late 1960s at Simon Fraser University, and led to the establishment of the World Soundscape Project(WSP) with finding solutions for an ecologically balanced soundscape where the relationship between the human community and its sonic environment is in harmony

Soundscape contains sounds of environment (or sonic environment) which emphasizes the way individuals and the society perceived it. It depends on the relationship between the individual and environments. [4] Any sound can be part of the soundscape, not only the sound of the environment, but also a piece of music or a casual conversation. As we speak of speech, music and soundscape, it relies on longer-term relationships rather than short-term recognition. [5] Soundscapes are like auditory descriptions of landscapes. They can create real and direct images through hearing, and even give original sounds different subjective imagination, so as to enhance the value of their meanings.

Once we take the notion of "soundscape" to emphasize the way in which the sonic environment is understood, it emerges as an important system of human communication that is comparable to the others. The signals of environmental sounds (e.g., a footstep, a bell, the wind, a car), whether foreground sounds or background sounds, require to be perceived by their contexts. The meaning is strengthened by the relationship between the environment and the signals. [5]

### **1.3. The Concept of City Image**

The concept of city image was first proposed by Chicago scholar Kevin Lynch in 1960, and he had summarized the city image to five elements: (1) paths: directional and continuous traffic routes, such as streets and sidewalks. (2) edges: the junction of different areas, which is usually linear, such as the coast, wall or railway. But one person's path may be the edge of another person, for example a railroad can be the commuter's path, but the edge of another resident. (3) districts: recognition of common features makes it easy to distinguish the nature of various spaces in a city. (4) nodes : the main activity area as well as the place where the paths are gathered, such as the downtown square and the traffic transfer station. (5) landmarks: the prominent space that people use as a reference point is the symbol of the city. [6]

City is the art of time. It should not be regarded as something existing in itself, but as a city perceived by citizens. [7] With the process of time, the city is constantly growing and changing. Humans use their senses to continuously explore the city and feel the information provided by the environment.

### **1.4. The historical development of the tourism area in the Taipei City**

Located in the northern of Taiwan, Taipei city is the most international and renowned city in Taiwan. Taipei has abundant historical sites and urban scenes, and many different races have been mixed to create a colourful landscape in Taipei. The two earliest developed village settlement in Taipei, Bangka and Dadaocheng, both originated from the Tamsui River and the tributaries of the Tamsui River system, namely Keelung River, flowing cross through the Taipei city and merging into the

Tamsui River at Guandu [8], and Xindian River, flowing through the south-eastern part of the Taipei city and merging at Wanhua. [9]

Nowadays, the government takes good advantages of the Tamsui River system to develop diversified tourism and leisure industries, such as riverside park. Taipei city also has many renowned landmarks, such as, Longshan Temple, Taipei station, etc. In addition to the amazing landmarks and leisure spots, Taipei also has abundant natural resources, such as the Daan Park in the center area, which "metropolis forest" and the lung of the city. There is also Yang Ming shan National Park in the suburbs of Taipei. It has a flat Qingtiangang grassland, a continuous grassland and green grass. Even near the Office of the President, there is the botanical garden established in the Japanese occupation era.

## 2. ANALYSIS OF THE FEATURED SOUNDSCAPE IMAGE OF TOURISM SPOTS IN TAIPEI CITY

### 2.1 Analysis method of soundscape feature

To classify soundscape features, the analysis framework of soundscape proposed by C.S. Wang was used as the basis of soundscape features. The specific parts of the spectrum of soundscape files in certain regions are extracted and physical information among them such as frequency, volume intensity and time length are taken for the feature analysis.

The soundscape analysis framework proposed by C.S. Wang is composed of two concepts, one of which is the Ecological Triangle developed by C. Tilly (1974) : human, space and activities, which can be used to analyze the social structure of the city (Shown in Table 1). [2]

Table 1: Description of Ecological Triangle

| <b>Ecological Triangle</b> | <b>Description</b>   |
|----------------------------|--|
| Human                      | Social actor: Including aspects of race, class, gender and organization                |
| Space                      | Social container :Including natural and man-made objects with various social functions |
| Activities                 | Social output: Including highly divided social interactions                            |

Another concept developed by M. Schafer (1978) is Soundscape Triangle, with three factors keynote, signal and soundmark. (Show in Table 2)[2]

Table 2: Description of Soundscape Triangle

| <b>Soundscape Triangle</b> | <b>Description</b>  |
|----------------------------|---|
| Soundmark                  | It has obvious features and strong connection with sound source. For example : Church bells |

|         |  |
|---------|--|
| Signal  | Foreground sounds that attract people's attention and are consciously listened.  |
| Keynote | It has omnipresent characteristics. Although it may not be heard consciously, it abstracts the features of a string of sounds. |

In city image shaping, people tend to present the city's impression with the visual elements. If we start from the auditory level and shape the city's image with the concept of soundscape, we can find the different appearance of the city. This study selects the urban tourism sites based on the five elements of city image concluded by Lynch. Those sites contain both the characteristics of tourism and the implication of city image.

Most of related studies of soundscapes are on the interactions between sound, environment and culture. The sound is used to explore topics that cannot be seen or touched by vision. The study of soundscape is said to be based on psychological aspects and go beyond visual aspects. It supplements the lack of psychological level, which is too subjective, and of visual level, which is difficult to deepen the research.

## 2.2 Analysis of Soundscape Features of Taipei Tourism Spots

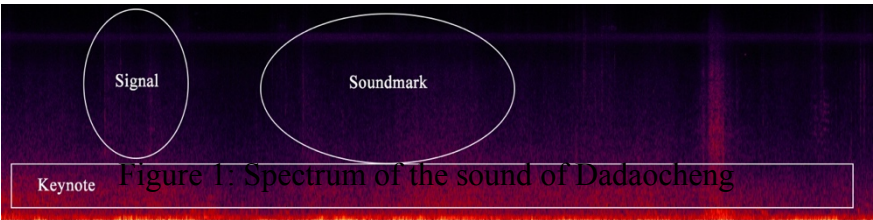
The five elements of the city image consist of Paths, Edges, Districts, Nodes, and Landmarks. In the study, Taipei city is taken as the research object, and Edges, Districts and Landmarks are mainly focused. The Dadaocheng Wharf (Tamsui River) is regarded as the Edges, Songshan Airport and Yang Ming Shan National Park as the Districts, and Longshan Temple as the representative Landmarks. The following are the contents of site analysis:

### 2.2.1 Dadaocheng Wharf (Tamsui River)

Table 3: Soundscape Analysis of Dadaocheng Wharf (Tamsui River)

|                               |                   |   |
|-------------------------------|-------------------|---|
| <b>Location</b>               |                   | Dadaocheng Wharf(Tamsui River)                |
| <b>Category of city image</b> |                   | Edges   |
| <b>Soundscape Triangle</b>    | <b>Soundmark</b>  | The sound of Tamsui river                     |
|                               | <b>Signal</b>     | The sound of bicycle chain rotation           |
|                               | <b>Keynote</b>    | The sound of traffic on all sides of the road |
| <b>Ecological Triangle</b>    | <b>Human</b>      | The sound of bicycle chain rotation           |
|                               | <b>Space</b>      | The sound of Tamsui river                     |
|                               | <b>Activities</b> | The sound of traffic on all sides of the road |

In the late 18th century, Dadaocheng wharf began to flourish after the opening of the Tamsui Port and became a prosperous place for business and culture. The port used to be prosperous, while it's not the same now. At present, the Dadaocheng Wharf still has passenger ships to Tamsui Fisherman's Wharf. The boats fluctuate the river, the sounds pass down the historical value of the port. Although there is no commercial activity now, but the sounds of bicycle chain rotation can be heard around Dadaocheng wharf, which seems to offer people the message, “leisure”.



### 2.2.2 Taipei Songshan Airport

Table 4: Soundscape Analysis of Taipei Songshan Airport

|                               |                   |  |
|-------------------------------|-------------------|--|
| <b>Location</b>               |                   | In the Taipei Songshan Airport and Binjiang Street (Aircraft Lane)     |
| <b>Category of city image</b> |                   | District   |
| <b>Soundscape Triangle</b>    | <b>Soundmark</b>  | The sound of aircraft takeoff and the engine                           |
|                               | <b>Signal</b>     | Airport flight reminder broadcast                                      |
|                               | <b>Keynote</b>    | The sound of foreign passengers talking and the sound of airport music |
| <b>Ecological Triangle</b>    | <b>Human</b>      | The sound of passengers talking  |
|                               | <b>Space</b>      | The sound of music and broadcast in the airport                        |
|                               | <b>Activities</b> | Aircraft engine sound  |

The sound of aircraft takes off and the engine both contain the strongest intensity, which can be seen from the spectrum (Figure 2). The sound of airplanes make people straightforwardly think of an airport and therefore it is made to be the soundmark. The characteristic of the broadcast sound in the airport is regular, so it has the function of information (Figure 3). However, the sound spectrum of passengers talking and music played in the airport hall is similar with a continuous band, which is close to ambient sounds and people would receive unconsciously.(Figure 4).

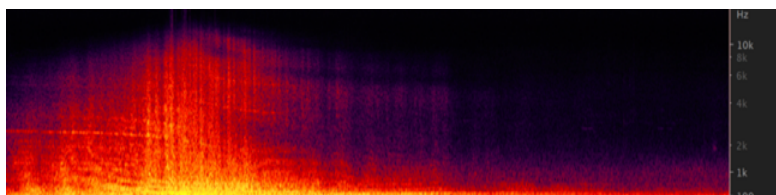


Figure 2: Spectrum of the sound of aircraft takeoff and the engine

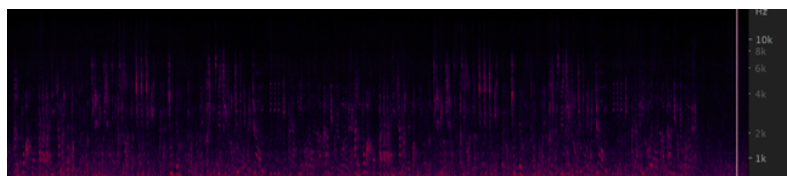


Figure 3: Spectrum of broadcast in the airport

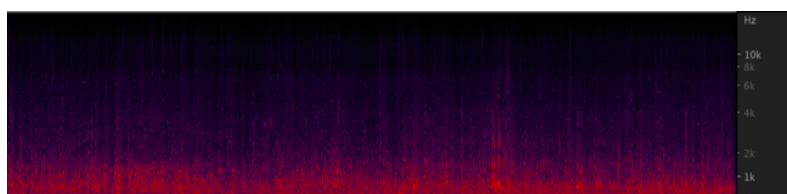


Figure 4: Spectrum of the sound of music and talking in the airport

### 2.2.3 Yang Ming Shan National Park

Table 5: Soundscape Analysis of Yang Ming Shan National Park

|                               |                   |   |
|-------------------------------|-------------------|---|
| <b>Location</b>               |                   | Yang Ming Shan National Park (Qing tian gang Grassland) |
| <b>Category of city image</b> |                   | District  |
| <b>Soundscape Triangle</b>    | <b>Soundmark</b>  | The sound of buffaloes                                  |
|                               | <b>Signal</b>     | Sound of passengers walking along the stone walkway     |
|                               | <b>Keynote</b>    | The sound of insects and wind blowing grass             |
| <b>Ecological Triangle</b>    | <b>Human</b>      | The sound of talking of tourists chattering             |
|                               | <b>Space</b>      | The sound of passengers walking along the stone walkway |
|                               | <b>Activities</b> | The sound of buffaloes                                  |

On the Qingtiangang Grassland in YangMingshan National Park are many buffaloes, as a result, many tourists are attracted to visit. People easily associate the sound of buffalos with the Qingtiangang Grassland, and the sound of buffalos is more energetic and has a wider frequency range than other sounds (Figure 4). The regular moderate volume sounds

of passengers walking along a stone walkway is the foreground sound which can be consciously heard (Figure 5). On the grassland there is always a slight sound of insects and a sound of wind blowing grass. It exists all the time, but it may not be heard. From the Figure 6, it can tell that although the energy is a bit small, it is a continuous sound.

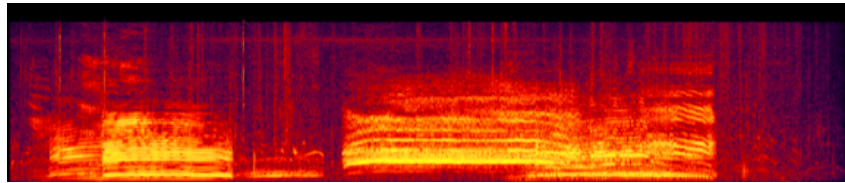


Figure 5: Spectrum of the sound of buffaloes

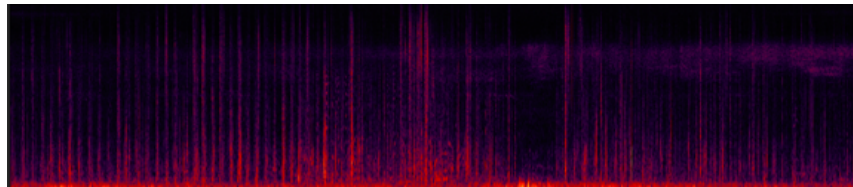


Figure 6: Spectrum of the sound of passengers walking along the stone

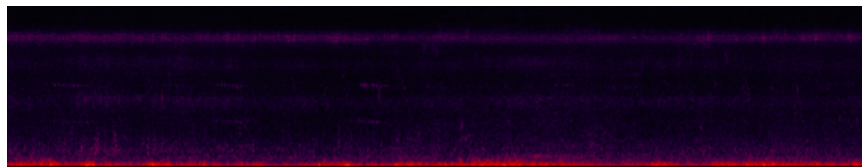


Figure 7: Spectrum of The sound of insects and wind blowing grass

#### 2.2.4 Longshan Temple

Table 6: Soundscape Analysis of Longshan Temple

|                               |                   |   |
|-------------------------------|-------------------|---|
| <b>Location</b>               |                   | Longshan Temple                                   |
| <b>Category of city image</b> |                   | Landmark  |
| <b>Soundscape Triangle</b>    | <b>Soundmark</b>  | The sound of chanting                             |
|                               | <b>Signal</b>     | The sound of casting moon blocks and drawing lots |
|                               | <b>Keynote</b>    | The sound of tourists chattering                  |
| <b>Ecological Triangle</b>    | <b>Human</b>      | The sound of tourists chattering                  |
|                               | <b>Space</b>      | The sound of casting moon blocks and drawing lots |
|                               | <b>Activities</b> | The sound of chanting                             |

Longshan Temple situated in the city's oldest part, Wanhua. It is the most famous temples in Taipei and can be viewed as the spiritual core of the city people. One of the characteristics of Longshan Temple is their two-hour chanting time. When the chanting time arrives, many believers gather in the Longshan Temple and chant with the dharma



master together. In addition to the sounds of believers chanting, there are also sounds of believers asking the gods for help, casting moon blocks and drawing lots. These sounds are the foreground sounds that can be consciously heard, and appear one after another regularly. With its centuries-old history, Longshan temple has become an important historic site in Taipei city, attracting a lot of tourists.

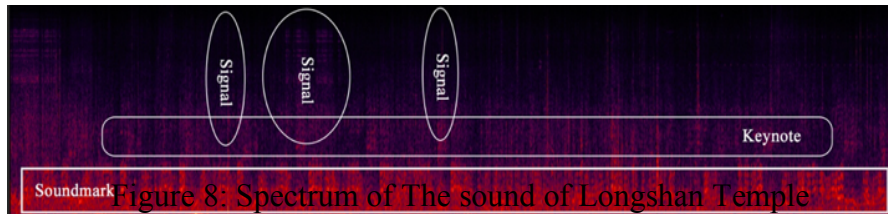


Figure 8: Spectrum of The sound of Longshan Temple

### 3. CONCLUSIONS AND FUTURE WORK

In the study, Taipei city was taken as the research site, city image was used to find the representative of Taipei city, and both the analysis system of soundscape triangle and the ecological triangle were employed as the soundscape classification of each site. Based on these classifications, listeners can have a better understanding of the sound level in the environment. Finally, the spectrum archives of soundscape were used for the analysis of soundscape features. With the aids of technology, we can more clearly distinguish the uniqueness of each soundscape and the perception of people can be understood more concretely.

In the future research, We hope to select more scenic spots as the research objects, even collect these sounds to create a soundscape composition belonging to Taipei city based on the analysis outcome, and lead tourists to "listen" to Taipei from different ways through the city image.

### 6. REFERENCES

- [1]Lo, C. Y. (2012) .Sonata of the harbor city: A Study on soundscape of tourism wharf in Kaohsiung. *National Yunlin University, Yunlin*.
- [2]Wang, C. S. (2001). Soundscape's expression in the two-city case: Imagination of environmental sociology. *Journal of Building and Planning, National Taiwan University*.
- [3]Peng, H. H. (2015). A Research of Characteristic Soundscape of Tainan and Implement of Soundscape Map Installation. *National Chiao Tung University, Hsinchu*.
- [4]Truax, B. D. (1999). "Handbook of Acoustic Ecology."<<https://www.sfu.ca/sonic-studio/handbook/index.html>>
- [5]Truax, B. D. (2001). *Acoustic Communication*. Norwood. 2ed. NJ: Ablex Publishing Corporation
- [6]The Image of the City (2002, February), from <http://terms.naer.edu.tw/detail/1319059/>
- [7] Lynch, K. (1960). *The Image of the City*. Cambridge: M.I.T. Press.
- [8]KeelungRiver(2018,June),from [https://en.wikipedia.org/wiki/Keelung\\_River](https://en.wikipedia.org/wiki/Keelung_River)
- [9]XindianRiver(2018,March),from [https://en.wikipedia.org/wiki/Xindian\\_River](https://en.wikipedia.org/wiki/Xindian_River)