The sounds on the Silk Road from Xi'an to Urumqi
Soundscape, recording and exposition of the sound

Los sonidos en la Ruta de la Seda de Xi'an a Urumqi
Paisaje sonoro, grabación y exposición de sonidos

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——Paisaje sonoro, grabación y exposición de sonidos

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Paisaje sonoro, grabación y exposición de sonidos

Resumen

El objetivo principal de la tesis doctoral es estudiar el paisaje sonoro en la ruta china de la Ruta de la Seda a partir de las premisas emitidas en 2003 por la Convención para la Salvaguardia del Patrimonio Cultural Inmaterial de la UNESCO.
En China, no se ha utilizado ninguna aplicación de este acuerdo. La investigación propuesta por la tesis doctoral es un precedente importante en la aplicación de las directrices relativas al estudio y conservación del patrimonio cultural inmaterial.
La Ruta de la Seda representa el intercambio y la integración entre las culturas china y la cultura occidental, la ruta de la seda desde tiempos inmemoriales por su atmósfera misteriosa y remota es ha resultado una experiencia fascinante, tanto para oriente como en occidente.

Desde que era joven he anhelado todo lo relacionado a la Ruta de la Seda. Desde mi estancia en Barcelona, me puse en contacto a la investigación del arte de los medios sonoros, los mapas de paisajes sonoros y la escultura sonora en el laboratorio del Dr. Josep Cerda de la Facultad de Bellas Artes de la Universidad de Barcelona. Finalmente, al empezar mi doctorado, se presentó la idea de aplicar el arte de los medios sonoros aplicados al análisis de datos de los sonidos de la Ruta de la Seda y los registros sonoros que pueden constituir un archivo para su preservación para el futuro.

La Conferencia General de la Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura UNESCO, en su 32ª reunión, celebrada en París del 29 de septiembre al 17 de octubre de 2003 aprobó la Convención para la Salvaguardia del Patrimonio Cultural Inmaterial, que es el acuerdo intergubernamental que reconoce que las comunidades, grupos e individuos juegan un papel importante en la producción, salvaguardia, mantenimiento y recreación del patrimonio cultural inmaterial, contribuyendo así al enriquecimiento de la diversidad cultural y creatividad humana. En esta Convención se considera la importancia del Paisaje Sonoro como exponente de la diversidad cultural.

El objetivo general de esta tesis doctoral es aplicar la realizar una investigación del patrimonio cultural inmaterial formulada por la UNESCO para qué mediante los medios y tecnologías de sonido, grabar y proteger el paisaje sonoro de las áreas culturales típicas de la Ruta de la Seda.

A través de una revisión de la literatura de la investigación de arte sonoro occidental y el estado actual de la investigación de sonido del paisaje en China, hemos decidido llevando a cabo una investigación de paisaje sólido de la actualidad, la investigación se llevará a cabo en una determinada área designada que es el recorrido de la Ruta de la Seda en su paso por las regiones de China. Existen algunos analisis un análisis cuantitativos mencionados en la tesis, pero nuestro trabajo es innovador, ya que no hay ningún estudio sobre "Los sonidos en la Ruta de la Seda desde Xi'an a Urumqi".

La Ruta de la Seda es un área extensa y tiene muchas limitaciones de investigación en términos de geografía para llevar a cabo una investigación de los sonidos en su totalidad geografica. Es por esta razón que hemos escogido como ámbito de estudio las regiones de la ruta de la seda en su paso por China. Esta tesis es un trabajo teórico practico a partir de los conceptos de Paisaje Sonoro, pero en esta investigación también se han utilizado utiliza metodologías propias de la etnográfica. Finalmente se determinó la zona de investigación en China desde Xi'an hasta Urumqi en seis regiones específicas.

En la historia de China, la Ruta de la Seda empezó en Xi'an, provincia de Shaanxi, y terminó en la provincia de Xinjiang, la última región que conecta China con Eurasia. En mi trabajo de campo, pasé por las grutas de Longmen en Luoyang, provincia de Henan, las áreas circundantes de las grutas de Mogao en la provincia de Gansu y las regiones circundantes del lago Qinghai en la ciudad de Xining, provincia de Qinghai. Como el área de reunión de las minorías étnicas en el suroeste de la Ruta de la Seda

de China, la provincia de Yunnan también incluye esta investigación de tesis doctoral.

Traté de encontrar los sonidos y las voces de la Ruta de la Seda que sean más dignas representativas para esta investigación y mas importantes para su preservación, ya que son sonidos en vías de extinción preservación, y finalmente realicé las investigaciones a partir del trabajo de campo y análisis cuantitativos en mi universidad.

El propósito de la investigación es realizar una biblioteca de sonidos, la ejecución de un mapa de los paisajes sonoros del área estudiada y dar difusión mediante una exposición de sonidos en un futuro museo de arte sonoro. Estas tres aplicaciones, la creación de un archivo sonoro, la geolocalización de los sonidos mediante mapas sonoros y la creación de un espacio expositivo son para reflejar el entorno del paisaje cultural y ecológico de la Ruta de la Seda. Tan importante como el medio ambiente geográfico es el entono humano urbano que está en pleno proceso de transformación y que en China tiene el status quo de las reliquias históricas. Con base en esto, establezca una base de datos sólida del paisaje sonoro.

Creemos que la formación de un mapa digital del paisaje sonoro será un aspecto importante para la protección y herencia del paisaje sonoro en la Ruta de la Seda, como base para la investigación académica y un marco teórico sobre para la protección del patrimonio cultural inmaterial en la Ruta de la Seda.

El segundo objetivo de la investigación es establecer un laboratorio de arte de medios interactivos mediante el sonido y un centro de documentación del Paisaje Sonoro en la Universidad Donghua de Shanghai y el Shanghai Arts & Design Academy, para complementar la actual falta de studios de arte sonoro, que creemos será una aportación muy importante en la educación del diseño en China.
El tercer objetivo de la investigación, es aplicar en los estudios de arte sonoro unas innovaciones de futuro, combinado la inteligencia artificial para servir a la sociedad. Aplicar el diseño de sonido inteligente como un medio esencial de exhibición y

exposición es un elemento que será muy valorado en los museos chinos.

En cuanto a las conclusiones de la investigación y su influencia social, esta tesis doctoral plantea por primera vez, la aplicación del arte de los medios sonoros para aplicarlo para proteger el paisaje sonoro de la Ruta de la Seda para el futuro. En primer lugar, hemos utilizado un conjunto de técnicas fundamentales tanto metodologicas como técnicas, en la investigación de esta tesis doctoral aplicadas al estudio académico de la protección del paisaje sonoro en la Ruta de la Seda. Debido a las limitaciones de la financiación de la investigación y el tiempo de la tesis doctoral, solo se investigan seis áreas importantes. No obstante, posteriormente proseguiré esta investigación a partir de lo recogido en esta tesis doctoral. Creemos que nuestro trabajo de investigación será un precedente muy importante en china, los investigadores continuarán estudiando algunas otras regiones de la Ruta de la Seda en China. Esta tesis doctoral sentará una base teórica para que en China se inicien los estudios de la investigación del paisaje sonoro de la "Ruta de la Seda". Finalmente cabe mencionar que la creación de este archivo sonoro mediante el establecimiento de la biblioteca de medios interactivos de sonido, ha repercutido muy favorablemente en la educación artística del diseño.

Abstact

The The main objective of the doctoral thesis is to study the Soundscape in the Chinese route of the Silk Road based on the premises issued in 2003 by the Convention for the Safeguarding of the Intangible Cultural Heritage of UNESCO.
In China, no application of this agreement has been used. The research proposed by the doctoral thesis is an important precedent in applying the guidelines concerning the study and preservation of intangible cultural heritage.
The Silk Road represents the exchange and integration of Chinese and Western cultures, and its mysterious and remote atmosphere is fascinating. I have longed for the Silk Road since I was young.
I was exposed to sound media art, soundscape maps, and sound sculpture research in the laboratory of Dr. Josep Cerda at the University of Barcelona.
 Finally, it presented the idea of applying sound media art to data analysis of the sound on the Silk Road and archival records.

The General Conference of the United Nations Educational, Scientific and Cultural Organization.
UNESCO, at its 32nd meeting, held in Paris from September 29 to October 17, 2003.
Approved the Convention for the Safeguarding of the Cultural Heritage Intangible, the intergovernmental agreement that Recognizes that communities, groups, and individuals play an important role in the production, safeguarding, maintenance, and recreation of intangible cultural heritage, thereby contributing to enriching cultural diversity and human creativity.
It considers the importance of the Soundscape as an exponent of cultural diversity.

The General objective of this doctoral dissertation is to apply the intangible cultural heritage protection formulated by UNESCO to
"Using sound media art to record and protect the sound landscape of typical areas on the Silk Road."

Through a literature review of Western sound research and the current sound landscape research status in China, China is currently conducting sound landscape research and research on a certain designated area. Quantitative analysis exists, but there is no study on"The sounds on the Silk Road from Xi'an to Urumqi."

The Silk Road is a vast area and has many research limitations in terms of geography. This research uses ethnographic research as the main research methodology, and finally determines the research site in China from Xi'an to Urumqi in Six specific regions.
In Chinese history, the Silk Road started from Xi'an, Shaanxi Province, and ended in Xinjiang Province, the last region connecting China with Eurasia.
I passed through the Longmen Grottoes in Luoyang, Henan Province, the surrounding areas of Mogao Grottoes in Gansu Province, and the surrounding regions of Qinghai Lake in Xining City Qinghai Province. As the gathering area of ethnic minorities in the southwest of China's Silk Road, Yunnan Province also includes this doctoral thesis research.

Try to find the voices on the Silk Road that are most worthy of investigation and preservation, and conduct field investigations and quantitative analysis.
The purpose of the research is to use a sound media library, soundscape map, and sound art museum display to reflect the ecological landscape environment of the Silk Road, the urban human environment, and the status quo of historical relics. Based on this, establish a sound landscape database.
To form a digital map of the Soundscape, making it an important carrier for the protection and inheritance of the sound landscape on the Silk Road, as a basis for academic and theoretical research on protecting intangible cultural heritage on the Silk Road.

The second objective of the research is to establish a sound media art laboratory and a sound documentation center in Shanghai Donghua University and Shanghai Arts & Design Academy, to supplement the current lack of sound media art as a research direction in design education in China. The third research goal is to apply future sound media art combined with big data artificial intelligence to serve society.

Apply intelligent sound design as an essential means of exhibition and display and demonstrate in Chinese museums.

In terms of research conclusions and social influence, this doctoral thesis puts forward for the first time "the application of sound media art to protect and inherit the soundscape of the Silk Road". First of all, a set of core methodology and research techniques in the research of this doctoral dissertation applied to the academic study of soundscape protection on the Silk Road. Due to the limitations of the research funding and time of the doctoral thesis, only investigate six important areas. I will not terminate this research because of the end of this paper.

Researchers will continue to study some other sub-important regions of the Silk Road in China. This doctoral thesis will lay a theoretical foundation for China and the world to study the "Silk Road" soundscape research.

Introduce the establishment method of sound media library into the design art education of Chinese colleges and universities. To make up for the lack of research in Chinese universities that specifically focus on sound art design instead of music theory research under art design research. The third is to create a sound media library and make an interactive multimedia map to be applied to the soundscape guide of the future cultural journey.

Use digital media technology and sound media art principles to design a virtual interactive sound museum. Establish a complete set of sound expressions, protect and Inheriting the Soundscape of the Silk Road while driving the richness of cultural tourism in the southwest and northwest regions of China. The audience can understand the history and culture of the Silk Road through acoustic sensory experience in multiple dimensions.

Keywords: Soundscape, Sound Recording, Sound Media Library, Sound Map, Silk Road, Intangible Cultural Heritage
Thanks

My first exposure to sound media art was in the Sound Media Laboratory of the University of Barcelona. I discussed my acoustic map project with Professor Josep Cerda. Although I have in multimedia teaching for many years, it is the first time to use "sound" as the primary vehicle for art project research. During the researcher's visit to the University of Barcelona, what was most impressed was the sound of the rolling shutter doors downstairs when the bell of the Barcelona Cathedral rang at

8:30 in the evening; the voices of people gathering together on the street corners were sometimes agitated and sometimes agitated. Whispering; from time to time, the sound of police sirens, ambulances, chanting, festive drums.

Life composes a soundscape map of Barcelona. At a specific time on the map, the place with the reddest dots may be the most stores. Or the peninsula where the waves hit the most intensely.

This soundscape map was drawn by the residents of this city using ordinary and vivid daily life.

Therefore, after the researcher completed his master's degree at the University of Barcelona, I started with the idea of "continuing to study the soundscape of the Silk Road" and began my doctoral research for nearly five years.

During the five years of Ph.D. study, from Barcelona, Spain to Shanghai, China, while teaching and educating people as an educator, completing my career as a lecturer to associate professor; while doing doctoral research across regions and languages. It is a job that requires extraordinary perseverance and endurance. The sudden teaching work and competitions, cross-academic exchanges, international exchanges, and other projects interspersed in a five-year international career.

Special thanks to my mentor, Professor Josep Cerda, for his tolerance and understanding, patiently guided this research direction in the form of illustrations and texts.

His enthusiasm for sound maps and sound sculptures gave me a lot of encouragement. As an educator who is fighting on the front line, taking the Chinese National Scholarship as a visiting scholar to study at the University of Barcelona, is it possible to improve the study of European sound research methodology and bring it back to China.

The tutor patiently explained the thesis topic and research plan formulation and research conclusions, gave pertinent opinions on the grasp of the research direction and core issues, and encouraged me as an art educator to use the voice as the medium to carry out the broad spirit of Chinese culture. Artistic creation. Going through this difficult time in 2020, I would like to thank my supervisor for guiding me through the online teaching platform for my doctoral thesis time and time again.

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found out the differences between the overall framework of Chinese academic papers and Spanish academic papers, making this research more theoretical and more literary. Possess international research ideas.

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Thanks to Shanghai Arts & Design Academy headmaster, Ms. Cangping, as a leader and as an academic research tutor, for the work support and educational guidance provided during my academic research period, for giving me high hopes for my transnational academic research. And my colleague, Associate Professor Wang Huajie, gave valuable opinions on the direction of sound selection in this research.

Thanks to Associate Professor Liao Qipeng from the China University of Geosciences, who is also a teacher and friend, I know that doing research is a practice of self-improvement. Give a scientific suggestion that " after reading a hundred academic papers, you will understand what an academic paper is." Unforgettable in this life.

Thanks to my family. For their support and understanding during these five years and forgive me for taking my vacation in China to Spain to study and exchange during the five years, and almost missed all Major holiday festivals and days.
Their understanding and support will enable me to continue my study in hardship and joy.

Finally, I would like to thank my classmates, Associate Professor Huang Geng from the University of Donghua, for his artistic guidance on the sound art exhibition, Zhang Le from the Renmin University of China for his suggestions on the English translation of the abstract part of this article, and my students Lai Xinyu, Chen Yuting, and Yu Kele; Zhang Guangya and Zhang Minghao, the work done in the sound editing for this research.

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Chapter I Introduction

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INTRODUCTION

The main objective of the doctoral thesis is to study the Soundscape in the Chinese route of the Silk Road from the premises issued in 2003 by the Convention for the Safeguarding of the Intangible Cultural Heritage of UNESCO. In China, no application of this agreement has been carried out. The research proposed by the doctoral thesis is an important precedent in applying the guidelines concerning the study and preservation of intangible cultural heritage.

The research work will use soundscape recordings in the regions where the Silk Road passage is traditionally established in China. The purpose of the recordings is to carry out a work involving the phases of compilation, creation of a sound archive, and diffusion through the exposure of the sounds through interactive technological means on the network, within the standards of the practice of sound art.

The General Conference of the United Nations Educational, Scientific and Cultural Organization, UNESCO, at its 32nd meeting, held in Paris from September 29 to October 17, 2003.

Approved the Convention for the Safeguarding of the Cultural Heritage Intangible, which is the intergovernmental agreement that Recognizes that communities, groups, and individuals play an important role in the production, safeguarding, maintenance, and recreation of intangible cultural heritage, thereby contributing to enriching cultural diversity and human creativity.

It considers the importance of the Soundscape as an exponent of cultural diversity. Since 2003, the Convention has been the most relevant world reference in the process of giving relevance to the values of intangible and intangible culture, establishing in Article 1 the following purposes
a) the safeguarding of the intangible cultural heritage;

b) respect for the intangible cultural heritage of the communities, groups and individuals concerned;
c) raising awareness at the local, national and international level of the importance of heritage
intangible culture and their reciprocal recognition;
d) international cooperation and assistance
(http://portal.unesco.org/es/ev.php-URL_ID=17716&URL_DO=DO_TOPIC&URL_SECTION=201.html)

The Soundscape, the sound environment of what surrounds us, is the sound expression of each place. Sound is a material that configures collective memory and individual memory, so we can say that a sound will represent something different for each person. Even temporarily, sounds create a connection with the members of a community, and the Soundscape refers to the events we hear, which mark the sound identity of a place and a culture. This sound space is, however, temporary, mutant, adjustable, and above all different. No one can repeat a sound twice; the sounds of a place have an unrepeatable sound characteristic that is transformed and modified over time.

One of the precursors to the study of Soundscape is Raymond Murray-Schafer (1933), who in the 1960s introduced the concept of Soundscape to the Simon Fraser University in Canada. For Murray-Schafer, Soundscape is the totality of sounds that are produced within a defined area, and any sound change, in turn, denotes a structural change in the environment; since 1973, he created the WSP project, Word Soundscape Project to study acoustic ecology. In 1977, he published "The Tuning of the World." where he defined the Soundscape as the expression of a landscape (natural or urban), a society, or an environment.

From the studies on the topics of Soundscape carried out by R. Murray-Shafer, developed various theoretical approaches and empirical studies have enriched the academic discussion on the subject.

There are currently numerous forums in which they have raised the need to rethink World Heritage and its effects on society and the sounds to be protected and their associated values. In this context, what began as an agreement between governments has diversified to include other social and artistic actors who are beginning to recognize their importance worldwide. Like all terms, Soundscape has undergone an evolution since it first enunciated.

It is about perception and understanding and the cognitive integration of a sound environment by some individual or social group of arbitrary size and scope.

It is, therefore, a relationship between the sound environment and the perceptual devices that account for it. The term is commonly used to designate sound environments presented fortuitously to the experience of individuals or to sound constructions resulting from the application of a will, such as musical compositions, sound generations of an installation or piece of art montages, radio stations, etc.

Although the application of the idea of Soundscape to artistic thought was conceived and developed by Ray Murray Schaffer, the term was already used in 1969 by Michael Southworth. Before that, Buckminster Fuller had already used epigenetic landscape to refer to the modification of the Soundscape by man and vice versa. As predecessors of soundscape studies, we find Hildegard Westerkamp, a researcher at the WFAE, who introduced the concept of Soundwalking, which refers to the sound walk through the natural or urban environment through the auditory experience, providing data that cannot be extracted in other study or measurement contexts. Jens Blauert, in the 80's contributed the studies of localization and spatial listening of sound, with the name of psychoacoustics, defining the sound events or sound events. Pascal Amphoux makes important contributions in listening to the sound environment, developing a study of European public spaces, translating the reality/representation relationship into the sound field, an aspect that has long research in the visual landscape. And Barry Truax, a Canadian musicologist, in the last decade of the 20th century, establishes the studies of Soundscape with acoustic communication and composition with environmental sounds.

The Convention for the Safeguarding of the Intangible Cultural Heritage has made it possible to carry out studies on the impact of the sound environment at a local, regional, and national scale in different areas, such as, with applications in different places, for example, the conservation and management of heritage, tourism, and pedagogical models. The project, started by Murray-Schafer, had a double aspect: an educational one, encouraging attentive listening to the sounds surrounding us; and another of protection or preservation of the identity sounds of a place. Considering the need to raise awareness, especially among young people, of the importance of intangible cultural heritage and its safeguarding,

We believe that the international community should contribute, together with the States Parties that signed the Convention on Intangible Cultural Heritage, to safeguard that heritage, with the will of cooperation and mutual aid,

Soundscape studies have not yet been developed in China. This Thesis aims to apply the concepts of the UNESCO Intangible Cultural Heritage Convention and implement, with the help of various Chinese universities, the study of related sounds with the environment and that they are firmly established in the natural and cultural background as a characteristic and differential element. A series of differential sounds in each place configure the collective memory that makes up patterns or mental images that function as symbolic archetypes. Listening triggers memories and diverse meanings.

It is we can consider a sound identity composed of information and emotions, which are not only personal but also cultural. Beginning in 1993, R. Murray-Shafer's disciples founded the World Forum of Acoustic Ecology. Acoustic ecology, also called eco/acoustics or soundscape studies, is a discipline that studies the relationship mediated through Sound between living beings and their environment. Soundscape ecology or acoustic ecology is learning the relationships between individuals and communities with their acoustic environment. Soundscape ecology is studying its effects on the physical responses or behavioral characteristics of those who live immersed in it.

Therefore, from the last decade of the 20th century, a deep interdependence between intangible cultural heritage and natural heritage was established, establishing correlations between Sound and sustainability.

As a differential element of each culture, the Sound is a document that is necessary to collect, analyze and preserve soundscape projects; it consists of making field recordings, documenting, and archiving these sound documents to promote dissemination and knowledge.

The soundscape is collected from different points of view and purposes, biological, geographical, anthropological, and in our case, as a material for artistic expression. Soundscape projects are developed as a systematic work of collecting sound data to identify its components since the record of the sound identity of each place is a document that helps to analyze the differential aspects of each environment. The field recordings made in the environment record the environmental sounds and give a sound image of the fleeting moment they have been captured.

The Thesis research project deals with the recording of the sounds of the natural and cultural environment of the Silk Road in its journey in China, identifying its components to configure a sound material so that it is preserved and disseminated. The fieldwork and data collection aim to reflect the sound identity of each place and establish a record that is a sound description of an environment, at the same time being a document that helps to analyze and preserve the differential aspects of each domain.

In the Soundscape recording project, will collect data in different aspects:
- Sound paths and drifts
- Sound, natural and cultural environments
- Industrial and trade sounds
- Sound events and popular parties
- Public, urban and rural sounds
- Sounds of natural and biological phenomena
- Cultural sounds of the diversity of cultures in today's society

- Acoustic signals
- Historical memory
- Oral tradition

In the soundscape recording project, data is collected, and field records are established, as established internationally with the following data:
-Title;
-Author;
-Description of the Sound;
-Location using GPS geolocation coordinates;
-Day;
-Hour;
-Environmental conditions;
-Search tags;
-Type of technology used in the recording;

Framing the recording in one of the typologies mentioned above: Sound paths and drifts / Sound, natural and cultural environments / Industrial and trade sounds / Sound events and popular festivals / Public, urban and rural sounds / Sounds of natural and biological phenomena / Sounds cultural diversity of cultures in today's society / Acoustic signals / Historical Memory / Oral Tradition.

The research project of the doctoral thesis is recording the sounds of places as a sound environment. They make up different aspects of the auditory landscape of the natural and cultural background of the Silk Road in its journey in China. These recordings from scientifically established fieldwork from content cards. The sound documentation and the scientific files of the fieldwork will deposit as a sound art archive at Donghua University in Shanghai and the Shanghai Arts & Design Academy. For disseminating the Soundscape of the Silk Road in China, we will develop a Web page designed especially with sound maps. The University will be attached to the Web and linked to the documentation centers established by said university national as international.

The purpose of this work will be to establish a sound archive, which collects the Intangible Cultural Heritage through sound records cataloged scientifically. It will also be essential to establish dissemination of this material with the design of a web page open to the contributions of people or groups that have newly created or historically sound documents concerning sound culture.

The material organized with acoustic maps or GPS location maps will describe the sound environment, reference images, the day, place with latitude-longitude, time, and environmental circumstances in which the sounds have been recorded.

Meanwhile, I will design a Museum or interpretation center of the Silk Road's Soundscape.

This doctoral thesis is present as a contribution within Soundscape studies, one of the fundamental aspects of intangible cultural heritage. It is established from a perspective of the study of cultural background sound environments, which are on the way to extinction—assuming the implications of structural change in Chinese society, in the study area of the Silk Road, which is transforming from a rural to a technological society. The fieldwork takes place in the same study position, so there is direct contact with the local communities that coexist and generate this heritage. This study has been carried out during four years of empirical research in the geographical place where the study is developed, and the selection and field recording of the case studies are found in areas that are very difficult to access for researchers from outside of China. With their corresponding field cards, the recorded sounds are an exponent of the changes that are taking place in this place and are a testimony of the transformations and modifications of the soundscape in China. Research results demonstrate the importance and impact of this type of intangible cultural heritage study.

1.1 Motivation and Justification

Interest in the Intangible Cultural Heritage began in 2014 when he came into contact with the Sound Art Laboratory of the Faculty of Fine Arts of the University of Barcelona from Dr. Josep Cerdà. Since 2006, the University of Barcelona has been developing systematic sound landscape recording studies. This laboratory made the recordings of the Soundscape of Brazil in Bahia, Sao Paulo, and Brasilia.

Dr. Josep Cerdà made the recording of the Soundscape on the Azores Islands, made on the island of Sao Miguel.

Also, he makes the fieldwork in the Canary Islands, Chile, Mexico City, Bolivia, Colombia, and different places in China (Beijing, Shanghai, Yichang, QingDao, ShenZhen) antecedents of the doctoral thesis.

The author of the thesis at Shanghai Arts & Design in the field of new technologies of image and design created the right environment to start the study of the sounds of the Silk Road.

The importance of this thesis lies in the union of a technological field such as field recording, sound editing, the creation of interactive sound maps. The components of Sound Art and an artistic expression developed in the actuality are practiced in contemporary art and have yet to be implemented in China.

In China, there is very little information about this new form of artistic expression. One of the purposes of creating a museum or interpretation center for the Soundscape of the Silk Road is to introduce the Chinese public to the main artistic concepts and productions of sound art. This doctoral thesis is part of heritage studies applied to the artistic practice of Sound Art, with an evident projection and application in the fields of cultural management and tourism.

Therefore, the interest and purpose of this thesis are that this museum is the first

of its kind in China since it represents a relevant contribution to the knowledge of sound art and is a museum that offers a differential characteristic to other contemporary art museums Chinese.

1.2 Objectives

This doctoral thesis's research objectives have been defined from the analysis of state of the art on the subject. Basically, the writings mentioned above, by the researcher R. Murray-Shafer, and his followers. And he was structured from the text of the Convention for the Safeguarding of the Intangible Cultural Heritage.

1.2.1 General objective

The general objective of this doctoral thesis is to establish the parameters of a field study of the sounds of the soundscape of the Silk Road

in China, which is established by the Convention for the Safeguarding of the Intangible Cultural Heritage of the UNESCO. The geographical scope of the study is on the Silk Road from Xi'an to Urumqi. The specific areas are explained in detail in Chapter three.

some areas of China that still maintain a strong tradition and influence of traditional and popular cultures. The purpose of the study, which is shown through field recordings, is to establish a sound archive for its preservation, cataloging, study, and dissemination of the cultural and natural aspects manifested through sound as a primary element. Likewise, the need to establish a study and documentation center at Donghua University and the Shanghai Arts & Design Academy is to apply and develop design criteria to be a starting point for other environments in China that may be necessary for this type of soundscape studies. Establish parameters emanating from the UNESCO convention that is representative for the cultural management of cultural heritage. Establish parameters for the participation of local communities to continue the study in the future.

The purpose of this work will be to establish a sound archive, which collects the Intangible Cultural Heritage through sound records cataloged scientifically. It will also be essential to develop a dissemination of this material with the design of a web page open to the contributions of people or groups that have newly created or historically sound documents concerning sound culture.

The material will be organized with acoustic maps or GPS location maps, which will contain a description of the sound environment, some reference images, the day, place with latitude-longitude, time, and environmental circumstances in which the sounds have been recorded.

1.2.2 Specific objectives

The three specific objectives of this research mentioned below:

1.2.2.1 First Specific objectives

Carry out a sound study of the geographical areas of the Silk Road by recording the Soundscape as an identifying and differential element through fieldwork in situ. In the Soundscape recording project, data will be collected in different aspects:
- Sound paths and drifts
- Sound, natural and cultural environments
- Industrial and trade sounds
- Sound events and popular parties
- Public, urban and rural sounds
- Sounds of natural and biological phenomena
- Cultural sounds of the diversity of cultures in today's society
- Acoustic signals
- Historical memory
- Oral tradition
The project deals with the systematic recording of the sounds of the natural and cultural environment, identifying its components to configure a sound material so that it is preserved and disseminated. The fieldwork and data collection aim to reflect the sound identity of each place and establish a record that, as a sound description of an environment, is a document that helps to analyze and preserve the differential aspects of each environment.

It should be noted that the first time a sound research work of this nature has been carried out in China is the first time.
Therefore, the contribution will have an impact on a cultural and academic level. Technically, it will be done through conventional stereo recordings and recordings using the binaural technique, which establishes the sounds in three dimensions. The edition will find out using editing programs and spectral analysis of the recorded sounds.

1.2.2.2 Second Specific objectives

Create a documentation and archive center for fieldwork at Donghua University and the Shanghai Arts & Design Academy.

This archive will contain computerized fieldwork through sound recording and a content sheet for each referenced sound. Sound is a document that is necessary to collect, analyze and preserve soundscape projects. It consists of making field recordings, documenting, and filing these sound documents to promote dissemination and knowledge. Soundscape projects developed as a systematic work of collecting sound data to identify its components since the record of the sound identity of each place is a document that helps to analyze the differential aspects of each environment.

The field recordings made in record the background of environmental sounds and give a sound image of the fleeting moment in which they have been captured: In the soundscape recording project, data is collected, and field sheets with Title are established; Author; Description of the sound; Location using GPS geolocation coordinates; Day; Hour; Environmental conditions; Search Tags; Type of technology used in the recording; in one of the following typologies: Routes and sound drifts / Sound, natural and cultural environments / Industrial and trade sounds / Sound events and popular festivals / Public, urban and rural sounds / Sounds of natural and biological phenomena / Cultural sounds of the diversity of cultures of current society / Acoustic signals / Historical Memory / Oral Tradition.

1.2.2.3 Third Specific objectives

Establish a dissemination program through the design of exhibition space, an interactive sound map, and a web page that shows the different soundscapes of the Silk Road on its journey in China.

It is essential to establish the dissemination of this material with the design of a Web page open to the contributions of people or groups that have newly created or historically sound documents about the sound culture of the Silk Road. The will organize the material with sound maps geolocated by GPS, which will contain the content and description of the recording, the day, place with latitude-longitude, time, and environmental circumstances in which the sounds have been recorded.

1.3 Research hypothesis

This doctoral thesis has a starting point hypothesis that can establish the relationship between the Soundscape and the territory.

The concept of Soundscape has evolved since R. Murray-Shafer formulated it, and it is with the dynamic and temporal expression of the Soundscape about culture. The Soundscape is not immobile and fixed in space and time, but it is exposed to multiple variables with a common denominator the interaction of a place and those who inhabit it. That is, it is concerning an active phenomenon and in process. The Soundscape is the expression of the different people who inhabit it, its cultural context, and its diffusion, all in interrelation with the natural environment surrounding it.

The Soundscape of the Silk Road is not one. It varies in geographical places and changes over time due to historical events, diverse cultural aspects, and more invisible elements such as immaterial concepts as are religious or spiritual beliefs. The hypothesis of this thesis is to reveal these variables that make each sound different and frame it in a close relationship with the genius logic of each place.

The recording of the Soundscape that we make will be a mixture of sounds resulting from geophony sounds.

Sound with geographic variables and natural sounds, from biophonic sounds, sounds from different forms of life, including human life; and anthropophagic sounds,

that is, cultural sounds in all its aspects, from industrial and trades sounds to sounds produced by multiple technological devices.

This relationship between sound, individual, and environment is from which the general hypothesis of this thesis establishes.

From which the conceptual relationship with the UNESCO Convention for the Safeguarding of the Intangible Heritage will be established.

In this trilogy, formed by sound with its physical variables and the information it provides to human perception;

the individual who confers on him a past meaning through the sieve of his thoughts, feelings, and memory; the environment, with its differential aspects of climate, geography, and physical elements, are those that will ultimately reflect in the recorded sounds.

1.3.1 First secondary hypothesis

It is in relation to the evolution of the sounds of the Soundscape. The postindustrial soundscape has a series of effects and conditioning factors already defined in R. Murray-Shafer's studies in relation to the soundscape.

The soundscape of the Silk Road is not outside the cultural and technological evolution of Chinese society. According to Murray-Shafer studies, the sound space functions as a multispace that is structured by layers of sound. Murray-Schafer establishes two large blocks: a high-fidelity landscape, where sound levels and layers are clearly discerned, with a good noise-signal ratio, and which, as a general rule, is found in a natural sound environment.

And the low-fidelity landscape, where the layers are mixed and where we find a masking that does not allow us to discern the sound source and signals without variations, continuous sounds, and ambient noise congestion, typical of an urban sound environment, prevail. The environments of our cities are losing definition, there is a certain sound amalgamation and in general they are losing sound features that were characteristic of them and sound marks that marked their differentiation.

This will be the second characteristic hypothesis of recorded sounds, the unfavorable relationship in sounds recorded in urban environments: they are low fidelity sounds, they have a signal overload with obvious masking and lack of clarity. On the other hand, in natural spaces, there is a proliferation of high-fidelity recordings, they have a higher definition and we can clearly discern the sources and sound layers.

1.3.2 Second secondary hypothesis

Acoustic ecology is the relationship between sound and the environment, with the basic premise that any change in environmental sounds denotes a structural change. Any change in an environment, natural or cultural, entails a sound change. One of the basic elements in which the transformations in the urban environment can be detected is in the sound; migrations and social changes involve new sounds immediately noticed in buildings and the streets.

The thesis establishes an observatory for the transformation of sound. It focuses on analyzing the sound environment in areas where sudden changes of transformation in both the natural and urban environment, migratory movements, or places of articulation between the urban and nature. Each city, neighborhood, or street has a differential sound environment that transforms and adapts over time. The sound in the studied areas reflects different flows, networks and layers; the sound map must necessarily reflect this dynamic construction that occurs every moment in the places of confluence.

Other types of tools are needed to reflect the visible and invisible flows of places where global spaces and local spaces operate simultaneously. Sound maps can be a tool to create an interconnection of layers of diverse information.

The Sound cartography wants to reflect complex events and dynamics such as migratory movements. The sound marks and acoustic traces of mobility mixed in the auditory area are defined by the sound environment of urban and natural spaces. The public space is a sound composition in transformation and reflects the structural changes in society.

1.3.3 Third secondary hypothesis

Combine the application of new technologies in the development of the soundscape in the future. In reality, the current soundscape moves between the physical and the virtual soundscape. The diffusion of the soundscape requires the hybrid experience configured by the interface, that is, the interaction with technology.

In the chapter seven of this doctoral thesis, there is a specific application introduction

1.4 Selection of case studies

Through the ethnographic research method, to give a detailed introduction in chapter three later, and six case study areas shows here:
Application to case studies (I): Shaanxi Province
Application to case studies (II): Henan Province
Application to case studies (III): Gansu Province
Application to case studies (IV): Qinghai Province
Application to case studies (V): Xinjiang Province
Application to case studies (VI): YunNanProvince

1.5 important definitions

1.5.1 The Silk Road

In the history of the world, the Silk Road is a famous symbol. In the book "The New History of the Silk Road", the author pointed out that there has never been a single, continuous Silk Road, but only a series of markets between East and West. (Hansen, 2012)

The book pointed out that the Silk Road is not a road but a constantly changing and unmarked road network. From today's point of view, the Silk Road is a network of commerce, agriculture, customs, and relationships that runs through the exchanges between China and the West, that is, what we call an essential part of international exchanges today.

The online trading platforms used by people in the 20th century, such as Taobao, Amazon, and eBay, are trading networks in virtual reality. Today's couriers are acting as Arabs in those days.

The Romans favored the goods of ancient Xinjiang or "Kuche", and they were transported from China to ancient Rome by Arab camel caravans.

Silk was only a tiny part of the products. However, the goods, folk customs, markets, musical instruments, etc., that the merchants walked all the way passed from east to west and from west to east. For example, Xinjiang's favorite meat-wrapped cakes are bake in almost the same way as Italian pizza, topped with seasonings, and Turkish cakes jokingly called earth cakes China. Xinjiang's unique musical instrument "dongbula," regardless of its appearance and play. The method of playing is the same as that of the Laud piano in Turkey. Researchers visited the antique market in the 18th arrondissement of Paris in 2018 and found an antique-grade Laud and a Portuguese fado piano in a similar shape.

1.5.2 Classification of sounds in traditional Chinese culture

According to the five elements, the Chinese "I Ching" [1]also classifies musical instruments, yin and yang. According to the tonal classification, the voice of the palace is the lowest, the representative instrument is the drum, which is generally used as a prelude; the second is the quotient, and then slowly transitions to the corner and the sign, and the voice of the feather is the highest.

The wisdom of I Ching is derived from life. Ancient people's sounds are relatively low when they hit soil, pots, earthenware pots, etc., and metal utensils, such as chimes, get deep and far-reaching sounds with a relatively low pitch.

1.5.3 Sound Media Art

The art of sound media is not a separate subject but a comprehensive multi-disciplinary and interdisciplinary research direction such as sound science, art, sculpture, behavioral art, and medicine. It covers sound classification, collection methods, relationships and interaction with human society, sound visualization display, derivative artwork creation, etc. The soundscape is the voice expression of every place. Sound is the material that configures collective memory and the material of personal memory, so we can be sure that sound will represent the difference between each person. Even if it is temporary, sound creates a connection with community members. Soundscape refers to what makes a place's sound characteristics, the events we hear, which is ultimate, this soundscape, however, short-lived, mutant, in time.

In Shanghai, sound media art has gradually entered the public's audiovisual industry under the international environment. It is indispensable in digital media art, animation, and game design, but related research theory and practice are scarce. The creation of many animation games focuses on the settings of characters and scenes, and most of the sounds used have not been professionally and systematically set. Many domestic colleges and universities have created vocal music colleges, but almost no research on sound media art is independent research.

Most of them link to music colleges or electronic music.

There is a lack of knowledge and research on sound in heritage protection, and a large amount of sound heritage has destroyed.

It is urgent to use sound media art to protect and inherit soundscape heritage.

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[1]Ancient Chinese philosophical works integrating natural sciences and social sciences

Therefore, researchers take sound media art as a separate subject to study, put forward the concept of "sound media art" from an artistic perspective, focus on the sound on the Silk Road, and collect sounds with unique ecological landscapes, cultural landscapes, and oral history. Carry out analysis and evidence collection to achieve the purpose of research, practice, and innovation.

The horn represents bamboo and wood musical instruments, meaning the song of birds. The pitch begins to rise and fall; Zheng refers to stringed instruments like erhu and maroquin, and the musical instrument Laud introduced by the Arabs is also a representative of Zheng. Yusheng represents the Guqin and Guzheng musical instruments, the most famous piece of ancient Chinese music, "High Mountain and Flowing Water"[2] As a masterpiece of Chinese Guzheng music.

> *In the ancient Chinese music book "Yue Ji"[3], it is said that the palace is the.*
> *emperor, the business is the minis-ter, the horn is the people,*
> *the levy is the matter, and the feather is the thing. It*
> *is said that Gongyin represents the emperor and Shangyinrepresents Wanmin...*
> *This is "the monarch and minister said."* （*Yue Ji*，*n.d.*）

1.6 Structure of the thesis

The overall research framework of this study is building with a scientific and logical method. The first part is the theoretical basis of the research, the second part is the research practice, and the third part is the research conclusion. There are eight chapters in total. Take the soundscape on the Silk Road as the research object. Including the research plan and design implementation of soundscape, the practice based on sound media art on the Silk Road, and finally applying sound media technology to display research results in museums and other spaces. From a geographical point of view, the focus of the study is on the Silk Road, Xi'an, and Urumqi, China.

Table 1-1 The Structure of "The sounds on the Silk Road from Xi'an to Urumqi——Soundscape, collection and exposition of the sounds."
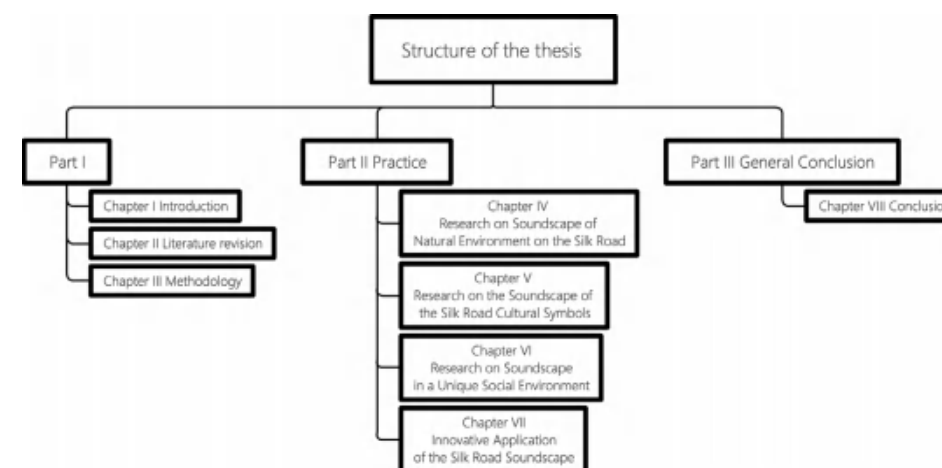
The first chapter is the introduction, which mainly introduces the source of inspiration of this research, the basic overview, including the research background,

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[2]Ancient Chinese GuQin Music Chinese Guqin, is one of China's top ten ancient songs. Legend has it that Bo Ya, a violinist in the Pre-Qin Dynasty, once played the piano in a barren hills and wilds

[3]Chinese Confucian Music Theory Monograph

research purpose, research hypothesis, research methodology, and technical route, and the main innovations of the research. It is the basic framework of this work. The first chapter is the research guiding ideology of the whole thesis, the overall research direction, proposes and analyzes the research questions of the theory, and gives the research framework structure diagram. Ensure that the researcher investigates the correctness and feasibility of the ideas and routes in the following chapters. At the same time, it is the direction to lead the innovation part.

The second chapter is a review of related theories and literature on the exploration of sound media art. They are comparing with the relevant research reviews in European and American countries, reviewing the development history and future development trend of sound media art, and analyzing the current problems in China, studying five excellent cases of sound media art. After the argument of this chapter, the "title" is a research direction that the predecessors did not come. The lack of research on the sound on the Silk Road in modern history is added, and it plays an important role in the protection of the soundscape on the Silk Road.

The third chapter is the research methodology. Because of the complexity of the sound geography and region of the Silk Road, this research mainly applies the ethnographic research method to get the key areas of the research area, and the second involves the focus group method to discuss the Silk Road. Sound media art" which are worth collecting and recording. At the same time, it uses quantitative data analysis and questionnaire survey methods to analyze the collected sounds scientifically. Put forward a research and research plan and conduct data analysis with Xi'an as a practical research site and give instructive significance to the practice of Chapters IV, V and VI

Chapter IV: focuses on the natural environment sound landscape of the Silk Road, combined with the Audition audio editing software to use the observation method to study the sound in the natural landscape.

Chapter V, as the research chapter of the sound landscape of the cultural symbols of the Silk Road.

Studies the markets, public spaces, and folklore sound landscapes in the urban environment of the western area of the Silk Road; it studies ancient towns, relics, caves, temples, etc. in the historical and cultural heritage. Perform soundscape testing in local areas and use Audition and Touchdesign software to perform secondary editing and classification of sounds.

Chapter VI studies the sound landscape under the unique social environment. The key research area is the comparative study of the unique festivals, ecological environment, and handicraft intangible cultural heritage in southwestern and northwestern China. Application Audition software combined with the actual collected sound for digital comparative analysis, especially for digital analysis of noise reduction and sound curve changes.
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Chapter VII Innovative applications of soundscape on the Silk Road. The research report proposes a sound media library, sound label design, soundscape map design based on the sound media library, and sound event design based on the Silk Road soundscape. Combined with the previous Chapters IV, V and VI of the practice, innovative design of sound sculpture modeling on the Silk Road, and sound museum extension design.

Chapter VIII Research Conclusions and Prospects. Through five years of research on the sound media art of the Silk Road, we have drawn research conclusions and academic value, future development prospects, and the five significant impactions of this research on the soundscape

1.7 Result

By exploring the sound media art on the Silk Road, we see the Silk Road culture and intangible cultural heritage that has lasted for thousands of years. Due to the particular climate and geological characteristics of the desert area, it has been kept today.

For example, the Cao family in the Yulin Grottoes was the first place at that time. Its portraits, costumes, and attendants represented the highest level of painters at that time.

The painting lines, complexions, and costumes excavated in the caves are all from our Tang dynasty and Yuan dynasty studies.

After this chapter, the researcher starting from Shanghai, China, will walk through the Chinese part of the Silk Road and visited many famous historical and cultural villages in Asia and Europe. And attractions.

As the form of sound recording, the author, will records made under certain weather conditions on a certain year, certain day, certain time, and certain time in the time section into the sound media library, put it into the sound map node, and attaches a picture to the text, in the form of a QR code. Comprehensively show the artistic conception of the time and carry out literary creation.

According to the research objectives and research hypotheses listed they need to be completed in the following chapters

Chapter II
Literature revision

2.1 Introduction

2.2 Summary of European and American Literature
      2.2.1 Literature review on soundscape research
          Methodology
      2.2.2 Literature Review on the Research of Sound Map

2.3 Chinese literature review
      2.3.1 Literature Review on the Combination of Sound
          Ecology and Regional.   Cultural Research
      2.3.2 A Summary of Research Documents on Regional
          Culture
      2.3.3 A Literature Review on the Application of Sound
          Art Creation

2.4 Case studies on the use of sound art on a global scale
      2.4.1 Sea Organ
      2.4.2 Berlin Art Festival, Germany
      2.4.3 Barcelona Multimedia Arts Festival
      2.4.4 Experimental sound art
      2.4.5 The application of sound in museums

2.5 Discuss

2.6 Result

2.1 Introduction

The second chapter aims to build a theoretical foundation on which the research is based by reviewing the relevant literature to identify research issues worth investigating because they are controversial and have not answered by previous researchers. The literature review is not an end in itself, but rather a means of identifying, in the end, the issues worthy of investigation that will list as the result of the chapter.

Based on the current research on sound media art in the world, this doctoral dissertation will analyze and find literature from three aspects:
  • Sound-related academic theoretical research
  • Unique research on the Silk Road
  • Creation and practice
Based on the objective of the research and the hypothesis proposed in the introduction of the first chapter.

From the perspective of sound theory research foundation, search for Sound art through Wikipedia. Simultaneously, through the "Zhiwang"
（Retrieved from:https://kns.cnki.net/kns8/defaultresult/index.2018）

China's only authoritative academic website, search and literature search for words such as sound media art, soundscape, Silk Road, and intangible cultural heritage. In the theoretical research of the core journals of the obtained research doctoral dissertation and master's thesis.

I tried to find the first research goal set in the initial stage of this doctoral dissertation: building a sound media library and recording the sound landscape on the Silk Road through sound recording. Intangible cultural heritage is record and

protected. It is the exploration of the soundscape.

According to the "Convention for the Protection of Intangible Cultural Heritage"(UNESCO), China protects the Intangible Cultural Heritage on the Silk Road... The soundscape database is to form a digital map of the soundscape, making it an essential carrier for protecting and inheriting the soundscape on the Silk Road.

First, through related searches, it has been estimated whether the research methodology model hypothesis proposed in Chapter I applies to this doctoral dissertation research's general methodology to guide the later practical research. Second, from the perspective of sound recording, sound media library establishment, and education-related content literature.

Most of the existing research focuses on sound landscape research, and there are more researches in fixed locations and areas. The sound maps and sound evaluation systems used in European and American countries are relatively complete. A large number of articles and exhibitions related to sound have sprung up in the researcher's recent ten years of research and achievements in China. But as an independent subject, there is little research.

Most of them are attached to the theoretical analysis of musicology and the type disciplines of film and television post-processing design.Third, based on the historical and particularity of the research, a group of individual scholars on minority culture, religion, writing, ecological living environment, etc., have emerged in China's cultural studies on the important areas of the Silk Road. They lack horizontal comparison and have gone through historical changes. The production and lifestyle of the regions along the Silk Road have changed, from primitive male farming and female weaving to modernization. Traditional religious activities, festivals, handicrafts, languages, ecological environment, and characteristic regional environment are all changing.

China's protection of the intangible cultural heritage on the Silk Road is imminent. Therefore, in terms of literature review, researchers have studied documents related to ethnic minorities on the Silk Road.

Professor Valerie Hansen believes: "If you only look at the number of goods trade and the number of people going, the Silk Road is one of the roads with less traffic in history." The Silk Road played an important role in enhancing the cultural exchange and integration of countries along the route.

The Silk Road contains a wealth of undiscovered sound art.
Sound media art is innovative research that combines music and plastic art. It is an effective way to protect and inherit the sound of the Silk Road. It is not only for artistic creation but also for a valuable sound media library so that some intangibles were being lost.

The cultural heritage is shown in the form of sound media archives.
 American avant-garde classical musicologist John Cage said, "Everything we do is music." In his work "4 minutes and 33 seconds" in 1952, he only placed the score, put on glasses, and pressed a timer every minute against a beautiful piano. He did not touch the keys for the entire 4'33".

Finally, he won. He was a pioneer of electronic vocal music and opportunistic sound. His creative inspiration was influence by Eastern Buddhist philosophy. He used the ancient Chinese philosophical masterpiece "The Book of Changes" to complete most of his experimental sound art creative works. The affirmation is not to get out of chaos, nor is it to create for change, but to wake people to realize the beauty of current life. "From this era, artists have begun to experiment with sound for artistic creation. （Cage,1952)

The Chinese composer Tan Dun[1] believes that "John Cage itself thinks that 4'33" has content, and those who don't understand it think it doesn't. At least the personality now thinks it doesn't, which is normal. "Just as myself, maybe I can resonate with

Cage when I "appreciate" 4'33" in the concert hall today, "appreciate" it with "convinced," but change to another occasion, such as a famous concert. On occasion, I suddenly inserted a section of 4'33" in the middle, and I felt wrong. In this example, I was exposed to 4'33" twice but reacted differently, just like in a high-end western restaurant. A pure Chinese meal that is suddenly inserted in China will feel disgusting, but it will not be in the "Borderless" restaurant. There are two different personalities before and after. The way of dealing with things is different, and what is constructed is a different gestalt. Everyone has this "personality switching function." If they don't have it, they can't live an everyday life at all. This switching function is used seriously beyond a certain range of change or time limit (Floyd, Watson, and Maslow have all described this limit in detail from different angles and standards). It becomes schizophrenia. Going beyond boundaries is a standard psychological defense mechanism, which is our normal function of dealing with different situations in all aspects of life.

Professor Josep Cerda of the University of Barcelona in Spain took the soundscape of the Alhambra as his research object and designed an interactive sound map of the "Alhambra" that integrates Spanish multi-ethnic cultures. "the term we use to define and analyze the location of sounds in space." (Cerda, 2016) As my Ph.D. research tutor, Professor Josep Cerda's preliminary research has given this article strong guidance.

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[1]Tan Dun, a famous conductor and musician

2.2 Summary of European and American Literature

2.2.1 Literature review on soundscape research Methodology

Ozcevik, A., & Can, ZY proposed in 2012 A field study on the subjective evaluation of soundscape that soundscape quality may be judged depending on its components (keynotes, signals, sound marks). Moreover, the perceptibility of the sound mark may be an important factor in the evaluation. (Ozcevik& Can,, 2012)

Davies, W. Adams, & Bruce, in 2007 "THE POSITIVE SOUNDSCAPE PROJECT"[2] pointed out that an essential point of soundscape research is "To acknowledge the relevance of positive soundscapes, to move away from a focus on negative noise and to identify a means whereby the concept of positive soundscapes can effectively be incorporated into planning;

The evaluation of the relationship between the acoustic/auditory environment and the responses and behavioral characteristics of people living within it."

International held in Buenos Aires – 5 to 9 September 2016
In PROCEEDINGS of the 22nd International Congress on Acoustics,
Daniel Steele, & Edda Bild.Et al. proposed that: One-minute audio recordings were taken before and after the session at the same microphone gain level; however, microphone position was only controlled to the extent that is was possible in the changing conditions of the site and available measurement positions. While a seating area was chosen to increase the visibility of the entire study area, the same location was not consistently available, and park users varied considerably in their minimum distance from the microphone. (Daniel Steele, & Edda Bild,2016)

In the methodology in Chapter III,, the study repeatedly collects certain sounds with clear sound characteristics in a region. The same sound may appear in several different sound segments at the same time. To obtain more effective sound data through quantitative analysis in practical conclusions. The researcher concludes here that for sound analysis, without a certain amount of research, it is not enough to support the entire research data.

To further determine the effective research method of soundscape collection on the Silk Road, College of Architecture and Planning, Dammam University, "SOUNDSCAPE APPROACH AS A TOOL TO EVALUATE THE ACOUSTIC COMFORT IN URBAN OPEN SPACES" paper proposes Urban planners and designers need more information to improve the cities' environmental quality. (KSA, 2014). One of the most critical elements of the urban environment is acoustic comfort. Till now, noise mapping is the only way to evaluate outdoor acoustical environments. Using in-situ measurements and simulation tools, we can obtain the Sound Equivalent Level values around urban spaces.

Through the literature mentioned above search, the researcher decided to use the ethnographic methodology as the general guidance method for the research of this doctoral dissertation. Its diversity and flexibility can record different soundscapes in different areas on the Silk Road.

Tin Oberman&Kristian Jambrošić from University of Zagreb discusses the soundscape assessment approaches to soundscape interventions with musical features introduced to public spaces as permanent sound art.
This research approach that "limitations related to sound source identification due to cultural factors and geometrical configuration of the public space at one location."The two most common soundscape analysis methods are based on soundwalks or laboratory" [3] (Oberman, A. A., Jambrošić, B. B., Horvat C. C., & Šćitaroci 2020,p.307)

[2]Davies, W., Adams, Bruce, N., Cain, R., Carlyle, A., Cusack, P., ⋯ Plack, C. (2007). The positive soundscape project. In 19th International Congress on Acoustics 2007 (pp. 1565－1570).

[3]Tin Oberman,,Kristian Jambrošić,,Marko Horvat & Bojana Bojanić Obad Šćitaroci.(2020). Using Virtual Soundwalk Approach for Assessing Sound Art Soundscape Interventions in Public

2.2.2 Literature review on sound map research

Maurice Merleau-Ponty pointed out that sound is a "hidden dimension" in his book "Visible and Invisible" at the seminar on sound maps at Ghent University in Belgium in 2019. "This is where I look. I am at the same time with things. It happened, so I was too close to see, but I could hear it when I heard my voice. Here, I heard the sense of simultaneity with others and other things and felt the depth between the two; the sound did not quote a dictionary, there is no specific category, but the movement and configuration of knowledge and unreliable things that sound ambiguous." (Ponty,2019)

Peter Batchelor[4] says that"A variety of ways in which various acousmatic compositional techniques relating to intimacy might be brought to bear on and operate as a way of drawing a listener into a work are explored, in particular as they relate to the consideration of space and spatial relationships."(Batchelor,2019，p.307)

This raises the sound research to a philosophical and artistic height, making the "sound map" more than just a map or Tourism and city evaluation maps are so simple. Still, they have been upgraded to an artistic and philosophical creative thinking.
After the researchers analyzed a large number of documents, they found specifically for Getting to know the Firenze Sound Map. (Stéphane Flesch, Anne-Sophie Gutsche, Daniel Paschen,2017)

As mentioned in "Exploring the Untapped Potential of Sound Maps",
Sound maps represent the sound of a particular territory, they consist of a map and located soundscapes. A soundscape is not only a sonic environment.

First research has shown that most sound maps are visualized in the same way and do not invite further exploration. The visualization of sound itself also opens up more challenges, Regarding the application of future artificial intelligence design and display of soundscape maps.

The acoustic environments of traditional Buddhist temples also make a strong impression on visitors. In Chinese Buddhism, ceremonies emphasize the pursuit of the spiritual realm, chanting and the playing of music for a long time, and other methods are used to purify a Buddhist's mind.A good acoustic environment and an excellent visual environment are important means of creating a religious atmosphere within the temple. (Zhang, D., Zhang, M., Liu, D., & Kang, J. 2016) The paper's research convinced the researchers that through sound collection and study, the historical relics, temples, and world cultural heritage on the Silk Road could re-speak to the world and enter the museum in a new way of interactive sound media art. Enter the art exhibition, or directly enter people's lives in the way of sound museum.

[4]Peter Bachelor. (2019).Grasping the Intimate Immensity: Acousmatic compositional techniques in sound art as 'something to hold on to'. Organised Sound (3), p.307-318

2.3 Chinese literature review

The research on sound media art in China started relatively late, and in the past ten years, it has begun to show Soundscape research.

Researchers have rarely consulted Chinese literature and related research since the master's degree in 2015.

On the contrary, recently, due to interactive multimedia art, sound-related theoretical research and exhibitions, Internet applications have emerged on a large scale, especially in 2020. In the future, with the promotion of education and teaching applications on the Internet platform, voice has become a necessary form of expression. Breaking the former is only for the needs of film and television post-production. There is a demand for talents specifically targeting "sound design" in the market.

Simultaneously, since the main research area of this doctoral dissertation is in China, a large number of literature studies of relevant research locations are searched through Chinese journal websites/Chinese Silk Road-related books. Based on previous research, find relevant research content and methods.

In ancient China, there have been researches on soundscape-related theories. China's first garden monograph, "Yuanye"[5] and "A Dream of Red Mansions"[6] in China's four significant classics all have earlier descriptions of soundscape, using soundscape to create classical garden atmosphere traced back two thousand years ago. For example, the Taihu stone in the pavilion produces a chime when the wind blows by and uses the sound of nature to play harmony.

Besides applying "water" in the Humble Administrator's Garden in Suzhou, China, the sound of flowing water imitates the sound of natural streams or waterfalls to create landscapes, making the originally immobile buildings agile.

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[5]A monograph on ancient Chinese gardening, the first monograph on garden art theory in China

[6]One of the four classic Chinese classics

2.3.1 Literature review on the combination of sound ecology and regional cultural research

In recent years, some research projects have combined sound ecology and regional cultural studies. Excellent results have achieved in a small area. The doctoral dissertation "Soundscape Research of Guizhou Traditional Tribes from the Perspective of Sound Ecology"[7] by Mao Linqing of Harbin Institute of Technology, directed by Professor Kang Jian, proposes traditional soundscape protection strategies the sounds of traditional settlements in Guizhou Miao and Dong Autonomous Prefectures. Combined with the soundscape test, the research is conducted on the natural ecological soundscape, humanistic soundscape and unique social environment soundscape in the traditional minority tribes in eastern Guizhou, China, and the protection of the traditional soundscape in eastern Guizhou is proposed. A numerical analysis is given for the factors affecting the protection of cultural soundscapes.

Li Guoqi of Tsinghua University proposed establishing a "sound museum" database in "Soundscape Research and Soundscape Design". By collecting many sound and image materials and integrating them through integrated interactive functions, users can get a clearer picture through this software. The software recognizes the various sounds around us more clearly. China put forward earlier that soundscape research is a measure of whether a city is livable.[8]（Li，2004，p.4)

Lu Ying of the Central Academy of Fine Arts, in " Sound Experience-Research on Sound Consciousness and Auditory Aesthetics of Design ", earlier proposed the relationship between sound and education. The current education in China is more focused on sound art design, sound media art, and sound sculpture. Missing. The second research goal proposed in the introduction of this doctoral dissertation has been demonstrated by promoting this research "for Chinese sound art design education" and the importance of systematically establishing a sound media

database.[9]（Lu，2017，p.127)

[7]Mao Linqing. (2014). Research on the soundscape of traditional settlements in eastern Guizhou from the perspective of sound ecology (Ph.D. thesis, Harbin Institute of Technology). Retrieved from： https://kns.cnki.net/KCMS/detail/detail.aspx? dbname=CDFDLAST2015&filename=1014081357.nh

[8] Li Guoqi. (2004). Soundscape research and soundscape design (PhD dissertation, Tsinghua University).https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CDFD9908&filename=2005035246.nh

[9]Lu Ying. (2017). Sound Experience (Doctoral Dissertation, Central Academy of Fine Arts). https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CDFDLAST2017&filename=1017182503.nh

2.3.2 Summary of research literature on regional culture

In the literature related to regional studies, Zhao Weiping of the Shanghai Conservatory of Music published "History of Pipa Musical Instruments on the Silk Road"[10]in the China Music Quarterly in 2003 He gave a detailed introduction to the origin, spread, and style of the pipa on the Silk Road and discussed them. The five-string pipa that appeared in the Dunhuang frescoes is in contrast with the current pipa. (Zhao, 2003, p.38)

In 2016, Jiang Xingmei and Zhang Xianqing proposed in "Public Culture and Ethnic Boundaries: Ethnic Expression of Zhiju Yi Dress Competition Festival"[11], The Clothing Competition Festival is a cultural activity to entertain people and oneself." Public culture is an important source of public cultural products. （Jiang & Zhang, 2016, p. 68）

In 2019, Song Aimu believed that the Yi folk songs of Chuxiong, （Song，2019） Yunnan have formed a unique label in terms of aesthetics. The content of the folk songs is all-encompassing and almost reflects the entire picture of the history, culture, production, and life of the Yi people and has an epic significance.

2.3.3 Literature review on the application of sound art creation

In the application of sound art for artistic creation and prospects, Zhu Muran of Northwest University for Nationalities mentioned in "The Book of Changes and Composition---and John Cage's Incidental Musical Works"[12] the specific practice of the music of Kage's change is to use the money hexagram of the Book of Changes as the main method of the whole work, and skillfully use the Book of Changes The sixty-four hexagrams get the number to complete the score, adding the noise, pitch, duration, etc. of the work to the variable "The Music of Change". (Zhu,2018, p.20)

Figure. 2-1 Music of changes label
（*Own Source*）

As the primary technique of the whole work, the hexagrams are cleverly used to derive numbers from the sixty-four hexagrams of the Book of Changes to complete the score,

[10]Zhao Weiping. (2003). History of Pipa Musical Instruments on the Silk Road. Chinese Musicology (04), 34-48.doi:10.14113/j.cnki.cn11-1316/j.2003.04.006

[11]Jiang Xingmei & Zhang Xianqing. (2016). Public Culture and Ethnic Boundary:
The Ethnic Expression of Zhiju Yi People's Dress Competition Festival. Journal of Minzu University of China (Philosophy and Social Sciences Edition) (02), 66-71. doi:10.15970/j.cnki .1005-8575.2016.02.009.

[12] Zhu Muran. (2018). The Book of Changes and Composition—Also with John Cage'
s accidental music works（Master's thesis, Northwest University for Nationalities). https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD201901&filename=1018228036.nh

The noise, pitch, and duration of the work are added to the variable "The Joy of Change".

Guo Dafei of the Nanjing University of the Arts pointed out in "The Construction of Hearing—Study on Grammatical Translation of Sound in Space Design," "When sound is artistic, the various sound elements are separated from the chaotic order and reorganized according to certain rules. , Thus forming music, opera, and other art forms. The same is true for space art, which also requires a certain rule and order to integrate internal components."[13] (Guo，2014，p.35)

Leng Censong from the Composition Department of Wuhan Conservatory of Music believes that "the connection between electronic music and Chinese music traditions from the way of timbre synthesis.[14] From the day electronic music was born, its unique sound media and sound synthesis methods have determined it. It is bound to take a different development path from traditional "acoustic music." "It seems that electronic music is far away from the ancient oriental culture, but it also has many characteristics of oriental music in its music." (Leng，2007，p.45)

Jiang Chaoqian of Zhejiang Conservatory of Music published a paper in "Symphony-Xi'an Conservatory of Music."[15] (Jiang，2018，p.143)

In September 2018, "A Preliminary Study on the Application of Synesthesia Effect in the Analysis of New Media Sound":

Installation Art Works-Sound Installation Art Works "Sound·Beijing"As an example, His research "Sound•Beijing" is a large-scale converged media sound installation art that combines audio-visual.

Professor Zhang Xiaofu created this experimental work from the Central Conservatory of Music. It is a large-scale artwork that combines sound and sound.

It reproduces the voice of old Beijing's timeliness and cultural symbolic meaning.

In the paper " The potential value and demand of design methodology system for contemporary sound design "[16], Hao Yanxia,Zhang Jiahuan and Huang Jianfu of Guangxi University of Arts mentioned: The rapid development of current digital technology and Internet information, such as smart phones, tablet computers and other new things The emergence of future breakthroughs in technologies such as sensing, virtual reality, and artificial intelligence have greatly changed people's lifestyles, consumer needs and consumer concepts, brought about brand-new changes in the relationship between people and society, and ushered in a brand-new The age of sensory scenes.

Throughout the many research results in China, Europe and the United States, sound art is an important, innovative and breakthrough research, and it can be combined with a variety of different art types to achieve diversified and cross-border art research. The above research can effectively promote the protection, inheritance and dissemination of sound culture and intangible culture on the Silk Road. On this basis, this research has a sufficient theoretical foundation and clear application reference.

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[13]Guo Dafei. (2014) The construction of hearing[D]. Nanjing University of the Arts.

[14]Leng Cen Song. (2007)The relationship between electronic music and Chinese music tradition from the perspective of timbre synthesis. Huang Zhong (China. Journal of Wuhan Conservatory of Music) (04), 42-47. doi: 10.19706/j. cnki.cn42-1062/j.2007.04.006.

[15]Jiang Chaoqian. (2018). The application of synesthesia effect in the analysis of new media sound installation art works: Taking the sound installation art work "Sound · Beijing" as an example. Symphony (Journal of Xi'an Conservatory of Music) (03)),143-146.

[16]Hao Yanxia, Zhang Jiahuan & Huang Jianfu. (2021)The potential value and demand of design methodology system for contemporary sound design. Design (03), 67-69. doi:CNKI:SUN:SJTY.0.2021-03-021.

2.4 Case study discussion on the application of sound art on a global scale

2.4.1 Sea Organ

In terms of natural and human landscape applications, the "sea organ" designed by architect Nikola Bašić built in 2005 in Zada, Croatia, to redesign the coastline. Researchers visited Zadar's public artwork called "Passion of the Sea" in the summer of 2016.

Under the action of tides and wind, the sea waves continue to hit the pipe vibrating cavity system hidden under the steps by using the principle of hydroacoustics, producing a deep and distant sound, which is combined with the surrounding human voices.

According to the code of the five elements in China,
concrete the building structure is soil sound, a frame structure, the metal structure of pipe music inside is the sound of gold, the sound of water, the sound of waves hitting the shore, the sound of water, the sound of the wind, birds, and humans in different weather;

the five elements are peaceful. The seaside the three-layer stepped sea organ performs different repertoires every day, and the cheers of tourists sitting on the beach become one with it, creating a landscape that uses sound and interacts with nature.

According to this principle, China's XX explained its occurrence principle diagram,

This application of sound art integrates with the natural landscape, and at the same time, combines local tourism, the design of the human landscape is successful. On the Silk Road, the Devil City of Yadan in the Dunhuang area is a particular area with no other sounds except the desert, the wind, and the sound of tourists visiting some places. Its surface environment is similar to the recent wind returned from Mars. Suppose this research is use in sound media art creativity.

In that case, the final interactive media display can achieve in such a place where there is no other ecological environment except wind and sound. Can human power be used to activate this no man's land? In China's Silk Road history, these areas were once inhabited but later became uninhabited due to the harsh environment. It takes a hundred years to plant trees to improve the ecological environment of a piece of land.

But if modern sound media art methods are used to hold a soundscape museum night or sound museum art festival at certain times, can the land that has been silent for a thousand years re-distribute its charm? And these winds that are not available in other regions, if used as the content of the sound media library of this doctoral dissertation, can they become valuable research materials?

2.4.2 Berlin Art Festival, Germany

In February 2016, at the University of Berlin's Master of Sound Media Exhibition, a group of graduates did a dialogue between two robots on a virtual plane, a low-pitched male voice and a sexy female voice. The voices of the two robots are exaggerated, dramatic, and rich in space terminology.
I don't remember the content of the dialogue. The charm of that sound is still remembered in my brain.

In 2020, China and many places worldwide experienced a virus, and many children could not go to school. Therefore, various schools used DingDing Talk software for online video or audio teaching. If this is a battle, then these professors who are usually happily lecturing to students will face the students on the computer side. In the absence of any sound media art polish, the sound belongs to everyone's uniqueness.

It is a kind of performance art, a sort of experimental art, exposing oneself to the Internet, the researcher's voice is low and not very pleasant, even some strong voices.

After more than a month of observation and personal experience, professors with better voices are more able to attract students' attention. Or some teachers try to soften their voices as much as possible to use a steady sound decibel value, which brings another problem, which is easy to cause students to sleep. Researchers can't help but think of the sounds that can be heard in Germany that can touch you through the bones. If online teaching is an important teaching method in the future, then there will be many sound optimizations experimental software appearing to improve students' attention. And teaching quality.

2.4.3 Berlin Art Festival, Germany

2.4.3 Barcelona Multimedia Arts Festival

The multimedia art festival held in the Poble nou neighborhood of Barcelona city on Valentine's Day every 2.14, starting in 2016, lights up the entire area. On February 14, 2020, the author visited the community according to the Sound Media Art Festival and personally witnessed the combination and experimentation of sound media art and light and shadow art. In addition to exhibiting companies, the entire block involved in the light and shadow artworks of several famous universities, among which the Bau School of Art and Design works are the most impressive. The building's structure is slender, matched with the sound and smoke settings in the spectral changes, and visitors seem to travel to the future.
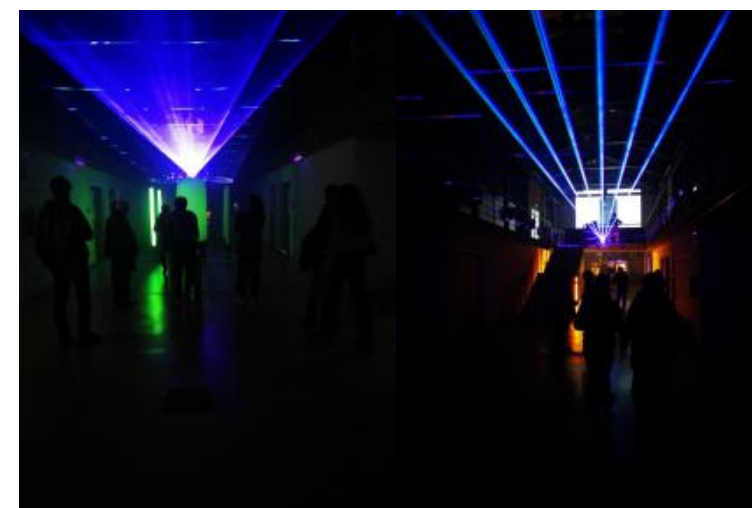

Figure. 2-2 The picture shows the works of the Bau century Art and Design University. Use laser light and sound changes to produce audio and light tone changes throughout the teaching building.(Photo by Author)

Attached video：
VID_20200214_182240.mp4
VID_20200214_191813.mp4

Figure. 2-3 The picture shows another work of the Multimedia Art Festival, which uses different sound curves to change, and the projector is projected on a piece of white screen. On each screen is a changing circle, the rhythm of the circle changes according to the speed of the sound and the image jitter changes.
(Photo by Author)

Attached video：
VID_20200214_195915.mp4
The Barcelona Multimedia Arts Festival conducts art exhibitions through multimedia art, sound media art, and light design art combined with the special attributes of a certain area in Barcelona. Poble Nou is a former industrial district with many abandoned factories and abandoned building wall structures. At the same time, it is also one of the landmarks of Barcelona City, where the Agbar Tower and various high-tech office buildings around.

The artist combines this new and old fusion with artistic expression, taking the lead of universities and bringing Barcelona in this way every year. The surrounding residents mobilized to participate in the activities. It is a way of combining art and humanities. For example, an animation performance is performed on an abandoned, ruined wall, accompanied by dramatic sound. People come out of tiny homes, take to the streets, communicate with each other, and watch the creative performances of the artists at the same time.

It is a healthy way of street art expression. In China, in a big city like Shanghai, researchers have lived in the same neighborhood for more than ten years. They don't know anyone except the doorman.

The neighbors next to him have changed; under the pressure of life and the appearance of electronic products, people tend to stay in their own homes.
After the 2020 virus, the Chinese government has advocated an open market economy in all neighborhoods.

For a long time, gathered people who have been at a home change to the streets in an artistic way. The night markets in Xi'an, Lanzhou, and Jiuquan on the Silk Road have rarely been interrupted in history.

It is why the researchers specifically put forward the sound recording of the markets.

2.4.4 Experimental sound art

Shanghai Normal University Xu Zhibo and his research team published "Sound in the New Media Art of Music" in the Fudan Journal in June 2018, analyzed the application of sound as a medium in interactive art design works.

The structure of works of art can extend by sound design and music. The relationship between sound and the medium is the same as the relationship between hearing and human perception. It is an organic whole. It also analyzes the "Artistic Mirror Mind" performance of the Shanghai Conservatory of Music.

Artistic conception using multiple forms.
That combines live theater performances, instrumental music. performances, multi-channel interactive electronic sounds, and new media to carry out "pan-auditory" narratives. The impromptu performance of the performers and their "mirror" engage in a dialogue of sound,

form, and shadow in a multi-dimensional space. Simultaneously, through the real-time interaction of four-channel surround sound and images, the dissociation, conflict, transformation, and sublimation of the image are virtualized[17] （*"Artis -tic Mirror Mind",2016*）

Zi fei yu, know the joy of fish?
You are not me, know that I don't see the joy of fish?
If you stop, you go today; if you go, quit today.
You are not me, not him, me, him, and you are not... (Performers read white partly selected from "Zhuangzi"，n.d.):

  31 Retrieved from https://v.qq.com/x/page/y0179dqyoru.html

Mirror mind, Artistic conception, dedicated to the technical development and research of electronic music and new media technology, music, and vision, contemporary sound art, and installations; exploration and practice in music creation and music stage innovation experiments; advocating innovative ideas based on traditional Chinese culture

And the cross-media and cross-field integration in art and technology.

The author attempts to express the mutual mapping between the "inside" and "outside" of things and explore human nature's deep state through the above methods.

Figure. 2-4 Mirror mind stage play image 1
(Photo by Author)

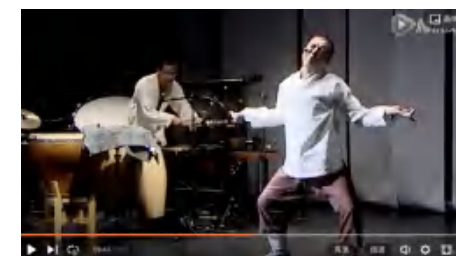*Figure. 2-5 Mirror mind stage play image 2*
(Photo by Author)

Figure. 2-6 Mirror mind stage play image 3
(Photo by Author)

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[17]Retrieved from: https://v.qq.com/x/page/y0179dqyoru.html

a) 2017 Shanghai Minsheng Art Museum Sound Invitational Exhibition: "Transparent Voice" exhibited at Shanghai Minsheng Museum of Modern Art in April 2017 is the "French Cultural Spring" opening in 2017. The curator James Giroudon convened 45 works from 26 artists worldwide to perform a misplaced ensemble between light and shadow, light and darkness, sound field and field of view, artificial and technological.

These works use various new media methods such as musical sculptures, installations, electronic sound, performances, videos, recordings, and programming to integrate new technology and art.

In the exhibition, the audience can experience the "resonance of feelings", passing through various audiovisual senses; people feel the purity and purity as they approach their hearts.

The researcher participated in the Aigua International Forum of the University

of Barcelona in 2015 and published the work "The Tao of Water".

The pictures of his works are from the paintings of Xia Gui and Ma Yuan in the Song Dynasty of China.

And the paintings of Hokusai in Japan; all three painted "water" The negative name, accompanied by the "High Mountain and Flowing Water" of the "Twelve Women's Band" and Guzheng music, adds to the ups and downs of the work.

b) Shanghai Oil Tank Art Center Exhibition
In April 2019, Shanghai "Fengyuzhu" Oil Tank Art Night, researchers participated in the experience of the universe of water particles in the oil tank, Universe of Water Particles in the Tank.

The world-renowned art group team-Lab's first solo exhibition in Shanghai, "teamLab": The World of Water Particles in Oil Tanks" [1]opened at the Oil Tank Art Center. The exhibition takes the same name, "Water Particle World in Oil Tank" as the mainline.

Figure. 2-7. The image shows the researchers participating in the world of water particles
(Photo by others)

Figure. 2-8. The image shows the world of water particles in an oil tank, another work Flower sea,
(Photo by Author)

It uses the profound, poetic, and highly variable expression of "water" to transform the internal space of Tank No. 5 in Oil Tank Art Center into large-scale immersive interactive art. works. The viewer and space in it merge and influence each other, suggesting the relationship between man and the world.

The sea of flowers throughout the year is simultaneously affected by people and currents, constantly blooming or withering. The viewers walking in it will not clearly distinguish the specific boundaries between the works and the

works. They can only explore and enjoy them physically and intuitively. This media art event, designed and produced by an international designer and experienced for the first time in China, has no borders on the road of artistic exploration.

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[1]Retrieved from： https://www.sohu.com/a/303501835_522891

2.4.5 The application of sound in museums

In the traditional sense, museums are places that need to be visited, understand a piece of history, or learn to explore cultural relics under the characteristics of a particular era. Nowadays, Chinese museums are more like public art spaces.

In the design of museums, the theme of sound is rare.

It is widely use in museums. For example, the Enamel Hall on the 37th floor of the Shanghai Tower is the exhibition hall of Chinese collector Ma Weidu's collection.

Can hear different background sounds from different angles in front of the exhibits, it is related to the placement of loudspeakers in the early stage of the museum design.

Also, sensor devices are installed. There will be light and sound interpretation when passing by; this is of great signif

icance for preserving museum cultural relics, such as paintings and calligraphy works cannot be exposed to light for a long time. The calligraphy and painting exhibition hall on the second floor of the Shanghai Museum is also a sound and light control sensor lamp.

In 2017, the researchers visited the musical instrument-themed cultural relics invitation exhibition held by the Caixa Bank in downtown Barcelona. Many of the collections on display were from the Louvre in France; Classical musical instrument was all fine-quality cultural relics.

Figure. 2-9. Classical musical instrument"se"
(Photo by Author)

Figure. 2-10. Classical musical instrument "Laud"
(Photo by Author)

Because viewers can only watch and cannot try to play, in each of the different musical instrument areas, when people walk by, there will be the sound of the displayed instrument playing directly above the head.

It is not achieved in some Chinese museums. It is not the children in the exhibition that have an APP dedicated to editing the sound of a particular musical instrument when they go to the exclusive area of the exhibition. They can choose between the human voice and environmental sound.

In early education, children will be taught about voice recognition.

In the early stage of the sound museum design, it is imperative to store many sound clips. The Silk Road sound media art of this study focuses on collecting various sounds along the line of thought, analyzing and summarizing them, and uploading

them to the cloud after sound processing. Gradually create a sound media library in the accumulation of sound.

The Bird Cloud Museum, built by the Ter Town Museum in Catalonia, Spain, for the sounds of birds, is a perfect example of the application of sound media art to establish a soundscape museum; the link is as follows. (https://coneixeliu.museudelter.cat/ocells.php?from=timeline&isappin-stalled=0.2019)

Table. 2-2 Sound APP design
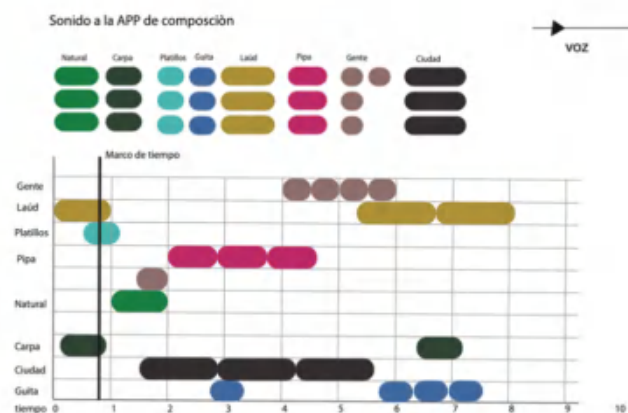
La Caixa sound design APP, Researcher simulation

Figure. 2-11 Screenshot of Birdsong page 1
(*Own source*)

As long as the mouse moves to the bird's position, the bird's call will appear in the interface.

The researchers are inspiring by the "Bird Sound Map" and adopted similar design formats and sound editing methods in the later chapter VII of the research and practice "Silk Road Sound Map Design". Edit the collected sound into a short duration for easy browsing and listening online.

During the five-year sound collection process, the essential collection area was the Dunhuang Mogao Grottoes in northwestern China.

Here is the artistic treasure of the world's material and intangible cultural heritage. How to combine and use the collected sound with the sound map was inspired by the study of Dunhuang Museum in China:

In the APP designed by Dunhuang Museum of China[Dunhuang Museum official APP on line]the murals of Dunhuang Museum use virtual reality technology to reproduce the flourishing Silk Road. You can scan through.
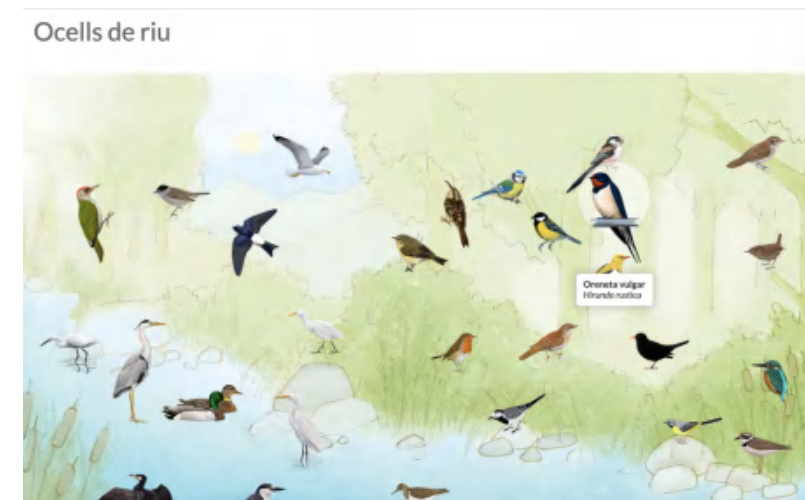
WeChat and log in. The first page is New Year's Wishes and Date.

After entering the Dunhuang animation page, you can choose to watch the mural story animation and choose to dub the story. Each set of murals has several characters to choose. After dubbing, you can generate a small animation file with your dubbing.

It shows that the study of sound media art on the Silk Road can be used in museum sound exhibitions, museum animation dubbing production, and some interactive multimedia exhibitions.

After being locked up at home for classes and visiting museums in the cloud in 2020, sound has become more important. In addition to "Himalayan," the most popular audiobooks in China are accompanying human life with sound multimedia art. Primarily when visualizing various needs to "watch," the role of sound becomes essential. Researchers use this chapter to study the sound museum and make innovative research and design on the "sound museum" in the later practical part.

Figure. 2-12. Screenshot of "Browse Dunhuang Museum on the Cloud"
（*Own source*）

Figure. 2-13 Screenshot of "Browse Dunhuang Museum on the Cloud"Antimation Dubbing production part
（*Own source*）

2.5 Discuss

The research and application of sound in the world, art creation, soundscape, sound media art, sound map, sound protection, and other aspects have been applied and involved. Still, the application of sound media art on the Silk Road was proposed for the first time in the scope of practice.

The soundscape is studied and recorded, and the intangible cultural heritage on the Silk Road is protected by sound recording.

It is an extensive quantitative study. In the literature found by the researchers, there are various degrees of research on the ecological landscape research, regional sound landscape comparison, sound map production, sound creation, etc., of a particular city and a specific area. It has never been possible to record and study a diverse place.

The researchers' research hypothesis for the contribution to the education of Chinese colleges and universities cannot be ignored.
Whether the sound design of museums will become a customized service in the future, the voice interpreters on the Silk Road can choose to change the voice service.

Whether the expected research effect and quantitative data accumulation of this doctoral dissertation achieved at the end of the research is unknown. But one thing is sure. The data collection, data analysis, and assembly of sound media library made in this research have used as a research case in the "Digital Sound Effect" course of Shanghai Arts & Design Academy. The sound collected by the researcher has been shared on the Internet as research material for later academic research and student learning.

2.6 Result

In summary, Chapter II identifies and reviews the conceptual/theoretical dimensions and the methodological dimension of the literature and uncovers research questions or hypotheses that would be worth investigating in later chapters.

Sound media art is a cross-border fusion of artistic expression methods, combined with lighting art, stage art, and digital multimedia art. There are various expression methods, but there is no way to record the walking sound around the sound of the Silk Road and retain it for analysis. And innovation.

According to the literature, to find the most suitable systematic methodology and practice for this research, the main application of the ethnographic research method is to conduct research and analysis on the soundscape of the Silk Road. Find out the primary research focus areas of the Silk Road in China, which voices should be valued and protected today. Due to the wide range of belts and ethnic diversity, the complex and diverse voice types, the researchers believe that only a certain number of voices can be accumulated to arrive at this doctoral dissertation's final three research goals. The methodology is clarifying in Chapter III.

I carried out practical research from Chapter IV to Chapter VI, but because the focus of this article is on the diversity of sound collection and recording, the establishment of a diversified sound media library, not just the source of sound noise in a single location, and the depth of the sound. Therefore, after adopting the recording method of walking sound, many sound data to be sorted in the mid-term research stage.

As an artist, the research on sound takes an artistic perspective, from the perspective of the sound curve, the sound change, sound and image combination, etc.

Rather than analyzing the source of sound propagation and changes in propagation from the perspective of physics. Of course, you need to understand the physical structure and direction of the sound. In the seventh chapter, the research on the theoretical connection, practical innovation, including the design of the Silk Road sound label, the sound museum design, and the sound sculpture design, are all focused on the protection of the Silk Road soundscape, reproduction, and application of the sound media artistic innovation and creation.

After finding the pioneers in the study of sound art, soundscape, and sound maps, the researchers analyzed from the research hypothesis that the time and space of the Silk Road span a relatively wide range. There are many ethnic minority communities along the route, and the traditional culture and folk culture are still preserved. The Silk Road Historical and cultural monuments are being changed by the natural ecological environment and many factors in human industrialization. Along the line from Xi'an to Urumqi is Han, and ethnic minorities are fused and inhabited. There are many historical and cultural monuments and religious cultures, cultural fusion markets, traditional craftsmen, and local language and culture. Across the plains, mountains, deserts, lakes, plateaus, and other regions, the natural ecological landscape is rich and colorful. The soundscape on the Silk Road has highly high academic research value. Whether it is possible to apply multimedia art methods, after the researchers conduct on-the-spot sound collection and analysis, we get the demonstration in the research hypothesis at the beginning of this research.

Chapter III
Methodology

3.1 Introduction

3.2 General Methodology
     3.2.1 Participant observation
     3.2.2 Focus groups
     3.2.3 Field research

3.3 Specific Method
     3.3.1 First Specific Method：Walking sound collection
     3.3.2 Second Specific Method：Unique sound collection
     3.3.3 Third Specific Method：Questionnaire

3.4 Research plan and design practice

3.5 Equipment Used

3.6Application to case studies (I): Xi'an

3.7 Data analysis
     3.7.1 Laboratory Listening Tests
     3.7.2 Visual analysis of acoustic wave atlas

3.8 Result

3.1 Introduction

This Doctoral Thesis has been registered in the Doctoral Program of "La Realitat Assetjada" of the Faculty of Fine Arts of the University of Barcelona. Therefore, it is developed through an artistic methodology within Sound Art, and more specifically, in the subgroup of the soundscape. The thesis has developed through a theoretical-practical method. The starting point is related to a series of personal artistic experiences and is complemented with research on the field of study of sound art that has varied origins, from the anthropology and ethnology of sound space, sound perception, and psychoacoustics and theories of sound space from architectural acoustics. The thesis establishes a dialogue between the most critical theoretical studies in the international soundscape.
 As well as sound art studies developed in different universities in China and a practical part about the design of an exhibition environment using Sound Maps, a part intervenes technological and artistic creation of the three-dimensional elements of sound exposure.

The thesis has developed established in the doctoral program of the University of Barcelona.In the Shanghai Arts & Design Academy (SADA), where I am a professor of design technology and of which I have developed part of research in SADA workshops and laboratories. On the other hand, I have developed fieldwork using methodologies typical of ethnological studies, through recordings and field charts established by R. Murray Shafer at Simon Fraser University in Canada and in the Convention for the Safeguarding of the Intangible Cultural Heritage of the UNESCO.

The proposed study has an interdisciplinary nature in which theories, tools, and artistic procedures typical of Fine Arts are mix and influences from various areas that combine art, science, and technology. However, it should be noted that this thesis was framed within the humanities. Although can make relationships and links with other areas, such as ethnographic research, should analyze the work with a clear perspective of design and sound art techniques.

The conceptual scheme of the thesis includes a bibliographic compilation on the subject of study and the contribution of an artistic practice that is manifested in sound cartography.

As an artistic. The new parameters and paradigms of the emergence of new technologies have been established, a very important aspect to take into account in the social transformations from the technological changes in the areas of study in China. The media shape societies and in China these changes have been very abrupt in recent years and social transformation is evident through new sounds that denote the transformation of the areas where the Silk Road passes, which although with a great Historical and traditional value has not been at the margin of the technologies that have been developed as an engine of change in Chinese society.

This irruption of technological means has transformed in a few years the sound ecology of the geographical environment studied and perhaps this characteristic is what is reflected in the recordings made in the study.

For the study of sound environments, methodological aspects of the acoustics of the space have also been taken into account, aspects that can be measured in the physics of sound and perceptual parameters, it is for this purpose that the sounds have been analyzed using spectrograms that give a measurable value, in a complex phenomenon such as listening in the soundscape.

The World Soundscape Project (WSP) is an international research project funded by Canadian composer R. Murray Schafer in the late 1960s at Simon Fraser University. The project initiated the modern study of acoustic ecology.

Its ultimate goal is to find solutions for an ecologically balanced soundscape where the relationship between the human community and its sonic environment is in harmony."The practical manifestations of this goal include education about soundscape and noise pollution and the recording and cataloging of international soundscapes with a focus on the preservation of sound marks and dying sounds and sound environments.

Acoustics is an element that integrates space and time, space through its dimension, form, and materials, and time that is related to the movement of the viewer, or researcher in space, since we can establish as a basic principle that all sound studies do not They are made from a fixed point of view in time if not concerning movement, the observer moves in space and is often also the sound source that moves in space. It is for this reason that a lot of importance has been given to sound walks or walks.

The hybridization of languages in sound art is one of the most important elements from the design perspective. Still, it is equally essential in the relationships established in fieldwork, where aspects of the identity of the place and its multiple convergence relationships are based in the environment, both natural and found in Chinese society, which is undoubtedly highly complex.

The methodology of the experimental practice is established in the fieldwork of direct recording of the events.

3.2 General Methodology

In ancient times ethnography was practiced, when observations and descriptions of peoples were transmitted, especially those considered "barbarians" or exotic, by the centers of power, generally powerful empires that were considered the center of the world. The same happened with colonialist Europe, whose expansion began in the fifteenth century and continued until the nineteenth, exploring the entire planet and taking note of the found populations.

Formally, ethnography begins together with social anthropology, as heir to this European interest in the exotic and far-eastern world of the East (particularly) or the surviving American aboriginal cultures. Its father and founder are the same one of social anthropology, Bronislaw Malinowski. However, it would be with the shift within anthropology.

Allowing a more pluralistic vision of societies and the development of other social sciences such as linguistics, psychology, and sociology would become a scientific discipline. A necessary debate regarding its nature could take place.
（Reference: https://conósito.de/etnografia/#ixzz6sLldKhUg.2021）

Ethnographic research is a qualitative method in which researchers can observe or interact with research participants in their real-life environment. Ethnography is welcomed by anthropology and is widely used in the field of social sciences.

3.2.1 Participant observation

The researcher begins his work with participant observation, which implies that he travels, for a time, to the place of the events that he wants to investigate to obtain an adequate understanding of the context (as opposed to laboratory work, where decontextualized data or in controlled contexts analyzed)

（Reference: https://conósito.de/etnografia/#ixzz6sLldKhUg.2021）

The researchers consulted the research materials on "ethnography" of the University of Barcelona,

Because of the particularity of the Silk Road region, this is a period of research that spans historical periods and crosses the integration of regions, nations, and cultures. To establish a sound media database, provide powerful academic materials for sound art design education.

And protect the intangible cultural heritage on the Silk Road, show sound maps, and display research projects to the public in the form of exhibitions or sound museums; this research needs to be determined first. Location.

First, observe the important areas of the Silk Road regional research. Which areas are worthy of research and field data measurement? So, the researchers throw out the question:

Decide on a research topic. In this first step,

list the possible research topics and then select the one that is my favorite, based on the four essential criteria listed in the table:

1.Intrinsic interest to me.

List three research topics that might interest

Topic A: ___The Silk Road, _____

Topic B: ____Sound media art, sound landscape, sound archive, sound map _____

Topic C: ____ Which areas on the Silk Road need to be studied and recorded by

sound data, such as natural, urban, industrial, historical, etc. _____

1.Studied in previous courses

In the literature review of the sound media art research, analyze which sounds are worth investigating and analyzing and summarizing

1.Useful for future research; Document， Education; For the Sound Media Art Exhibition

Sound Media Art Conclusion Application

d) Data accessibility

The research objectives and research hypotheses mentioned in the first chapter is in a conclusion

In summary, after a,b,c,d observations.

Researchers collect and sort documents and materials on the Silk Road to find key sound in related academic research fields, and at the same time find research methods in the field of sound media art research.

After the interview begins, the content is guided by the main themes of the dialogue, which are directly related to three research questions:

Title, divided into three goals: theory, education and social influence

Sound media art is a relatively abstract research field. It uses theories of art anthropology, psychology, and art aesthetics as research support to study and analyze historical sounds on the Silk Road.

First observe what voices are on the Silk Road, look up information through literature,

Observation, discussion, and telephone interviews with research leaders in some related fields, to find out the types of sounds that need to be studied in this doctoral dissertation, and to discuss the sound media art on the Silk Road according to different types of sound sources. According to the sound source, it is divided into the sound in many different sources:

a) Sound source of natural environment along the Silk Road

Wind noise can be divided into Gobi wind, lake wind, wind before and after a heavy rain, and seasonal wind, etc.

Sound of water, lake water, seaside water, rain water, fountain water, pool water, stream water, etc.

Thunder and lightning, lightning with different seasons and geology
The sound of snow, the sound of snow, the sound of snow melting
Birdsong can be divided into birds in the mountains, birds in the forest, birds by the water, and birdsong in the city, etc.

The sound of insects, the sound of insects on the tree and the grass, the sound of cicadas, most of the summer insects
Animal sounds, animals close to human habitation are like the sound of chickens, ducks and dogs, animals far away from humans are like eagles in the sky

b) The Silk Road Cultural Symbol Sound source
Sound sources in urban life: cultural sounds, market sounds, electronic equipment sounds, industrial sounds, etc.
The sound of the world cultural heritage on the Silk Road: the sound of religious rituals, singing and dancing music, the sound of bells, etc.
The unique sound of historical relics on the Silk Road

c) Sound source under unique social environment
Intangible cultural heritage sounds: handicrafts, talks, tour guides, festival sounds, oral sounds, etc.

After the primary analysis, the researchers found that in the process of sound research, ˙due to the unique properties of the sound source, these sounds cannot be used after preliminary collection. The collected sounds must be separated and cut in the laboratory to be finalized. The researchers initially hypothesized to build a media library of sound data.

As a university teacher, the researcher proposes in the research hypothesis that the sound files, sound media library and sound design established through sound collection can be applied to teaching; it is necessary to screen the data of the sound re-

search site, and simultaneously perform the classification and classification of the original sound data. After editing, the sound media library is established to complete the original idea of establishing a sound map of the Silk Road. In the process of research, there must be sound data collection, picture data recording, interviews, and access to sound proprietary software editing; after a large amount of data is obtained, artistic creation can be carried out.

According to these possible sound sources, find the overview along the Silk Road:
Due to the diversity of sounds on the Silk Road, the range of sound collection should also be taken where there are multiple sounds in order to achieve the accumulation of a certain amount of sound collection in this research.

Table 3-1. List the possible sounds on the Silk Road
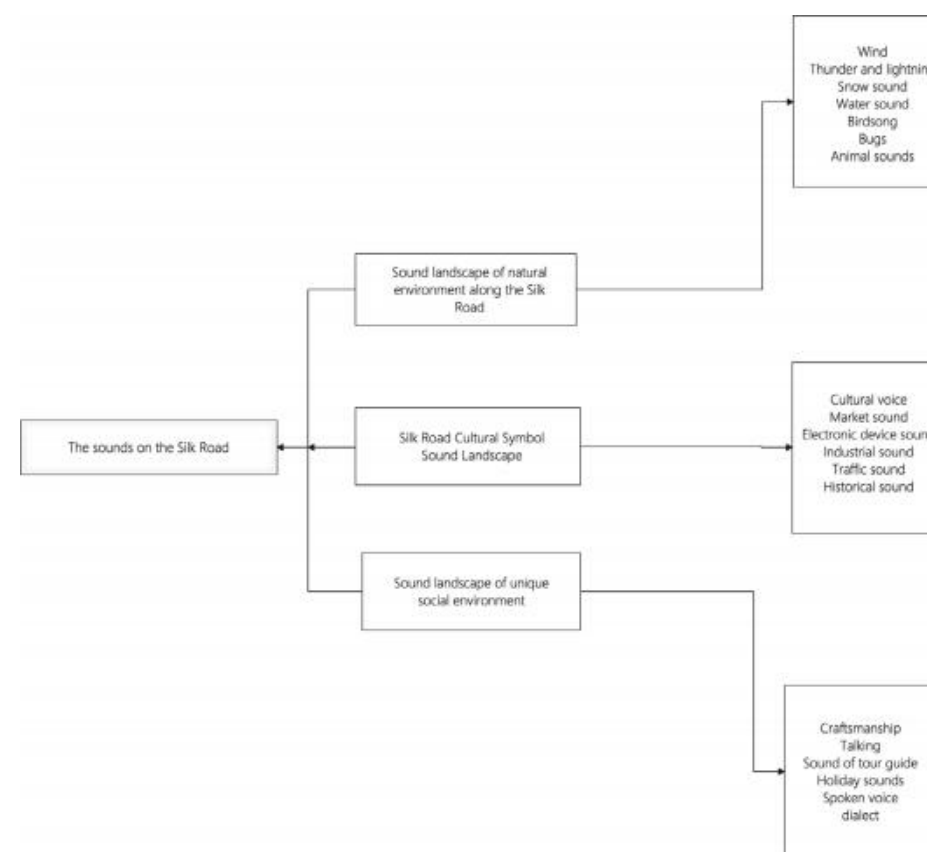
Briefly on the list of possible sounds on the Silk Road

It starts from the Silk Road

More than 2100 years ago, Zhang Qian made two missions to the Western Regions to open up a land-based "Silk Road"[1]that traverses East and West and connects Europe and Asia. Since the Qin and Han Dynasties more than 2,000 years ago, the Maritime Silk Road connecting my country and Eurasian countries has gradually emerged. The land and maritime Silk Roads together constituted a significant channel for communication, trade, and cultural exchanges between my country and Eurasian countries in ancient times. They promoted the exchanges of civilizations and friendly exchanges between the East and the West. In the new historical period, the construction of a grand economic corridor along the land and sea "Ancient Silk Road"[2]will bring common development opportunities to China and countries and regions along the route and expand a broader space for development.

Just like the name of the "Silk Road", on this long road of more than 7,000 kilometers, silk, like the porcelain of the same origin in China, became a symbol of the prosperity and civilization of East Asia at that time.

> *The Silk Road is an important ancient civilization road in our country. From ancient times to the present, it has indispensable meaning and value. It is not only a road but also a broad road of mutual benefit. It has written an excellent chapter belonging to the Chinese nation. The opening of the Silk Road can be said to be of world-famous significance for my country and the whole world. It not only maintains the friendship between various ethnic groups but also strengthens the integration and integration between countries, making the Silk Road a Chinese nation's synonym[3]*（*Zhang*，*2020*，*p.1*)

Some natural landscapes, urban landscapes, and cultural and sound symbols on the Silk Road have a particular historical significance and similarities and inheritance. Researchers have found that in some historically important blocks and areas inhabited by ethnic minorities in history, there are characteristic local sounds in the soundscape and the sounds of insects, birds, and unique geographical features in the natural ecological landscape. Both are of great research value.

Figure.3-1 Research from The Silk Road a new history[4] (Hansen ,2012, p.6 p.7)
(Own Source from the Book)

The picture shows an overview of the main communication lines of the ancient Chinese Eurasian continent.

Through observation, comparison and analysis, it is concluded that landscape research on the Silk Road should start from the following three aspects:
Sound landscape of natural environment, cultural symbol sound landscape, sound landscape of unique social environment.

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[1]Land Silk Road and Maritime Silk Road
[2]Retrieved from:https://baike.baidu.com/
[3]Zhang Qian. (2020). Tuoling Ancient Road Silk Road-Discussion on "Music Culture of the Silk Road". Northern Music (24), 1-3. doi: CNKI:SUN:BYYY.0.2020-24-011.

[4]Hansen, V. (2012). The Silk Road: A New History.

3.2.2 Focus groups

Establish focus groups. From the previous observations, it is concluded that the critical research areas of the Silk Road are locked from Xi'an to Urumqi, so which points in these areas need to investigate in detail. Under unknown circumstances, the researchers formed 10-person research Including:
Expert in geology and geography research: Mr. Liao
Expert in public art space landscape design: Mr. Huang
Art education expert from the Shanghai Arts & Design Academy: Mr. Wang
Expert of Dunhuang Academy: Ms. Liu
Curator of Shanghai West Bund: Ms. Chen
And five students, including four students who have studied and exchanged at the University of Barcelona for six months.

According to the map of the new history of the Silk Road, analyze and compare the names and status, propose ten research areas on the Silk Road to the research team.
Case 1 Shaanxi Province Xi'an, Tongchuan
Case 2 Luoyang, Henan Province, White Horse Temple Longmen Grottoes
Case 3 Qinghai Province Xining, Qinghai Lake Ancient City of Danger Riyue Mountain
Case 4 Gansu Province Jiuquan City Mogao Grottoes Yulin Grottoes Yadan Devil City Yumenguan Lanzhou
]Case 5 Wuxi, Jiangsu Province, Lingshan Giant Buddha, Suzhou
Case 6 Hubei Province Dayu Bay Xiaozhu Bay Liangzihu Wuhan Hubei Provincial Museum
Case 7 Urumqi, Xinjiang Province
Case 8 Jingdezhen, Jiangxi Province, China Porcelain Capital Taoxichuan Sanbao Village
Case 9 Yunnan Province Chuxiong Wenshan Dali
Case 10 Zhejiang Hangzhou Thousand Island Lake, Wenzhou

The researchers asked the focus group questions, asked their assessments and answers, and they wrote anonymously on the sticker or through voting, following the previous subsection 3.2.1, the research on the natural environment sound landscape, cultural symbol sound landscape, and soundscape in the unique social environment on the Silk Road, field surveys need to be conducted on specific research locations on the Silk Road. And it is decided by voting.

In the end, a total of six key research areas and two secondary research areas has obtained as follows:

Application to case studies (I): Shaanxi Province. The starting point of the Silk Road has defined by Xi'an in Shaanxi Province. The key research sites are the Muslim Street Market, Drum Tower Street Scene, Bell Tower Market, Big Wild Goose Pagoda North Square, Small Wild Goose Pagoda, and Xi'an Museum in the ancient city of Xi'an. , Focusing on applying quantitative research methods, using 4 to 5 days to conduct a comprehensive soundscape collection of the city. It highlights the modern soundscape of "Xi'an", an ancient city with a history of up to five thousand years, during industrialization and changes in the needs of urban development, alternating with historical sounds. Following the rapid advances in the industry, technology, transportation, and science, social life has undergone a fundamental change. The fragmented and urbanized city is full of traffic noises and contrasts with the quiet environment of the small wild goose pagoda in the ancient city. Therefore, as the first case area of this study.

Application to case studies (II): HeNan Province The starting point of the Silk Road in the Eastern Han Dynasty, the Heluo culture and Heluo civilization centered on Luoyang, is the core and source of the Chinese national culture and constitute an essential part of the Chinese civilization.

The main reason for choosing this area is that Luoyang Longmen Grottoes is a world cultural heritage. After experiencing the baptism of history, the current

soundscape of Longmen Grottoes has been analyzed, and at the same time, the existing multimedia navigation methods of the caves are investigated.

Application to case studies (III): Gansu Province. The Dunhuang Mogao Grottoes as the world cultural heritage area, the key place, and the golden section of the ancient Silk Road. There are eight sound collection locations in this area: Lanzhou City, Jiuquan City, Dunhuang Mogao Grottoes, Yulin Grottoes, Yadan Devil City, Xiaofangpan City Ruins, Luoyang City, Mingsha Mountain.
Centering around Dunhuang Mogao Grottoes as the core, the study focuses on the soundscape of the historical and cultural heritage of the Silk Road. It is the core research area for establishing the "Silk Road Soundscape Map" among the research goals.

Application to case studies (IV): Qinghai Province is a must pass through the ancient "Silk Road" South Road and the "Tango Ancient Road." There are three sound collection locations, Riyue Mountain, Qinghai Lake, and Ta'er Temple.

Application to case studies (V): Xinjiang Province connects the main routes between China and the West. It is also the "mulberry paper" factory where Stein discovered important historical documents during his research in China. It passed through Urumqi to the Xinjiang Hetian Moyu mulberry paper factory. There is only one research site in this area, where Professor Josep Cerda from the University of Barcelona led a research team to collect sound. Due to the particularity of this region
In the severity of the new coronavirus in 2020, only one location was included in this study.

Application to case studies (VI): Yunnan Province belongs to Southwest China, an important area of the Ancient Tea Horse Road in the Silk Road history. At the same time, it is a key area for the integration of ethnic minorities in southwestern China, where intangible cultural heritage Chinese embroidery and ethnic minority festivals gather. Because of its geographical environment, there are many mountains and traditional villages. Although the economic development is relatively slow, the quiet life is in sharp contrast with the city. The modern industry is underdeveloped. Handicrafts such as embroidery and the intangible cultural heritage of traditional festivals are relatively well preserving. Therefore, the area of sound collection is regards as a problematic area for research. The researchers visited three different prefectures in Yunnan Province. They collected eight locations, including Yongren County and Zhizuo Village in Chuxiong Prefecture, Puzhehei and Guangnan counties in Wenshan Prefecture, and Erhai and Shuang County in Dali Bai Autonomous Prefecture. Corridor, Xizhou Ancient Town, Dali Ancient Town.

There are mainly two secondary research areas:
Jingdezhen, Jiangxi Province, as the capital of porcelain, was an important production area for porcelain spread on the Silk Road in Chinese history.
Hubei Provincie, Museum, Wuhan City, Hubei Province, Dayuwan Town, Xiaozhu Town, and Liangzi Lake area

3.2.3 Field research

It can be used in ethnographic research diversification research

The reorganization of the content (written, visual, sound) observed in the document; the document can be used as support and allow its review, correction, and transmission.

Because of the particularity of the sound, the researcher must make the following records during the investigation□

Research archive date

Sound collection routes in some important areas

Introduction about the sound collection location

Original Sound

Sound description

Sound tags

Sound research location pictures

Another auxiliary such as video recording

Oral interview

Laboratory sound data processing

Discuss and analyze survey results

The data has collected in a naturalistic way□without any modification.

（Reference：http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0121-75502011000200011

https://laboratoriodemusicalibre.wordpress.com/2016/11/03/composicion-con-paisajes-sonoros-convergencia-entre-la-etnografia-y-la-musica-acusmatica-por-john-levack-drever/ 2021）

3.3 Specific Method

There are many kinds of sounds on the Silk Road, so that more methods may apply in the sound collection process

3.3.1 First Specific Method：Walking sound collection

Most sound researchers will carry their recording pens with them, and they will also use mobile phones as one of the sound collection tools when there are no conditions. The so-called walking sound is similar to the art of walking. The visitor does not know the way ahead and the sound. Just go ahead and record it. It is often use when a new sound collection point is not familiar with the topography.

Compared with the fixed-point test, the recorded sound is generally longer, and it may take 30 to 45 minutes. To collect all the sound environment in the whole process, it takes more effort in the post-processing to distinguish which is the effective sound.

However, this sound collection method collects the sound environment of the collection place more comprehensively. It is very suitable for relatively noisy markets. In the silk Road history, many markets have started down from the Han and Tang Dynasties to the present day, and the visual environment will have missed sounds in the complex surroundings. The sound of walking will not even miss the sound of a bird flying by. The recording of sound media art is significant.

3.3.2 Second Specific Method：Unique sound collection

For interviews and oral history. Many complete documents are not as good as "locals" familiar with the environment, such as local taxis, elders, or craftsmen, in understanding some of the unique voices of the surveyed places.

In Dali Bai Autonomous Prefecture, the visitors passed by the Bai people's houses several times in a taxi after studying the documents and materials on the characteristics of the surname patterns of the buildings of the Bai people's dwellings in advance, and these enthusiastic drivers explained the designs and surnames of these houses very quickly Contact and source. The sound collection, in this case, is a unique sound collection.

Invite others to do this interview. I did not make an appointment in advance but achieved the purpose of the interview. Record the stories and voices of others.

3.3.3 Third Specific Method：Questionnaire

To verify the reliability of the data in the ethnographic research method, the researcher designed a questionnaire survey，for the sound affection in ethnic minority areas: (58 copies of data and 46 copies of valid data has distributed)

Research Questionnaire about sound art
September 2020

This survey is about the sounds in your daily life, especially the responses of ethnic minorities to hearing-related voices. Statistics and analysis of each person's answers will never publish personal answers publicly. Please fill in carefully to cooperate with our work. Thank you for your cooperation.

1. What is your age

Under 18
18-25

26-30
31-40
41-50
51-60
Above 60

2. Gender
male
Female

3. Occupation
student

teacher

Institution (Company)

individual

Freelancers

Art practitioner

Tourism practitioner

Unemployed

other

4. Do you know about sound?

I don't understand at all

Generally understood, I usually listen to songs

Know better, like actors and celebrities with good voices, often listen to songs.

Very knowledgeable and familiar with various voice actors

5. What type of music do you usually listen?

Popular/POP

Rock

Hip Hop/Rap

Jazz

Blues/Blues

Classical/Classical

Country Music/Folk&Country

Folk music/folk song

World Music/World

other

6. What is your most impressive voice (multiple choice)?

Noise (piercing sound, disgusting sound)

The sound of receiving the message

Voice of consumption WeChat/Alipay payment voice

Other

7. What is your most disgusting voice (multiple choice)?

Noise (piercing sound, disgusting sound)

The sound of receiving messages

Voice of payment during consumption (WeChat/Alipay)

Other

8. What trouble does the most annoying voice bring to you (multiple choice)?

I don't care. Nothing reflects

I don't know what to do

Restless and very angry

Feel sick

Difficult to call, watch TV, listen to the radio

Bring trouble to work, study, and reading

Hinder speech

Disturb sleep

other

9. What ethnicity/dialect[5] can be heard around you (choose multiple)?

Hebei Province Jiangxi Province Gansu Province

Shanxi Province Shandong Province Qinghai Province

Liaoning Province Henan Province Taiwan Province

Jilin Province Hubei Province Overseas

Heilong Province Hainan Province Beijing

Shanghai Chongqing City Tianjin City

Jiangsu Province Sichuan Province Guangxi Zhuang Autonomous Region

Zhejiang Province, Guizhou Province, Xinjiang Uygur Autonomous Region

Anhui Province Yunnan Province Inner Mongolia Autonomous Region

Fujian Province Shaanxi Province Tibet Autonomous Region

Hunan Province Guangdong Province Ningxia Hui Autonomous Region

10. Have you come into contact with products related to ethnic/dialect sounds (choose multiple choose)?

Sound show

APP

QR code

other

---

[5] Chinese local language

11. In your daily life, which intangible cultural heritage sounds can you hear (multiple choices)?

The sound of embroidery

The sound of opera

The sound of silver

The sound of woodcarving

The sound of playing mahjong

The sound of tea making

The sound of painting and calligraphy

The sound of making pottery

The sound of making food

other

APP in Mobil

Figure.3-2 Questionnaire on the Mobile APP
(Own Source)

Result of the Questionnaire

Data analysis

The following table is a summary of the questionnaire about ethnic minority voices (46 valid surveys)

Table 3-2

What is your age？

Table 3-3 Gender

Table 3-4 Occupation
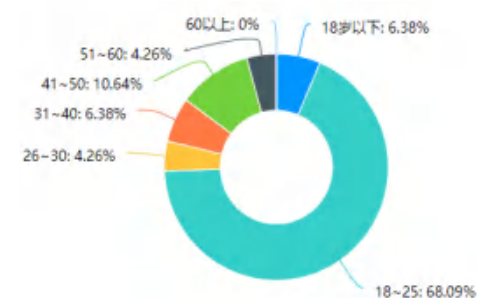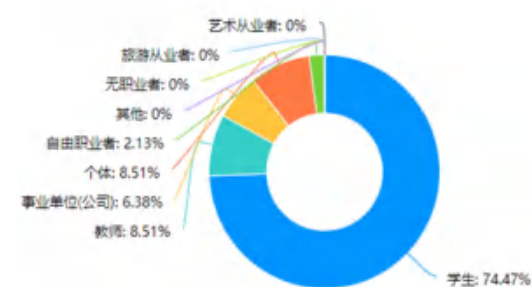
Table 3-5 Do you know about sound.

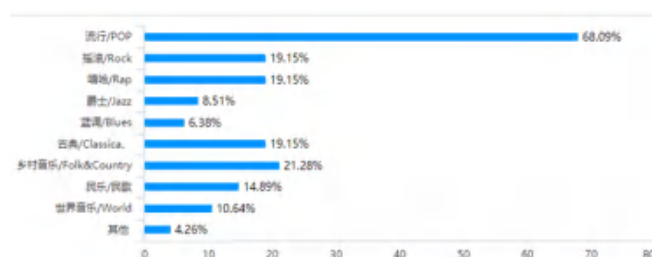Table 3-6 What type of music do you usually listen to?

Table 3-7 What is your most impressive voice (multiple choice)?

Table 3-8 What is your most disgusting voice (multiple choice)?

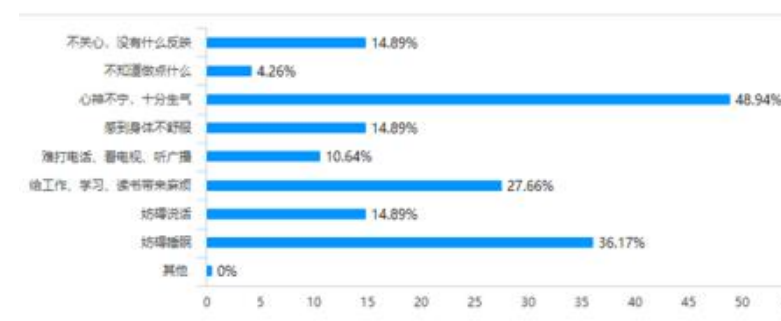Table 3-9 What trouble does the most annoying voice bring to you (multiple choice)?

Table 3-10 What ethnicity/dialect can be heard around you (choose multiple)?
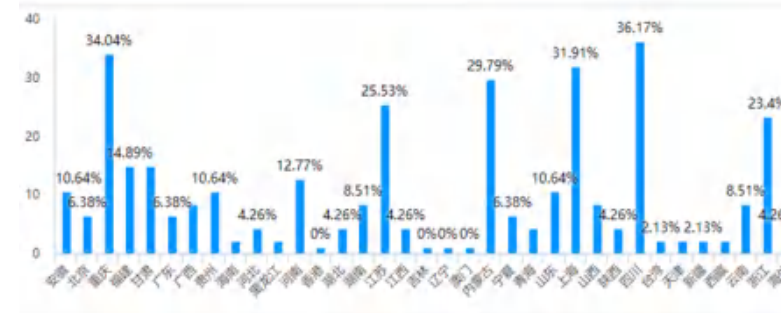
Table 3-11 Have you come into contact with products related to ethnic/dialect sounds (choose multiple)?
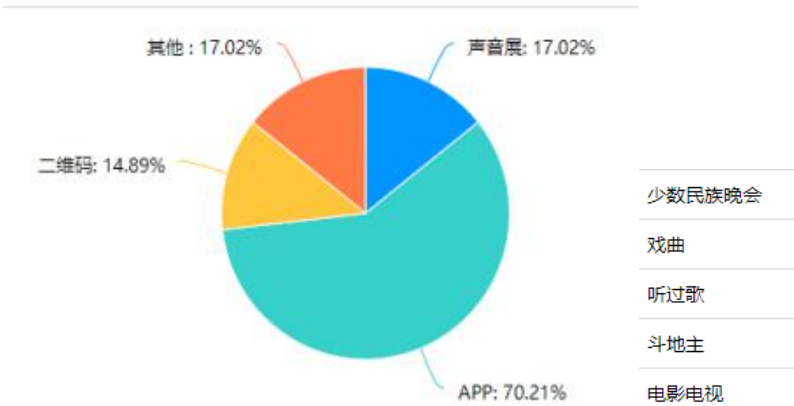
Table 3-12 In your daily life, which intangible cultural heritage sounds can you hear (multiple choices)?
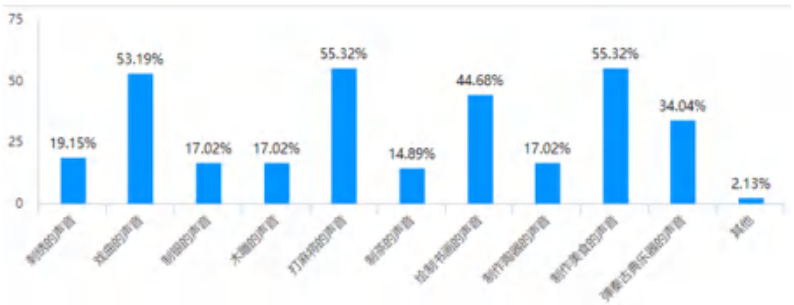
Table 3-13 Survey questionnaire impact factor data table: (partial) Questionnaire Locations for 46 persons.

Result

After conducting a questionnaire survey on 46 people located in different regions, the conclusions of 11 questions in the questionnaire are as follows:

Participants in the questionnaire survey accounted for 68.9% of people aged 18 to 25, representing the most significant number of people interested in voice problems.

Among them, female survey participants accounted for 63.83%, much more than male survey participants. It can also analyze from another social level that the probability of survey sharing among friends among women is much higher than that of men.

The third question is that most of the participants are current students or graduated students, accounting for 74.4% due to the limitations of the researcher's work. It can also be concluded from this survey that the proportion of students interested in sound art is relatively high.

The survey results in the fourth question are very worthy of deep consideration. The combination of people who understand sound and who know the sound well is

close to 90%.

And most people not only often listen to songs but also understand major music factions and types.

68.09% of people listen to popular music, and other categories also have different proportions.

In the latter two questions, among the most impressive sounds and the most offensive sounds, almost every sound has a choice, but the most offensive sounds have the highest proportion of noise and harsh sounds. This option is a multiple-choice question.

Whether can hear dialects around is found in various provinces in China, Sichuan Province, Zhejiang Province, Jiangsu Province, Inner Mongolia, and other regions account for a relatively high proportion.
The researchers analyzed that the accuracy of this value is limit.on
By the population participating in the questionnaire survey, it is only used as reference analysis data.

In the last two questions, I was exposed to issues related to sound and dialects, such as APP, QR codes, and sound exhibitions.
In other words, among the surveyed people, they still noticed materials related to sound and sound art in their daily lives.

In the question of whether you have exposure to the sound of intangible cultural heritage, the sound of embroidery, opera, tea making, porcelain making, and food making is relatively high.

This survey questionnaire analysis results are valuable for which sounds are worthy of being recorded and collected in the field surveys in this research.

3.4 Research plan and design practice

The six key research areas and the two secondary key research areas identified by the focus group. The research needs to start from Shanghai and pass through Henan Province, Shaanxi Province, Gansu Province, Qinghai Province, Yunnan Province, Hubei Province and Jiangxi Province. From Shanghai where the researcher lives to the research area in western China. Such a huge research and visit not only requires project funding, but also requires a relatively good plan for the research route. Make timely route adjustments according to seasons, special holidays, and transportation.

Based on the analysis and summary of the sound sample collection in Xi'an through the initial investigation, this study has set up seven research routes. The main research area is completed by the researcher and different travel teams, and the later sound analysis is carried out in conjunction with the focus group and the sound media laboratory.

The final sounds recorded in the sound media library are selected by the researchers, that is, not all sounds from the sound collection locations are recorded on the soundscape map on the Silk Road, and some sounds or locations are not recorded with meaning or research characteristics, so they are only retained by the researcher. Cloud media library. Make reserve materials for future research.

The First Research plan from Shanghai to---Xi'an From the Maritime Silk Road to the starting point of the ancient Silk Road. Trial sound collection, oral history, etc. The recording is planned to be completed in 2017

The Second Research plan from Shanghai to ---Luoyang Longmen--Lanzhou---Xining--Qinghai Lake---Danger Ancient City

--Liuyuan---Dunhuang City---Dunhuang Guazhou County---Yadan Geopark---Yulin

Grottoes---Suoyang City---Mogao Grottoes---Mingsha Mountain--- Crescent Spring, planned to be completed in 2018

The third Research plan from Shanghai to---Wuhan---Hubei Provincial Museum---Xianning Volcanic Hot Spring Scenic Area---Xiaozhuwan Reconstruction Town---Dayuwan Town, planned to be completed in 2018

The fourth Research plan from Shanghai to ---Kunming, Yunnan--Yongren County, Chuxiong, Yunnan---Zhiju Village, Yongren County, Chuxiong---Yi Autonomous Prefecture---Dali, Yunnan Bai Nationality Homemade Island---Xizhou Ancient Town ---Dali Erhai Huanhai Road---Shuanglang Ancient Town---Waise Ancient Town---Xiaguan----Jizhaoan. Plan to be completed in 2019

The fifth Research plan from Shanghai to--Jingdezhen---Bay Lake Scenic Area---Yaoli Ancient Town---Taoxichuan, Jingdezhen City---Qiandao Lake. It is planned to be completed in 2019. As the porcelain capital of China, Jingdezhen is well-known both in history and in the world. It is located in Jiangxi Province, China.

The reason for the separate division of this area is that the researcher used porcelain to design sound sculptures in Jingdezhen in the practice part of Chapter 7.

The sixth Research plan from Shanghai to---the Puzhehei minority area in Wenshan Prefecture, Yunnan, has a variety of ethnic cultural integration, natural landscapes, cultural landscapes, and Poya song books and other intangible cultural heritage sound landscapes. It was planned to be completed in 2019, but it encountered an epidemic in the course of practice.

At the same time, it was discovered that Yunnan is rich in intangible cultural heritage during the research process. It was finally completed twice in 2020 and 2021.

The seventh Research plan from Barcelona to---Beijing---Urumqi---Xinjiang Hotan---Moyu

Overview map of research locations
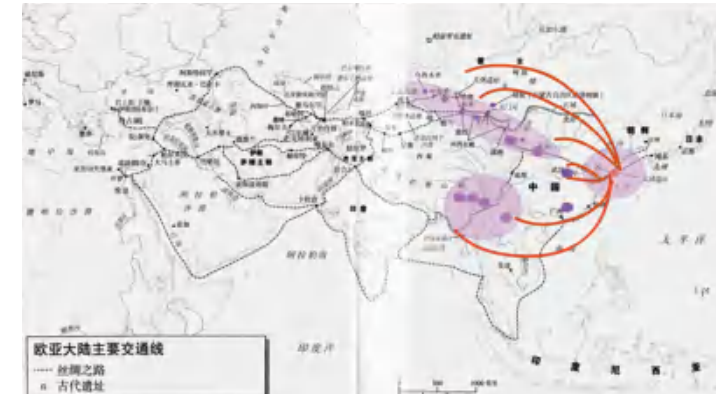
Figure.3-3 The image shows an overview of the area visited by the researchers
（*Design by Author*）

3.5 Equipment Used

Measuring instruments

Due to the wide range of selected sound collection points, there will be many emergencies during the visit, such as temporary changes in routes and sound collection tools. Mainly H2N sound collector, with iphone 7 plus, iphone 11 MAX, and Huawei Mate 20 pro mobile phones as auxiliary research equipment. In the picture of the visit, the date and time of the University of Barcelona is used as the basis for recording the date and time. At the same time, notebooks, watercolors, sketches and other painting methods are used to express the visitors' mood and feelings when recording.

The picture shows the basic version of Zoom brand sound collector, model H2N entry-level easy to carry sound collector.
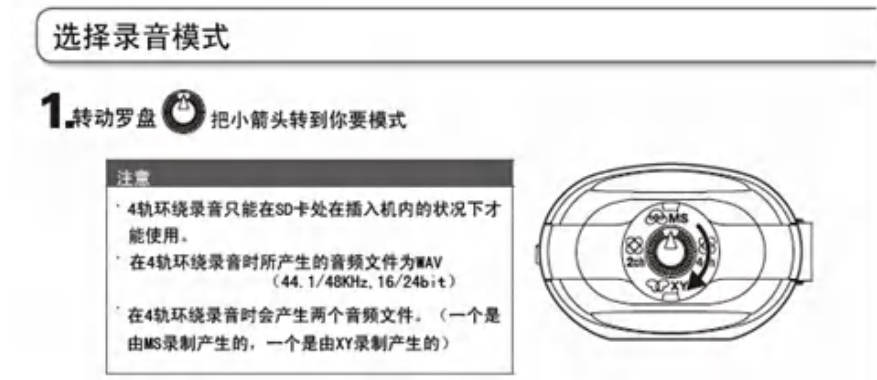
Figure.3-4 Simple operation introduction of voice recorder:
（*Own Souce*）

Zoom H2N has four recording modes, first select the recording mode.

The sound can be recorded in XY mode and MS mode at the same time in omni-directional stereo, or dual-track recording, which is a mixture of XY and MS recordings. Generally speaking, four-track recording is to use XY microphone and MS microphone to record audio. After recording, you can listen to the amplitude parameters of the audio recorded by the XY microphone and MS microphone in the software. Both of these modes can be used to record the sound of outdoor scenes. Among them, XY is more suitable for human voice collection, and MS is more suitable for environmental sound collection.
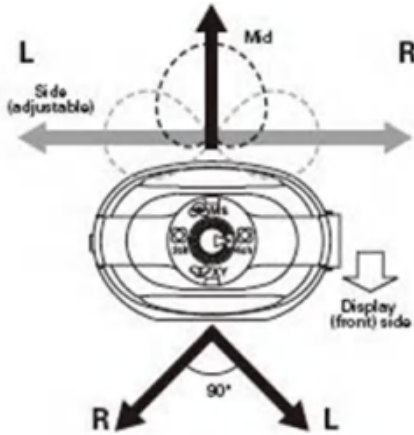
Figure.3-5 Different axis sound collection area map
（*Own Souce*）

Sound Evaluation

In the process of sound collection, which sounds are worth collecting, a complete sound evaluation and testing system is required

Sound is produced by vibration, which propagates through air waves. When the vibration wave reaches human ears, people hear the sound. In audio software, the sound is represented by a waveform. The sound that the researcher hears or records in the process of sound collection can be used as an effective sound. But this sound is relative. The sound that the researcher needs or consciously saves can be

understood as an effective sound, or use audio software to remove the unnecessary sound, leaving what is needed is the effective sound. Perhaps what was removed was the sound of the wind, which was the main sound of birdsong, or both. Relative to the effective use of sound, what we need will be left behind.

Effective sounds. In the researcher's customization, the collected sounds that can be heard by the human ear and can be applied to the soundscape map of this research are effective sounds.

dB and Hz

dB

The decibel (decibel) is a unit of measurement to measure the ratio of the quantity of two identical units. It is mainly used to measure the intensity of sound and is usually expressed in db. The dB value is expressed as a negative value in many sound software or analysis software. For example, the data shows that negative 9dB is actually greater than negative 33dB in decibels.

1 dB the sound I just heard

Below 15 decibels feels quiet

30 decibels whisper volume

40 dB the hum of the refrigerator

60 decibels for normal conversation

70 decibels are equivalent to walking in the downtown area

85 decibels on the road where cars shuttle

95 dB Motorcycle start sound

100 decibels, the sound of decoration electric drill

110 decibels Karaoke, loud MP3 sound

120 decibels the sound of the plane taking off

150 decibels, the sound of fireworks

Hz[6]

The Chinese name Hertz, abbreviated as: Hertz, is the basic unit of frequency, named for the German physicist Heinrich Rudolf Hertz (Heinrich Rudolf Hertz) who verified the existence of electromagnetic waves. Hertz is the unit of frequency when electricity, magnetism, sound waves and mechanical vibrations cycle through

cycles. That is, the number of cycles per second (cycles/second).

The unit of frequency that records sound vibrations per second is called Hertz.

---

[6]Hz is the unit of frequency. Frequency refers to the number of times that electric pulses, alternating current waveforms, electromagnetic waves, sound waves and mechanical vibration cycles are repeated in 1 second.

3.6 Application to case studies (I): Xi'an

In the book " Formal Logic and Discourse Representation Theory ", there is a set of research methods for observation, experimentation and collating experience.
"In the natural state of the object or phenomenon, people deliberately use the senses to study the object or phenomenon, which is called observation." [7](Kamp, 1993)

The researchers took Xi'an as the first stop and the sound sample collection site for the experimental investigation.

First, based on observations，Chapter 3.2.1, research in Xi'an urban area and literature review, the following research areas are obtained
The high-speed train from Shanghai goes directly to Xi'an Station. The sound collection points during the four-day journey of Xi'an are summarized:
2017------ Xi'an High Speed Railway Station

> Muslim Street
> Da-Yan Tower
> Little Goose Pagoda
> Gulou
> Bell tower
> Wolong Temple
> Da Piqiang Temple
> Huajue Temple
> Xi'an Museum
> Datang West Market Museum
> Gulou Musical Instruments Market
> Interview with local taxi driver

Based on the research methodology mentioned on 3.2.3 in this chapter, the researcher firstly studied the sound collection area of Xi'an city in depth and then designed the Field Work Investigation Record Form Table 3-14

According to this table, the researcher recorded the experimental research location, Xi'an
The sound collection instrument of ZOOMH2M is in MS mode, the same sound can be collected with MS ending and XY ending. These two kinds of sounds are divided into 360-degree and 90-degree acquisition.The difference between the two sounds is that the former is suitable for environmental sounds and the latter is suitable for human voice collection.

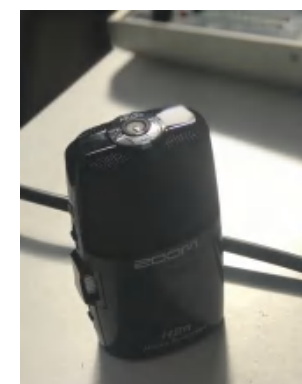
Figure.3-6 The instrument of ZOOMH2M
(*Own Souce*)

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[7]Kamp, H., & Reyle, U. (1993). From Discourse to Logic Introduction to Modeltheoretic Semantics of Natural Language, Formal Logic and Discourse Representation Theory. Published in 1993.

Table 3-15 Xi'an Field Word Sound Collection Information

Date	16-19.1.2017
Areas	Xi'an City
Groups	LINLIN WANG
Equipment	ZOOM H2M

Field work Investigation Record

Collection point sound sample information table

Location: Xi'an	Name	Description of the Soundscape	Date	Length about the Original Sound	Maximum sound decibel	/dB
Point A	Announcement on the Train	Xi'an Railway Station Point	2018/01/16	40s	56.5	51.2±5
Point B	Muslim Street Night Market	Craftsmen	2018/01/17	1min50s	90	75±15
Point C	Huajue Temple	Snow melting sound	2018/01/17	30s	53	50±3
Point D	Big Wild Goose Pagoda North Square Fountain	Fountain sound landscape	2018/01/18	2min	80	79±1
Point E	Small Wild Goose Pagoda Bell	quiet	2018/01/18	40s	30.5	29±1.5
Point F	Gulou Musical Instruments Market	Noisy musical instruments	2018/01/18	30s	55	50±4
Point G	Xi'an Museum	The narrator is explaining the sound in the empty museum	2018/01/19	50s	39	33±6
Point H	Datang West Market Museum	Relatively quiet	2018/01/19	40s	30	25±5
Point I	The legend on the taxi	Oral history	2018/01/19	1min30s	35	32±3

The first-time sound collection experience was not enough. In the Muslim Street night market, the researcher passed a section of local special snacks to collect a sound, and many of the sounds forgot to report the time and place. A large part of the sound collection was mixed with walking sounds and rubbing between bags and arms, and these decibels are very high and close-range noise is difficult to remove in post-processing. In the figure below, the sound sample information sampling in the sound test sample collection table of Xi'an preliminary investigation selects a relatively complete sound fragment.

After the focus group discussion and decision, the original sounds collected in these areas are sorted out and listed as follows

Table 3-16 Sound summary table of Xi'an area

Xi'an	西安				
No.	Name of the Sound	Date	Weather	Type of Sound Research	Google location
1	180116-094514 Nanjing nan station	16.1.2017	Cloudy	Soundscape research with urban culture as the background	34°15'09.9"N 108°57'09.7"E
2	180116-110208 Xuzhou	16.1.2017	Cloudy	Soundscape research with urban culture as the background	
3	180116-140556 Sound of train A	16.1.2017	Cloudy	Soundscape research with urban culture as the background	
4	180116-140556 Sound of train B	16.1.2017	Cloudy	Soundscape research with urban culture as the background	
5	180116-170358 Drum tower square	16.1.2017	Cloudy	Soundscape research with urban culture as the background	
6	180116-170021 Drum tower	16.1.2017	Cloudy	Soundscape research with urban culture as the background	
7	HUIMIN STREET Strike iron	16.1.2017	Cloudy	Soundscape research with urban culture as the background	
8	180117-102128 TITLE	17.1.2017 Morning	Cloudy	Soundscape research with urban culture as the background	
9	180117-104816MS Sound of street	17.1.2017 Morning	Cloudy	Soundscape research with urban culture as the background	
10	180117-105250 Wolong Temple	17.1.2017 Morning	Cloudy	Soundscape research with urban culture as the background	
11	Forest of Steles	17.1.2017 Morning	Cloudy	Soundscape research with urban culture as the background	
12	Nearby Forest of Steles	17.1.2017 Morning	Cloudy	Soundscape research with urban culture as the background	
13	Forest of Steles、bird、dog	17.1.2017 Morning	Cloudy	Soundscape research with urban culture as the background	
14	Wenchang Gate	17.1.2017 Daytime	Cloudy	Soundscape research with urban culture as the background	
15	Huimin street day2	17.1.2017 Daytime	Cloudy	Soundscape research with urban culture as the background	
16	Dapiyuan Mosque	17.1.2017 Daytime	Cloudy	Soundscape research with urban culture as the background	
17	Silverware sound	17.1.2017 Daytime	Cloudy	Soundscape research with urban culture as the background	
18	The sound of silverware and cake beating	17.1.2017 Daytime	Cloudy	Soundscape research with urban culture as the background	
19	Peanut crisp	17.1.2017 Daytime	Cloudy	Soundscape research with urban culture as the background	
20	Snow sound	17.1.2017 Daytime	Cloudy	Soundscape research with urban culture as the background	
21	Dayan Pagoda North Square1	18.1.2017 Daytime	Cloudy	Soundscape research with urban culture as the background	
22	Dayan Pagoda North Square2	18.1.2017 Daytime	Sunny	Soundscape research with urban culture as the background	
23	Dayan Pagoda North Square3	18.1.2017 Daytime	Sunny	Soundscape research with urban culture as the background	
24	大雁塔公园鸟叫声	19.1.2017	Sunny	Soundscape research with urban culture as the background	
25	Dayan Pagoda bells	19.1.2017	Sunny	Soundscape research with urban culture as the background	
26	bird song	19.1.2017	Sunny	Soundscape research with urban culture as the background	
27	bells	19.1.2017	Sunny	Soundscape research with urban culture as the background	
28	Snows	19.1.2017	Sunny	Soundscape research with urban culture as the background	
29	Footsteps on Big Wild Goose Pagoda	19.1.2017	Sunny	Soundscape research with urban culture as the background	
30	Little Wild Goose Pagoda bird song1	19.1.2017	Sunny	Soundscape research with urban culture as the background	
31	Little Wild Goose Pagoda snow sound in the lake	19.1.2017	Sunny	Soundscape research with urban culture as the background	
32	Little Wild Goose Pagoda bird song 2	19.1.2017	Sunny	Soundscape research with urban culture as the background	
33	Little Wild Goose Pagoda bells	19.1.2017	Sunny	Soundscape research with urban culture as the background	
34	Gulou Musical Instruments Market	19.1.2017	Sunny	Soundscape research with urban culture as the background	
35	Taxi story	19.1.2017	Sunny	Soundscape research with urban culture as the background	

(Own Source)

It can be seen from the sound summary that from Shanghai to Xi'an, from transportation to sound collection in Xi'an urban area, a total of four days, 35 sounds were collected.

These original sounds cannot be used as sound tags to enter the sound media library before being processed by the sound laboratory. Therefore, in the next chapter 3.7 Data analysis, the sounds in Laboratory Listening Tests the sound laboratory and Visual analysis of acoustic wave atlas in special software

3.7 Data analysis

Sound label design

The sounds collected in the natural landscape are mostly natural sounds and ecological environment sounds.

The sounds contained in the city from the natural environment include industrial sounds and cultural sounds.

The sounds collected in historical sites are classified as historical sounds, uniquely cultural Sounds, festival sounds, and unique cultural sounds in ethnic minority areas.

Besides, there are sound events, oral sounds, and other sounds in cities, countryside, and nature. Therefore, the researchers classified the types of sound tags as follows:

Based on the sample information collected by Xi'an sound, the researchers designed the sound in Chinese and English labeling: in line with international standards.

Title	natural sound environment
Sound collector	Cultural sound environment
Sound description	Industrial sound
location	Sound event
date	Festive sound
time	City sound
the weather	Country sound
Sound tag	Ecological environment sound
Sound collection instrument	Unique cultural voice
Key words	Sound symbol
	Historical voice
	Oral voice

Figure.3-6 International standards sound label

(Own Source)

The researchers used a fixed-point collection of recurring sounds in the field survey according to the sound tags.

Sound collection design and collected them repeatedly at different times of the day; for the fast-spreading sounds, they used mobile collection, and the researchers were walking while walking.

While collecting, the disadvantage of this method is that more noise has a record. The advantage is that some sounds that inadvertently break-in may have unexpected effects. Sound is considered noise can, in turn, be compelling sounds; for festivals and unique cultural sound collection Conducted by oral, specialized voice interview.

After experimental analysis, it is concluded that the sounds in the market can be collected and effective. If there is a particular weather environment, it can be monitored at the same place at different times. Then use the comparative method to compare and analyze the sounds of the same category in different locations, such as museums, markets or urban industrial sounds, road noises in other regions.
As shown in the figure, a total of 35 effective audios have been edit. After 3 to 4 days of surveying a site, the final audio can reach 25 to 35 effective audios.

Therefore, this research plan selects 10 to 15 essential locations to conduct a field investigation and data collection several times. It is the plan to collect 500 to 600 sounds, and finally, 300 compelling sounds have recorded into the sound media library.

After the sound collection and field surveys at the sound collection points selected on the Silk Road, the researchers listened to, screened, and classified all collected sounds throughout the entire process. The sounds are classified according to the collection location and then subdivided. Put the sounds that need analogy together and use the sound analysis app for data analysis.

Most of the sound collection is instantaneous and unpredictable, so some sound data analysis is surprising. Compared with researchers, every time they visit a critical area on the Silk Road, the collected sounds will be rearranged, numbered, and recorded after the trip, classified by region and analogy of similar sounds in the different areas or the same creature at other times. Sound contrast.

3.7.1 Laboratory Listening Tests

Using Adobe Audition software [8] to visualize the sound, break up the long sound and edit it into a sound of less than 1 minute. If it is a unique sound event, you can combine several sounds with different numbers. As a researcher and artist, the collected sounds must be edit and recreated. After a part of the original sound is retained.

The sound can be transpose, prolonged, and even grafted to the bazaar from location A to location B. The purpose is to reshape some sound landscapes that are different from life. 2020 is a relatively sad year for the people of the world. Many parties and festivals have been canceled. After the bustling market became empty, the researcher's voice record became a short reminder of the past prosperity.

3.7.2 Visual analysis of acoustic wave atlas

Based on the field survey results of various scenic spots, several key areas' main sound components and decibel ratios are summarized.
It can analyz that the soundscape elements of the survey locations have similarities and differences. Natural sound sources, human voices, and noise are familiar in various collection points. In some unique festivals, music, singing and dancing, and other sounds dominate the elements. Even in the deserted Gobi Desert, there are groups of tourist teams coexisting with the sound of the wind in the uninhabited land in the sound introduced by the tour guide. Therefore, in the subsequent chapters, the researcher will draw an analogy diagram to summarize and analyze the sounds of the same type of sound collection points.

Professional audio processing software, the most used sound processing software in this research

Figure.3-7 Intercepted from AU software sound spectrogram and Hz analysis
（*Own Source*）

[8]Professional audio processing software, the most used sound processing software in this research

The figure shows the dB threshold for intercepting audio. In Audition software, audio is calculated with a negative value. Different from the average dB value obtained by audio analysis software, the main decibel range of the audio in the figure below is from 35 to 65, so the sound of some audio curves is still strong. If it reaches 70 decibels, it is equivalent to walking in a downtown area.

In the environmental soundscape, the singing of birds is more representative and rhythmic. Here we take the birdsong of Guazhou as an example to demonstrate how to remove background environmental noise and individual point noise.

Figure.3-8 Guazhou birdsong wave
(*Own Source*)

The image shows the sound of birdsong accompanied by the wind in the ancient city of Guazhou, and the rhythmic sound of wind and birdsong are mix in the picture.

Use Audition software first to capture noise samples and then reduce noise. After trying to play, select the entire file to reduce noise together.
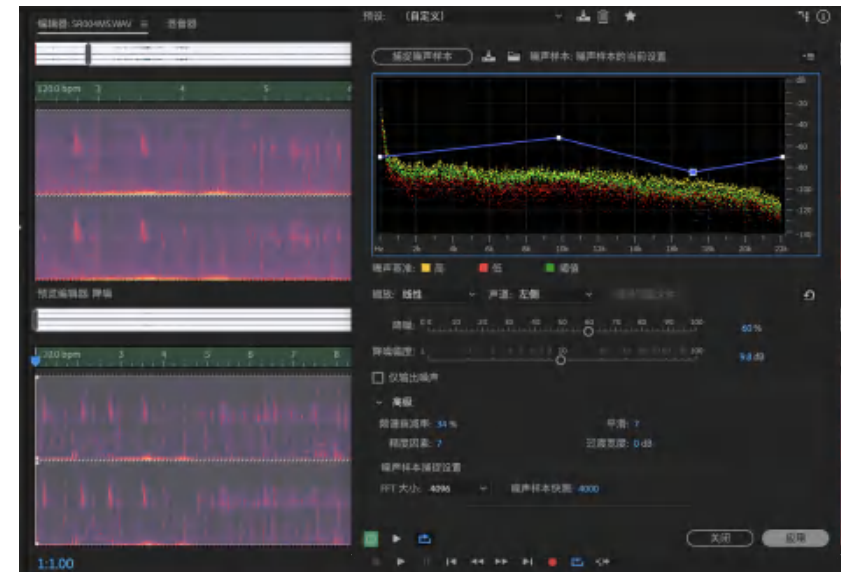
Figure.3-9 Editing Audition 1 step
(*Own Source*)
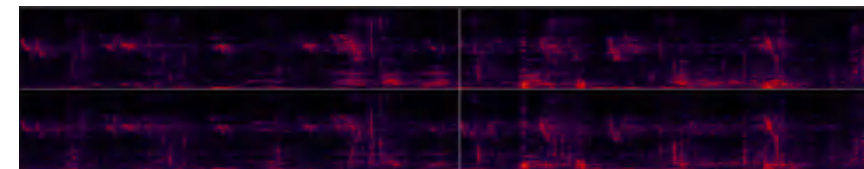
Figure.3-10 Editing Audition 2 step
(*Own Source*)

After editing, the bird's song has found to appear in 7.3 seconds.
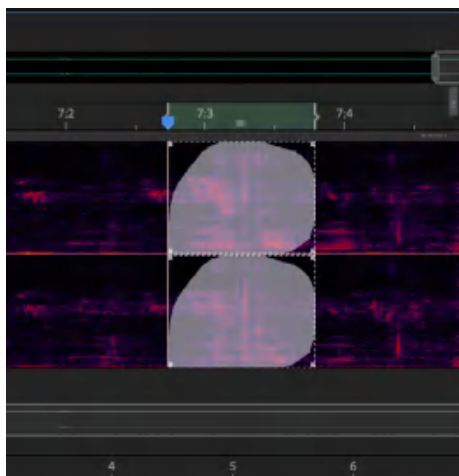
Figure.3-11 Editing Audition 3 step
(*Own Source*)

According to the overall environment experience analysis, the researcher cannot delete the entire section, so he chose the stain repair brush tool and changed the size and width to a width similar to that of the noise image. After processing, the noise is eliminated, and the original environmental sound is retained.

3.8 Conclusion

Applying the ethnographic research methodology to the research on "The sounds on the Silk Road from Xi'an to Urumqi "can accomplish the research purpose in this doctoral thesis.

According to the analysis in the previous chapters III, the researcher's practical re-search steps in **Part II** are as follows：
a) Through telephone interviews and literature search, we can in-depth find out which areas of the six key research areas and two sub-key research areas proposed in Chapter 3.4require field surveys
b) In each research area, a different focus group can be formed, composed of ex-perts, scholars, researchers, local government officials, and alternate researchers, mainly researchers,and students.

Table 3-17 Field Work Area in Summery
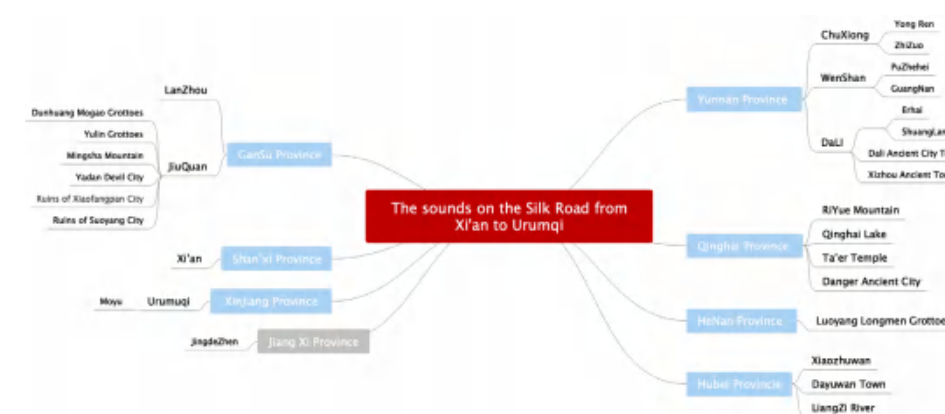
（Own Source）

c)Although the sound categories that may appear in these research areas. Some specific regional attributes and their sound-specific attributes, if they are recorded entirely according to the location during the sound practice research process, can only achieve the research purpose of the sound media library file record in the research of this doctoral dissertation.

The soundscape on the Silk Road has its particularity and the richness of sound sources.

In the history spanning nearly a thousand years, some cultural and natural environments have been well preserving. They have a particular mapping and connection with the sound of the Silk Road in history. According to the region, this research found that the value of a single regional sound record is not high.

On the contrary, according to the three types of sound categories. They are summarized in the previous chapter, the sound horizontal comparison and analysis of the key areas of the study are carried out. The final data obtained can be summarized and analyzed, and the sound media library and similar sound landscapes in different regions. It makes up for the problems of "long-length records," "limitations of quantitative data analysis," and "preconceptions of voice collectors" in ethnographic surveys.

Based on the discussions between the researchers mentioned earlier and the research team formed, the key directions of sound research has divided into three aspects: the following figure and the study and practice are carried out in chapters 4, 5, and 6, respectively.

Table 3-18 The sounds on the Silk Road from Xi'an to Urumqi——Field Work Research

d) After the sound collection, the sound data is analyzed and compared, and the research conclusions are also apparent.
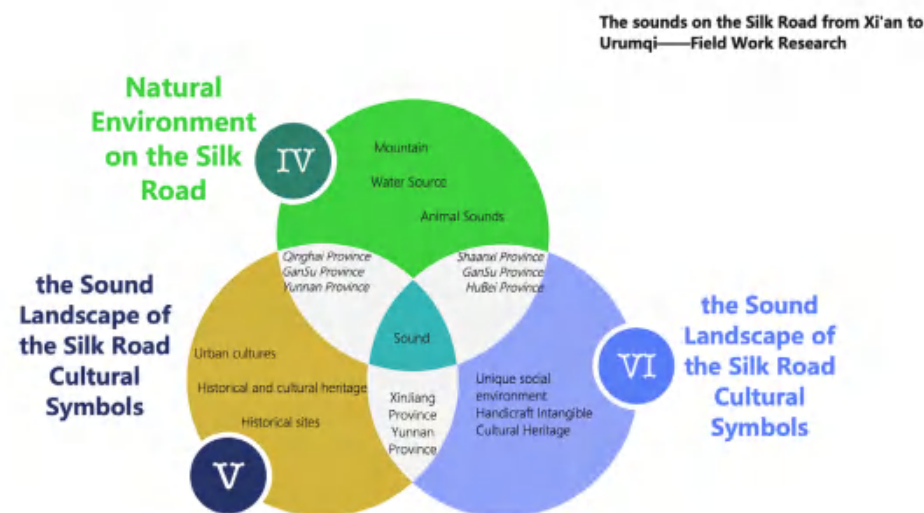
(Own Source)

According to this summary of Fieldwork research, go to the following research practice.

After the above four steps, the researcher's research methodology in this doctoral dissertation has made it clear that the research objectives set out in the first chapter of this research can be achieved.

The feasibility of the methodology has been verified through the practice of the second part. Because of the unique nature of the sound, the sounds fieldwork research in the fourth, fifth, and sixth chapters are processing in the sound laboratory following the investigation.

A gradual approach is adopted in applying sound processing software, that is, the more straightforward processing from the previous chapters.

This method transitions to the more in-depth and complex processing in the last chapter. The researcher's experience summed up from the shallower to the deeper through the five-year practice of this doctoral dissertation.

Chapter IV
Research on Soundscape of Natural Environment on the Silk Road

4.1 Introduction

According to the research in the previous three chapters, from Chapter IV to Chapter VI, it is the practical research part of this doctoral thesis.

The research methodology summarized in Chapter 3 lists the research location, date, focus group personnel, and research equipment.

Table 4-1 Fieldwork on Soundscape of Natural Environment on the Silk Road

Date	2018	2018	2019	2018
Areas	QINGHAI	GANSU	YUNNAN	HUBEI
Location	Point A.C	Point B	Point D	Point E
Groups	LINLIN WANG	MS CANG	MR LIAO	
Equipment	ZOOM H2M	Huawei Mate Pro 20		

Field work Investigation Record

LOCATION	NAME	DATE	DESCRIPTION OF THE SOUNDSCAPE		
Point A	1	17.7.2018	RIYUE MOUNTAIN		
Point B	2	21.7.2018	MINGSHA MOUNTAIN		
Point C	3	17.7.2018	QINGHAI LAKE		
Point D	4	20.2.2019	DALI ERHAI		
Point E	5	29.6.2018	LIANGZI LAKE		
Point F	6	19.7.2018	GUAZHOU Ancient City		

After the researcher completed the sound collection according to the planned route specified in the previous chapters, when writing the field research part, the chapters were arranged based on the dates of the geographical visits, because it is more effective and quicker to find the total Soundscape of a certain area.

In the natural environment, the listener, the natural sound source of the landscape, and the air transmission constitute a sound generation and recording.

At the beginning of the fieldwork in each area, the researcher uses literature review and observation methods to find the locations that need to be investigated in this area and list them in a chart.

The researcher used a focus group discussion to record the locations of this chapter through the following aspects:
date,
Introduction to the background of the research site,
Geographical introduction,
image record,
Sound collection,
Sound Lab Data Recording
Because of the unique properties of the sound, after the important sound clip, the Audition curve clip follows the corrected sound.

According to the diversity of ethnographic research methods, curve records are regarded as research records.

The three natural soundscapes, including mountains, water, and animals, are studied and analyzed in the Result.

In the process of practical research, it is unknown whether the research hypotheses and objective can put forward in the early stage can be completed—record and research accumulation according to the research Methodology of Chapter III.

4.2 Soundscape research with mountain background

The Soundscape is significantly affected by the natural environment, and the researcher needed to record and test the sounds heard in the natural environment. Mountains are an important part of the natural environment. The two mountains selected in this section have great regional characteristics. One is a mountain on a plateau, which is an important gateway in the history of China's Silk Road; the other is a mountain in the desert, whose underwater environment was converted into a desert through hundreds of millions of years of climate and geological changes.

Riyue Mountain[1] is rich in vegetation and has a high altitude. Yak is used as a transport animal. According to the Tibetan customs, a bell is tied to the neck of a Yak. On relatively empty mountains, the sounds of bells generated by the physical movement of yaks and carried by the winds is a specific part of the local soundscape. In the Mingsha Mountain[2] area，camel caravans are the main means of transportation, and the sounds of camel bells, near or far, are also one major sound source in the desert area.

In a natural environment where there are mountains, wind sounds exist in all sound collections. Depending on the altitude, the degree of humidity, the volume of a wind sound is different. Wind sounds are one of the important factors that make human hearing occur.

4.2.1 Riyue Mountain

The climate and ecological environment of Riyue Mountain was reviewed prior to field research. The data source is Baidu Baike and Baidu Climate.
Altitude: 3570 m

Climate type: continental monsoon climate
Climate characteristics: long sunshine time and strong solar radiation; dry and windy in spring, short and cool summer, wet and rainy in autumn, long and dry winter

Summary of temperature: The daily temperature range is large, the annual temperature range is small, the freezing period is long, and the frost-free period is short.

The annual average temperature is about 3.0℃, the highest temperature is 28.3℃ (2010.7.28.), and the lowest temperature is -23.5℃ (2018).
Rainfall: The average rainfall from April to October is 444.6 mm. During recent years, the largest rainfall occurred in 2018 (533.6mm), and the smallest in 2011 (384.7mm).

The longest continuous precipitation period was 16 days, which occurred from August 15th to 29th in 2009, and the precipitation was 76.7 mm.
Wind direction overview: Northwest wind prevails throughout the year, westerly wind prevails in winter, and easterly wind prevails in summer;

"Solar radiation resources are abundant, and the average length of annual sunshine is 2718.6 hours"

---

[1] In history, Riyue Mountain was the boundary between the Tang Dynasty and Tubo
[2] The Mingsha Mountain and Crescent Spring Scenic Spot, is a national key scenic spot in Gansu

Date: 17th July.2018 Researchers conduct sound collection in Riyue Mountain and Qinghai Lake

The legend of Riyue Mountain:

According to a legend, Princess Wencheng walked down Riyue Mountain. When she looked back at her hometown, she couldn't help but shed tears. The princess's behavior moved the vegetation and rocks here, and everything seemed to be crying for the princess, and even the river "flowed backwards" in the direction of the princess's westbound journey. From then on, it was called "backflowing river". Obviously, Riyue Mountain and Daotanghe, these legends of place names from the same origin, have similar plots and coincident endings.

They all use the names of the mountains and rivers to spread Princess Wencheng's journey to the Qinghai-Tibet Plateau in a vast space. These legends tell the complex psychological and emotional changes of Princess Wencheng from the hesitation when she travelled to Qinghai and finally to the snow-covered plateau. Although the angles of people's words and rumours are different, the narrative has the same effect. They all use the instantaneous changes to set off Princess Wencheng's determination and courage to enter Tibet.[3]（*Zhang，Zhang& Bao，2020，p.45*）

Table 4-1 The research road map covering the entire Qinghai Lake area
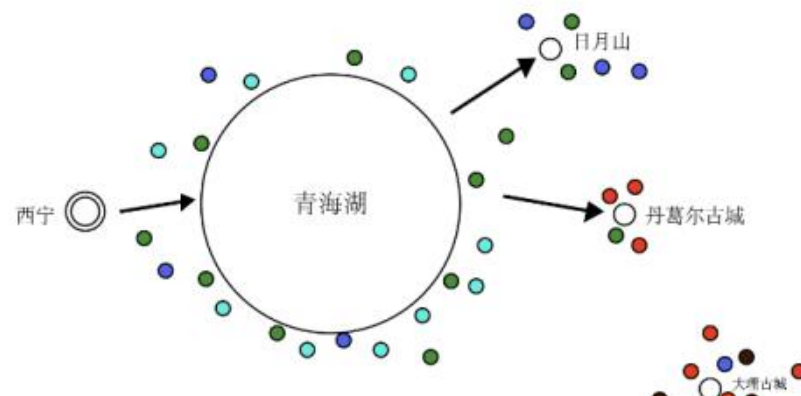
Researcher visited several famous nearby areas in the Qinghai Lake area
（*Own Source*）

Figure. 4-1 The image shows the locations of Qinghai Lake, Riyue Mountain and Xining City in the actual geographical environment
(Own Source)

The surface of the Riyue Mountain area has good water retention conditions and dense vegetation. The researcher's visit occurred during the hottest summer time, however, it felt quite cool in the Riyue Mountain area, and the sunshine was strong. The wind blew through the dense grass and produced a remarkable echo effect. Since the Walking Sound collection was needed, the researcher walked through the grass in spite of the morning dew to collect the sounds.

All the collected sounds have the rustle of walking through the grass. It also shows that the public space in this area is in better ecological conditions, and only the sound of car horns could be heard afar from time to time. In winter, traffic jams caused by landslides blocking roads due to bad weather often occur.

A total of four pieces of audio were collected, the default format is WAV, and each

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[3]Zhang Hailong, Zhang Xiaoyong & Bao Guangpu. (2020). Characteristics and comprehensive evaluation of important geological relics in Riyueshan area, Qinghai. Journal of Qinghai Normal University (Natural Science Edition) (03), 43-50. doi:10.16229/j.cnki. issn1001-7542.2020.03.009.

Figure. 4-2 Initial audio captured by researcher
(Own Source)

Figure. 4-3. Yaks on Riyue Mountain, taken by the researcher
(Photo by Author)

piece has two types: MS and XY. In most cases the researcher used MS as the editing object, and XY was generally used indoors or for oral interviews.

In the process of sound editing, the method of comparative analysis was applied. All the collected sound pieces were imported into the Audition software, and each piece was listened to and examined one by one.

Because the sounds to be analyzed were collected in an outdoor, mountain environment, the WAV format was used for sound spectrum analysis. And the word "RIYUE" was added to the beginning of the original titles of each sound pieces, in order to distinguish them from the sounds collected in other regions.

The process of editing and analyzing four sound pieces:

Analyze the editing process of the four sounds:

🔊 RIYUESR0013MS

Editing process: started cutting from the eighth second, kept the caption of Riyue Mountain, kept the horn sounds, the voices of some Tibetans and the bell sounds of yaks.

🔊 RIYUESR0014MS

Editing process: kept the sound of cars on the road, removed the sound of walking

🔊 RIYUESR0015MS

Editing process; the sound of winds on the grassland was mixed with the sound made by the grass, 29 seconds of such mixed sound was removed; the human voices were shortened.

The researcher started to have difficulty in breathing, and symptoms of altitude sickness appeared. It was not comfortable to step on the grassland there, since some grasses were quite hard and thorny.

Import 4 audio files into Audition software：
The researcher used the Audition software to import all the audio pieces collected in the same region and listened to and examined them repeatedly.

Figure. 4-4 Grass on Riyue Mountain, taken by the researcher(Photo by Author)
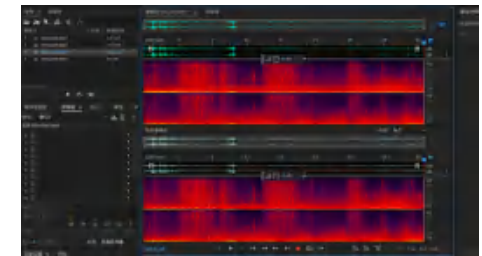
Fgure. 4-5 The four audio pieces imported into Audition software(Photo by Author)
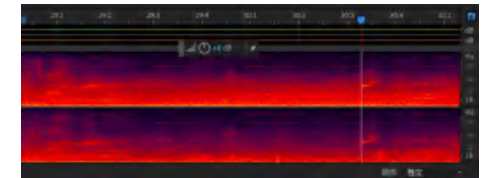
Fgure. 4-6 Editing RIYUESR0015MS in Audition, Step 1 (Screenshot by researcher)

Based on the wavelength patterns and directions, the researcher decided which parts of the audio pieces need to be kept and which removed or cut. Other editing processes such as noise reduction were also involved.

RIYUESR0015MS had a continuous dot-dash line close to the 29th second which remained at the same frequency.

After checking several times, the researcher concluded that this little line represents the bell sounds of the yaks on the grassland. After shortening and deleting invalid sounds, this piece was renamed as RIYUESR0015MS.MP3.

To prepare for the sound map website to be designed later on, the names of all processed sound clips have a prefix which is the abbreviation of the name of the place where they were originally recorded.

The format of all clips is MP3, and the effective length of each is less than 1 minute. As for the audio piece abovementioned, it was edited to last for 30 seconds in order to obtain better attention from the audience.

As shown in the picture above, it can be seen that the grasses in Riyue Mountain are very high. Yaks play an important role in sparsely populated areas. Local herders use yak dressing up as an important way to attract tourists.

🔊 RIYUESR0016MS Strong wind. Strong wind, cut audio and shortened

It can be seen from the graph that the yak ringtones in the entire Riyue Mountain area are clear and clear, the Tibetans speak lowly, and the sound of wind and walking on the grass run through the entire sound segment.
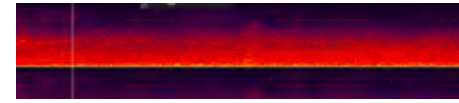
Fgure. 4-7 Editing RIYUESR0015MS in Auditon, Step 2(Screenshot by researcher)

Fgure. 4-8 T The grassland and yaks on Riyue Mountain, taken by the researcher(Photo by Author)

Fiure. 4-9.Entrance of Mingsha Mountain, taken by the researcher
(Photo by Author)

4.2.2 Mingsha Mountain

Preliminary literature search：
The climate and ecological environment of Mingsha Mountain was reviewed prior to field research. The data source is Baidu Baike.

Climate characteristics:
First of all, sufficient sunshine. The annual sunshine hours are up to 3,200 hours; the frost-free period is 150 days; the average annual temperature is 9.3℃; the average temperature of July is 24.7℃, and the average temperature of January is -9.3℃.

Secondly, dry and little rainfall. Usually a northerly sinking airflow hovers over the Dunhuang Mingsha Mountain area, which is quite dry.

The average annual rainfall is merely 39.9 mm, and summer rainfall accounts for 63.9%, winter only 7.5%. The annual evaporation capacity is up to 2400 mm.

Thirdly, the area has four distinct seasons, and winter is longer than summer. The temperature difference between day and night is large; and a local saying goes, "Wear your leather jacket in the morning, just put on a light thin silk shirt at noon, and eat your watermelon next to a hot fireplace at night". The annual temperature difference is up to 34℃.

Dunhuang winds are mostly easterly and northwesterly all year round. The average wind speed near the ground is 3 meters per second. Dry hot winds and sandstorms are the main natural disasters. (Baidu, 2011)

Mingsha, a magical natural phenomenon and natural landscape, is considered to be a natural heritage and geological landscape with great scientific mystery, as well as a unique soundscape (soundscape) and an important tourism resource and landscape.[4]（Chen，Zhang, Zhang & Gao,2019, p.120）

In the urban area of Dunhuang Jiuquan City, the mountains are all piled up of fine sand, and the sand rustles when you walk on it, which is why it's called Mingsha Mountain, or "Sounding Sand Mountain". There are also "Sounding Sands" in other parts of the earth's surface, but they sound different.

It can be seen from the picture that each of the hills has a different shape. Tourists like to climb halfway up the hills at sunset to watch both the sun and the moon at the same time. Because of the long sunshine hours in the area, the photo was taken at 8 o'clock p.m., and the sun is still high up the mountain.

Figure 4-10 Mingsha Mountain Crescent Spring area of Mingsha Mountain[5]

(Photo by Wang Jianmin)

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[4]Chen Maichi, Zhang Jie, Zhang Honglei & Gao Lin. (2019). Geographical distribution and sounding mechanism of Mingsha landscape. China Desert (05), 120-126.
[5]Wang Jianmin. (2019). An oasis in the depths of the desert-Mingsha Mountain and Crescent Spring. China Prefectural and Municipal Newspaper (12), 137. doi:10.16763/j.cnki.1007-4643.2019.12.044.

Figure. 4-11. Clouds with a glider crossing the sky, taken by researcher (Photo by Author)

Camel bell sounds in the desert
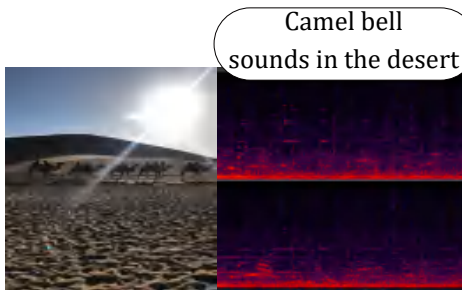
Figure. 4-12. Mingsha Mountain, camels picking up tourists and goods (Photo by Author)

Figure. 4-13 By researcher at the foot of Mingsha Mountain(Photo by Author)

One can see from the photo that the sand is so smooth. In fact, this area was once completely submerged by either a river or a lake a long time ago, however, now the only water body left is the Moon Lake as seen in the photo.

Date: July 21st, 2018

The researcher recorded more than 10 audio pieces in the Mingsha Mountain area, however, the place was crowded with tourists that made too much noise. Only five out of the 10 pieces were editable:

The Crescent Spring area of Mingsha Mountain

◁))) MISR007MS Mingsha Mountain at 7:30 pm, title: Camel Bell

◁))) MISR008MS bell sound was clipped cut separately; human voice was lowered, and the rustling sound was kept

◁))) MISR009MS Glider Sound at Mingsha Mountain

◁))) MISR010MS Camel bell sounds at Mingsha Mountain, only the clear bell sounds were kept

IMG-8973.MOV

The researcher took the video of camels walking through the desert in Mingsha Mountain, and and the camels' bells rang

◁))) MOSR0011MS The rustling sound made by stepping on sand

◁))) MISR0014MS Desert Oasis Swallows

It's the birdsong pattern after noise processing. The screenshot shows the intervals, frequency and dB range of the twitters.

In Mingsha Mountain, the loudest decibel value is the sound made by the gliders. Because the area has developed into a tourist attraction, gliders come and go frequently on clear summer days.

In addition, there is a mixture of bustling human voices and bell sounds. The photos taken by the researcher show that the rows of camels carrying passengers or cargos made a unique landscape at sunset.

When the sun was setting, the researcher observed the lonely smoke
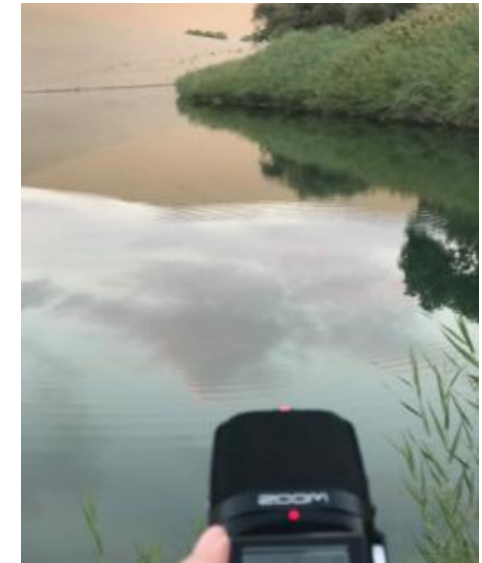
Figure. 4-14 Researcher recording swallow twitters in the desert oasis (Photo by Author)
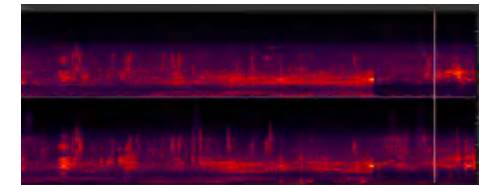
Figure. 4-15 Editing MISR0014MS in Audition (Own Source)

in the desert and the sudden drop in temperature. The oasis in the Mingsha Mountain area is shrinking year by year due to desertification, and the Dunhuang local government fills it with water every year; the birdsong by the Crescent Spring is the liveliest sound in the desert.

According to the sound pattern, the birdsongs at sunset had a very high pitch. In the natural environment, these are the real leading role of life.

The sound of wind in the Mingsha Mountain area is very clear. The wind itself has no sound, but a natural phenomenon caused by the horizontal movement of air pressure.

There is a big difference between the sound of wind in the desert and the sound of wind in areas covered by vegetation. In the later chapters of this chapter, two different wind sounds will be analyzed and compared.

4.3 Soundscape research with water source as the background

Water is the commonest sound in nature, and it is also a sound source that exists in the surrounding environment of most humans. Where there is water, there will be humans. Water forms are also diverse, such as streams, larger rivers, lakes, sea water, etc.

Many human houses and courtyards now introduce water as a kind of "landscape". Because of this sound area with water flowing, some surrounding noise can be shielded. Let the soul reach a state of peace. The location and direction of rivers are different, and they have their own voice and language.

Two of the three water sound sources selected in this research are China's famous plateau lakes, and the third is the largest freshwater lake of Hubei Province, which is well-known for its lakes. During the visit, I found that the natural ecological environment near the lake is better, and human beings are always happy and calm when hearing the sound of water.

This is why many psychologists or yoga practitioners play water sounds under certain circumstances. The sound of the plateau lake is more soothing than the sound of the sea, and there are not too many waves.

Compared with Erhai Lake, Qinghai Lake is located at a higher altitude and has more mountains nearby, and the sound of water waves is stronger. Many places around Erhai Lake have been urbanized, so the atmosphere of life is stronger. The sound collection area of Liangzi Lake is also in the suburbs, so the collected sound is also relatively reduced. The collection time of the three locations is in summer and autumn, so there are very clear animal calls, and all kinds of birds and insects are recorded at the same time. Due to the need for chapter analysis and comparison, some animal sounds are recorded in section 4.4 of this chapter.
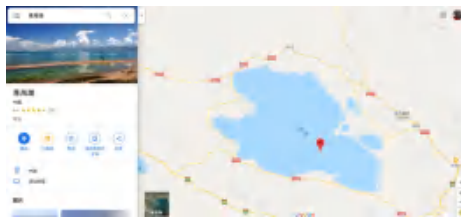
Figure. 4-16 The shape of Qinghai Lake on Google Maps(GOOGLE MAP)
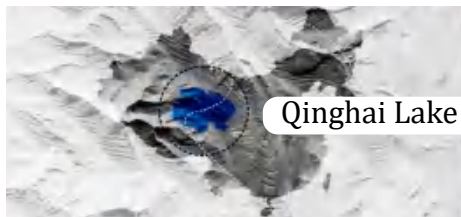
Qinghai Lake

Figure. 4-17 The geographical location of Qinghai Lake on the map of China (Drawing by Author)

4.3.1 Qinghai Lake

Literature Investigation on the Geographical Position of Qinghai Lake：

Qinghai Lake is located in the northeastern edge of the Tibetan-Qinghai Plateau. It is. the largest saline lake in China. Due to uneven uplift of the plateau, some of the basins formed lakes in an isolated drainage system. The geochemistry of bedrocks affects the hydrological chemistry of drainage area and the physicochemical features of the Qinghai Lake.

The main source of organic carbon is the ecological system surrounding the lake; Weathering of rocks also contributes to the carbon source in the lake. The chemistry of the Lake is heterogeneous in both vertical and horizontal dimensions; Changing of seasons also influences the hydrochemistry.[6](Jin, 2005, p.1)

Date: 17th July.2018 Researchers visited Qinghai Lake.

Qinghai Lake, cloudy and rainy, about 3,200 above sea level, covering an area of more than 300 kilometersArrived at Qinghai Lake
Arrived at Qinghai Lake
Eight audio pieces collected by the researcher in the Qinghai Lake area：

🔊 QINGSSR0017MS a little bird calling
Editing process; keep only the title and the bird
Encountered a little frog by the Qinghai Lake

🔊 QINGSSR0018XY Qinghai Lake's water and birdsong
Editing process; keep the title and water sound for about a minute, and remove the speech 4 minutes and 2 seconds, there will be a bird cry, cut into the second segment, 18.2

🔊 QINGSSR0018XY Lake water sound
QINGSSR0019MS Birdsong by Qinghai Lake

Editing process; birdsong Figure. 4-18 from 1 minute and 8 seconds to the end

🔊 QINGSSR0020MS Sound of lakeside water
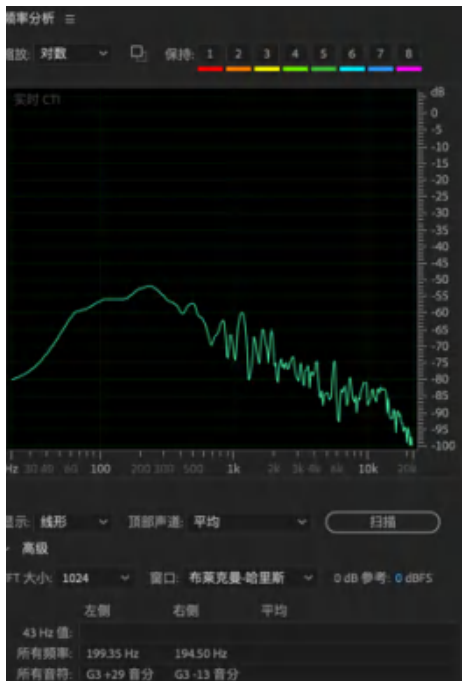
Figure. 4-18 Birdsong pattern in Audition (Own Source)

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[6]Jin-cai, T. (2005). Qinghai Lake: A Natural Laboratory for Geomicrobiological Research. Geological Journal of China Universities.

Figue. 4-19 The sounds of water waves and seagulls at Qinghai Lake
(Own Source)

Figue. 4-20 The picture shows the researcher taking the waves by the Qinghai Lake
(Photo by Author)

Editing process; 19 seconds to retain the lakeside water sound collection, the first half of the motorcycle sound is removed to the end of 42 seconds

⊲ⁿ QINGSSR0021MS Motorcycle sound in wide-area environment near Qinghai Lake
Editing process; noise reduction, shortening

⊲ⁿ QINGSSR0022MS Qinghai Lake water waves and the sound of seagulls
Editing process; no need to edit source files

Qinghai Lake gets its name because the sea water is blue when it is sunny. When the researcher collected the sound, the weather changed from sunny to cloudy, so the sound of water waves changed from calm to higher decibels.

The video is collected by an Apple mobile phone：
QING-IMG_8236.MOV

⊲ⁿ QINGSSR0024MS. Gales and chirps on the edge of Qinghai Lake

Editing process; no editing required

⊲ⁿ QINGSSR0025MS. Gales and chirps on the edge of Qinghai Lake

Editing process; removed vocals

The ecological protection of Qinghai Lake is better, and there are not only the sounds of crickets but also the croaking of frogs in the small ditches.

After the Qinghai Lake sound collection, the researcher followed the driver to visit the ancient city of Danger on the way back. Because the ancient city has been renovated in modern times, many shops in the front are very different from the original houses in the back. Some other houses in the village have collapsed for a long time and cannot be occupied.

Figure 4-21 The picture shows the researchers collecting sound in the wetland by the Qinghai Lake.
(Photo by Author)
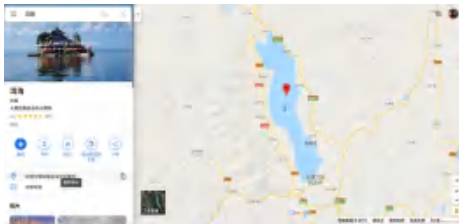
Figure 4-22 he Erhai Lake on Google Maps is shaped like an ear (GOOGLE MAP)
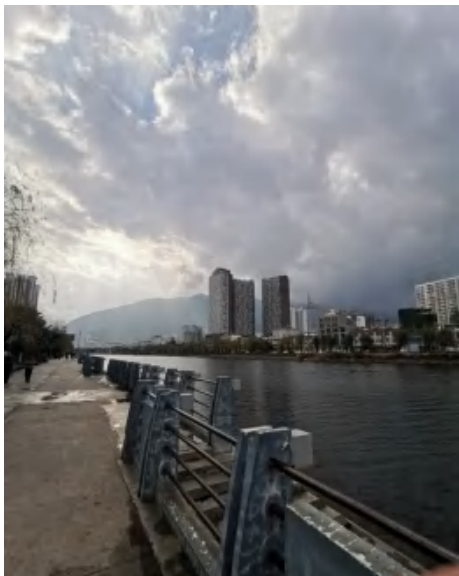
Figure. 4-23 After the rain; the mountain behind is called Cangshan (Photo by Author)

4.3.2 Dali Erhai Lake

Date: 20th Feb.2019 Yunnan Dali Bai Autonomous Prefecture

Erhai Lake, plateau freshwater lake, fault lake

The beauty of "Cangshan Mountain is not Mo Qianqiu Painting, Erhai Lake has no strings and Wanguqin" is world-famous. Cangshan and Erhai are located in Dali Bai Autonomous Prefecture, Yunnan Province. Between every two peaks of the Nineteen Peaks of Cangshan, a stream rushes down and flows into the Erhai Lake.

Erhai Lake was once called Yeyuze in ancient literature. It is the second largest freshwater lake in Yunnan Province, with an area of 256.5 square kilometers and an average lake depth of 10 meters. It is named "Erhai Lake" because it is shaped like an ear.[7] （*He，2016, p.84*）

Erhai Wetland Park Near Xing Erhai

North Road, Dali
Cangshan after the rain
Date 20th Feb .2019 Erhai Lake, Xiaguan, Dali City

◁ⁿ ERSR0020MS Collect the sound of waves hitting the shore

20.2.2019 Erhai Public Park

◁ⁿ ERSR0021MS

4:57 pm, cloudy

The sun is out while it is raining, and there are birds singing in the Erhai Lake wetland

◁ⁿ ERSR0038MS Erhai Double Corridor

◁ⁿ ERSR0039MS Shuanglang Ancient Town Seaside

◁ⁿ ERSR0040MS Double Corridor on the way to the seaside of Digging Huanhai East Road

◁ⁿ ERSR0041MS Erhai Wave Sound

Ancient temple on Huanhaidong Road, Tibetan-style colored flags fluttering

and the sound of Mahjong
19 Cangshan Road, Dali at night

As can be seen in the figure, the surrounding environment of Erhai Lake is relatively quiet. The weather was better when the researcher's voice was collected. There are not too many storms. The overall voice tends to be peaceful.

The ecological environment around Erhai Lake is relatively good, with various birdsongs, which will be introduced separately as typical birdsongs later in this chapter.
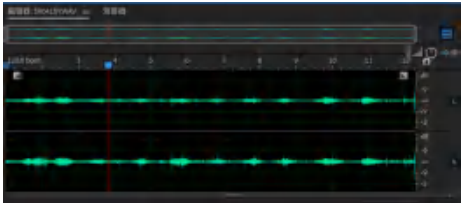
Figure. 4-24 Audition raw data of the sound changes of the Erhai Lake (Own Source)

[7]He Tanzhen. (2016). Cangshan Mountain and Erhai Lake: Ink Qianqiu Painting Without String Wanguqin. Earth (06),84-85. doi:CNKI:SUN:DIQU.0.2016-06-031.

4.3.3 Wuhan Liangzi Lake

Date: 29th June. 2018

Liangzi Lake. Liangzi Lake is the freshwater lake with the largest water storage capacity and the largest area in Hubei Province.

It is the central lake of the Wuhan city circle and one of the best-preserved wetland reserves on the Asian Wetland Conservation List. It is listed as the strategic reserve water source of eastern Hubei.

Lotus pond, the sound of cordyceps and crabs in the water，Ecological Sound of Liangzi Lake Scenic Area, Wuhan, Hubei Because there is a total of 166 freshwater lakes in the Wuhan area, East Lake is the largest lake in Asia.

Liangzi Lake here is a branch of multiple waters in Wuhan. Because it exists in the urban landscape environment, it is considered as a special case.

However, the overall sound collection effect is not good, and it is covered by the sound of various surrounding cars.

At the same time, there is some plastic waste on the embankment of the lake due to low tide. The ecological environment is not as good as the first two lakes.

The waters are scattered, connecting multiple surrounding waters due to the relatively short collection time, the edited sound does not have obvious water sounds, but the cicadas cried the loudest.

🔊 LIANGSR006MS
Editing process; removed voices and the sounds made by the cars

🔊 LIANGSR007MS at the side of the scenic spot, I heard the call-in summer, and the area was empty.

Editing process; removed the short dialogues, only kept the sounds made by cicadas

It can be seen from the picture that the surrounding waters are not very clear.
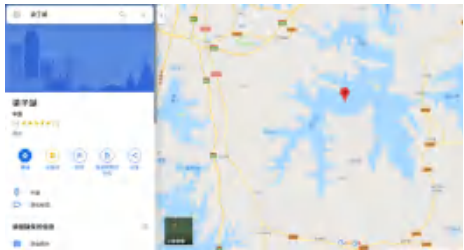
Figure. 4-25Liangzi Lake on Google Maps (GOOGLE MAP)

Figure. 4-27 Cicada Song at Liangzi Lake (Photo by Author)

Figure. 4-26 Liangzi Lake Scenic Area (Photo by Author)

Figure 4-28 The researcher photographed the ecological scenery of Liangzi Lake. (Photo by Author)

4.4 Soundscape research with animal sounds as background

The researcher has collected sounds along several routes and in many important areas of the Belt and Road, such as historical sites, cultural cities and other places. The most heard animal sounds were birdsongs, cicada songs in summer and the chirps of crickets in the evening.

Animals that live closer to humans, such as dog barking and cat barking, were not included in this study. Researchers are looking for animal sounds in a completely natural ecological environment.

Of course, birds and others coexist with humans in many places, but the collection of these sounds is accidental, sounds that suddenly enter the ears at a certain place.

When the researcher was collecting sounds at the Little Wild Goose Pagoda in Xi'an, one side was a musical landscape fountain with higher audio frequency, and the other was the quiet bells of a thousand-year-old temple.

Suddenly, several bird sounds were heard in the ears, which is extremely for a sound collector Excited, it shows that the ecological environment here is still relatively healthy.

In summer, the intensive cicadas can hear that the cicadas in Longmen in Luoyang have more patience than the cicadas in Dalian. Because the caves of the grotto have amplifying effects on the sound of cicadas, the researchers recorded it in decibels.

Figure. 4-29 On he minibus during the visit, with mountains on both sides of the highway
（*Photo by Author*）

4.4.1 Birdsong

The sounds of birds collected from several different regions were analyzed in details in this section. Birdsong in Dali, Yunnan Province, was selected as the representative riverside birdsong in southwestern China, compared to the birdsongs in the arid areas in the north, which are rarely visited by people.

Swallows' songs at Guazhou Ancient City Ruins

Date： 19th July .2018 Guazhou Ancient City Ruins weather with strong wind and strong sunshine
On the way to the Yulin Grottoes, the researcher passed an ancient city site on a grassy beach 2 kilometers southwest of Guazhou County, which is said to be part of several different sites in Guazhou.

There are still people living behind the ancient city wall. But the roadside ahead has been completely deserted. The overall building is built with rammed earth plates, the walls are rammed in sections, with obvious vertical joints, the rammed layers are tight, and the walls are solid. The plane of the city site is rectangular. There is a city gate in each of the southeast and the northwest. Due to historical reasons, the city wall was severely damaged, and there are only ruined walls. Still not losing the mighty power of the year.

There are various kinds of pottery and porcelain pieces scattered in the city, and there are thick cultural layers.

The ancient county town of Xiaguazhou County, Qilian Mountains, Gansu Province, where Xuanzang passed when he went west
The researcher and his team used two minibuses to be brought into the site by a local driver.

🔊 YULINSR001MS record date header

Editing process; keep the first half of the title and the strong wind and sunshine soundscape, and the second half of the character speech is removed

🔊 YULINSR002XY interviewed a local driver to explain the mountain

For the principle of excavating the mountain in Yulin Grottoes, the researcher added cotton

wool and egg whites to the mountain stone powder, then polished and painted. The red willow branches are a local plant, and the muralists use them as sculptures of the Buddha's head.

Compared with the principles of early house building in the South, there are similar practices

🔊 YULINSR002XY

Editing process: The sound editing was done to reduce noise and enhance the human voices, because the wind was very noisy, and several people conducted the interview at the same time.

🔊 YULINR003XY Xuanzang's Road to Guazhou
Editing process; keep the title, use XY mode sound editing, there are many swallows around.The audio of several special bird calls in the middle is analyzed together with animal sounds in Chapter 4, so I won't describe them separately here.

Figure. 5-30. The icture shows a researcher on the ground inside the ancient city of Guazhou. (Photo by Author)

Figure. 5-31. Current status of the site, the ancient city of Guazhou by researcher (Photo by Author)

Figure. 4-32 The image was taken by the researcher at Guazhou ancient city ruins (Photo by Author)

The sound range is wide, the human voice is very small in the ancient city wall, but the natural voice is very clear

It can be seen that the surface soil is soft, and the soil is severely sandy. This plant is black wolfberry, which was introduced to the West by he Arabs via the Silk Road.

🔊 YULINR007MS found that there are fragments of Han Dynasty pottery in the city

Editing process Figure. 5-31; retain the dialogue about the process of discovering Han Dynasty pottery

Guazhou Ruins weather, strong winds and strong sunshine. In Chapter 5, the researcher will give a detailed introduction to the ancient Ruins of Guazhou. Here, only the collected bird sounds are analyzed and recorded.

The square hole in the picture is a "rammed layer sandwich hole". In order to reinforce the wall, logs are arranged in an orderly distance when building the city wall, but these logs decay quickly and form cavities.

However, geese like to build nests

in such caves, which has a certain destructive effect on the walls, which is not conducive to the protection of ancient ruins. With the addition of wind and sand, it is not easy for these ancient civilizations on the Silk Road to remain today.

🔊 YULINR004MS Record the swallow's chirping sound, the editing process; the human voice is removed later

Figure. 4-33 The image shows the original spectrum of the audio piece displayed in Audition (Photo by Author)

The sound is 22 seconds long, and there is a dialogue sound in the first half of the bird song and the second half.
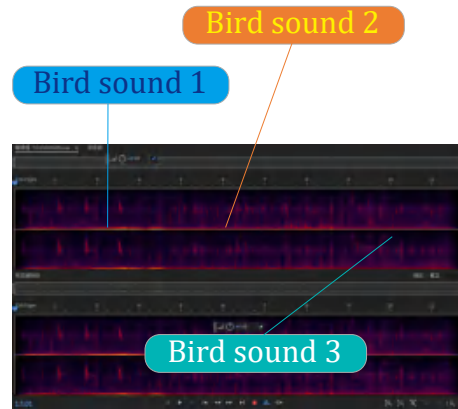
Figure. 4-34 Analysis on the three different birdsongs in Auditon.
(Photo by Author)

It can be seen from the figure that the regular sounds with a little amplitude in the first half were made by the birds, and the sounds with an obviously high pitch were human voices.

After voice screening, all human voices are deleted. Get YULINR004MS, a new file. 10.03 seconds long.
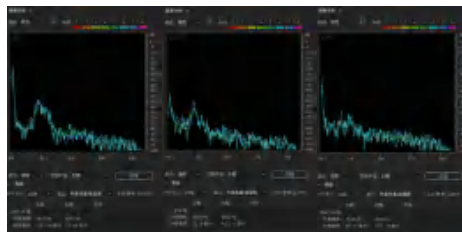
Figure. 4-35 Comparison of spectrums of birdsong 1, 2, and 3
(Own Source)

The analysis in the figure shows that the audio decibel of bird 1 was the highest, and the peak range lasted for quite a while.

Bird 2 continues to have more low and medium decibels, and bird 3 is the sound of a group of birds, so there are unequal decibels.

The three Hz bands are all intercepted from the original sound collection.

🔊 YULINR005MS Recorded the wild geese and various bird sounds

Editing process; no editing required
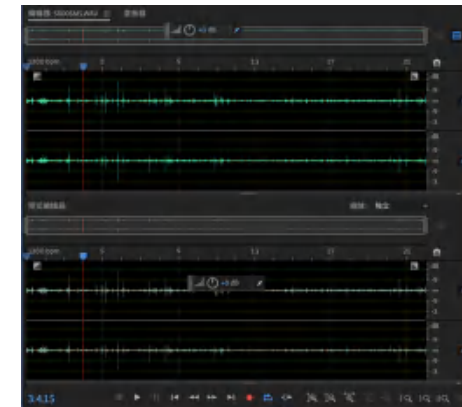
Figure. 4-36 The image shows the original audio curve of SR005MS.
(Own Source)

It can be seen from the figure that it was relatively quiet when the researcher was collecting the sounds, and there was almost no other sounds except for the birdsongs.

The total length is 20 seconds. Tap the sound in AU to listen repeatedly and record the peak

Table 4-1 birdsong decibel

SR005MS sound analysis
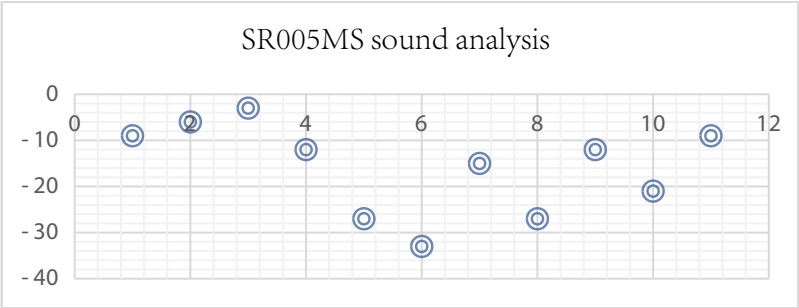
The table shows the YULINR005MS sound analysis of the different birdsongs.

Table 4-12 birdsong decibel 2

LAFmax : 57.6 dBA
LAFmin : 25.0 dBA
● LAF: 47.5 dBA ● LAeq: 47.4 dBA
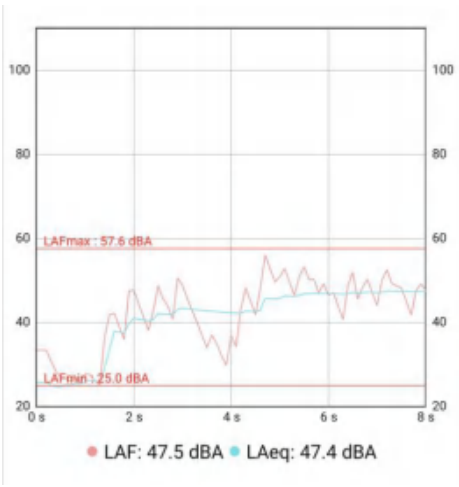
The spectrum of sparrow song curve in audio analysis software

♪ YULINR006MS Clear and short sparrow sound

Editing process; removed vocals and walking sounds, only kept the beginning part

Dali Erhai Birdsong

Analysis chart of sparrow songs in 8 seconds

♪ ERSR0022MS the sun could still be seen while it was raining, and there were birds singing in the Erhai Lake wetland
Kept the heading
♪ ERSR0023MS Birds and Seagulls
♪ ERSR0024MS seagull songs
♪ ERSR0025MS the sounds of waves and seagulls frolicking
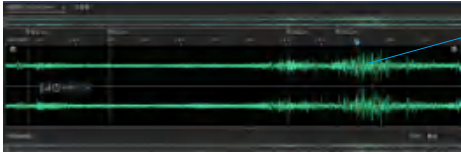
The bird sound marked out

Figure. 4-37 The birdsong appearing in the original audio of ERSR0025MS are marked
(Own Source)

Figure. 4-38 The image shows two different birds in Xiaguan, Erhai Lake
(Photo by Author)

◁⟩) ERSR0026MS The ecological conditions under the Erhai Sea Bridge were good
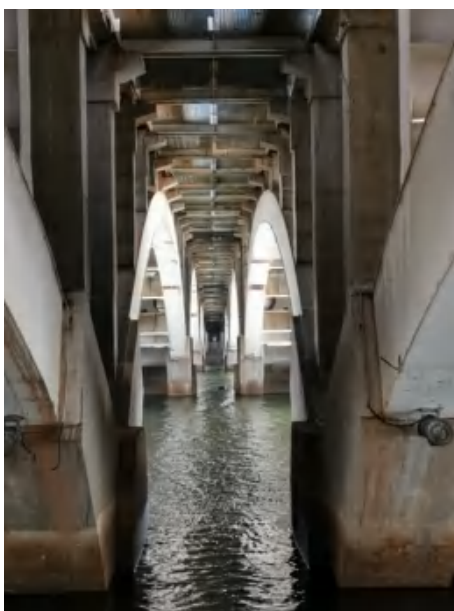
Figure. 4-39 The researcher took photos under the Erhai Sea Bridge
(Photo by Author)

◁⟩) ERSR0028MS Introduction of two different birds in Dali and of the geological information of Dali

Editing process; kept the sounds of birds and seagulls, edited separately, and removed the ending part

◁⟩) ERSR0030MS Erhai Beach Wind Sounds

Editing process; shortened, put together a few different points of the winds, the wind was louder in the ending part

Figure. 4-40 Screenshots of Luoyang Longmen cicada sounds (Own Source)

Figure. 4-41 Comparative analysis of field photos and sound patterns after the heavy rain (Photo by Author)

4.4.2 Cicadas'sounds

The cicada sounds are continuous and very loud. Two groups of typical cicada sounds were specially selected.

Luoyang Longmen Cicadas

The Longmen Grottoes in Luoyang are expounded mainly in Chapter V.

Here we separately extract the cicadas' songs before and after a heavy rain for sound comparison analysis.

🔊 LUOSR0028MS Summer cicada song. Cicada song graph interception shows that it is dense and different from birdsongs.

Editing process; no editing required

🔊 LUOSR0041MS the sound of water in the Yihe River on the side of the mountain combined with the insect sounds, the decibels were very high, and the water was quite turbid after a heavy rain.

Editing process; no editing required
Collection of cicada sounds after heavy rains shows that the sound frequency did not have great changes.

On the left were the cicadas under the sun, and the right were cicadas after the rain.

🔊 LUOSR0042MS bird calling
Editing process; after a strong insect sound, there was a distant bird sound, which was kept from the 5th to the 11th second, and the insect sound was gradually reduced.

Cicadas Sing in Xiaozhuwan Village, Wuhan

New rural ecological landscape at Xiaozhuwan Village, Wuhan, Hubei

🔊 LIANGSR0011MS Ecological landscape, with summer insects and birdsongs
Editing process; kept the first half of the sounds of insects and birds

It can be seen that at the village the ecological environment around the pond was better.
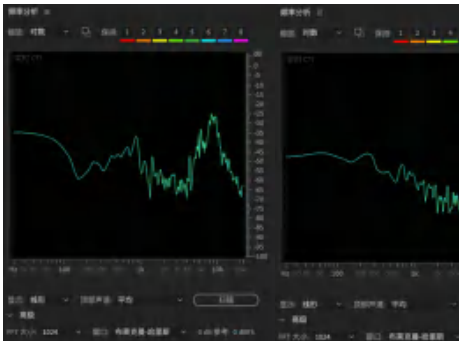
Figure. 4-42 Comparison of cicada's song curves before and after the rain (Own Source)
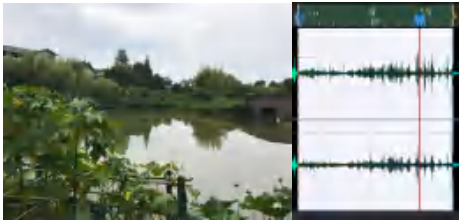
Figure. 4-43 Comparative analysis of field photos and sound patterns at Xiaozhuwan Village (Photo by Author)

The picture shows that the ecological environment of Xiaozhu Bay was relatively good, and there was a mixture of the sounds of birds, insects and cicadas. It is necessary to analyze the sounds in the software to find out the parts of cicadas.
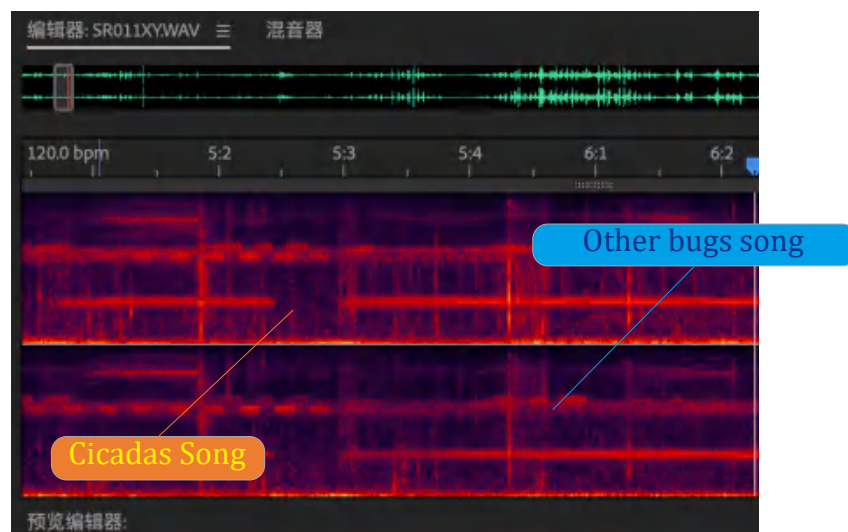
Figure. 4-44 Comparison of original SR0011MS audio frequency bands of different types of insects in Audition
(Own Source)
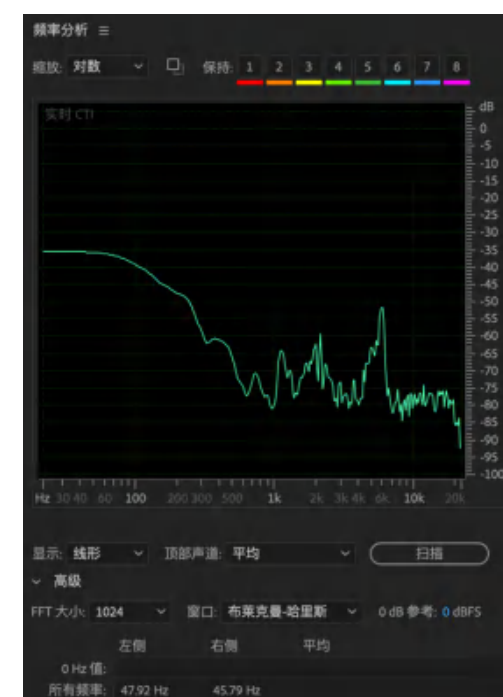
Figure. 4-45. Cicada song peak curve
(Own Source)

Figure. 4-46. Insects on Xichou Mountain during daytime
(Own Source)
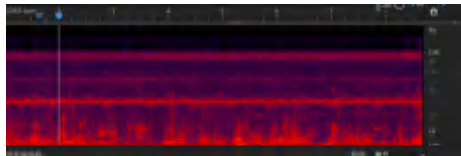
Figure. 4-47. The sound of insects in Malipo at night
(Own Source)

4.4.3 Bugs' sounds

There are many types of insects in nature, and this research was limited to the analysis of insect sounds, so it did not include any extensive research on insect categories. Most insects make sounds through the vibration of their wings.

The most typical insect sounds in summer are cicadas and cicadas. cricket. Because the human ear has a limited hearing threshold, some bugs outside this range cannot be heard. The calls of insects have a very regular rhythm and different frequency bands.

The sounds of insects collected by the researchers at night by the reservoir in Malipo County, Yunnan, show different decibel thresholds on the sound spectrum. The Soundscape signal of insects can be used as a seasonal time-sensitive sound signal.

> *There is an old saying in the Chinese language "You can't talk about ice with insects that live only in summer".*[8]

（Zhuang Zi Ji Shi，2006，n.d.）It is a metaphor that time limits

people's insights. It is also a metaphor for people's short-sightedness and ignorance of great principles.

In fact, most people who can understand this sentence are wise men.

When a four-season insect is talking, it is difficult for the summer insect to understand the scenery outside summer, just like Copernicus or Galileo after discovering new scientific discoveries, it is difficult to have people around them who understand them.

The blind laughed at it. Fungus can never distinguish between bass and treble. If summer insects can live for one more season, they may be able to take one more step, see the good and evil outside the circle, and know more.

Date: June 28th, 2020, Xichou town

The researcher's sound collection occurred in summer, daytime, and it was clear and sunny.
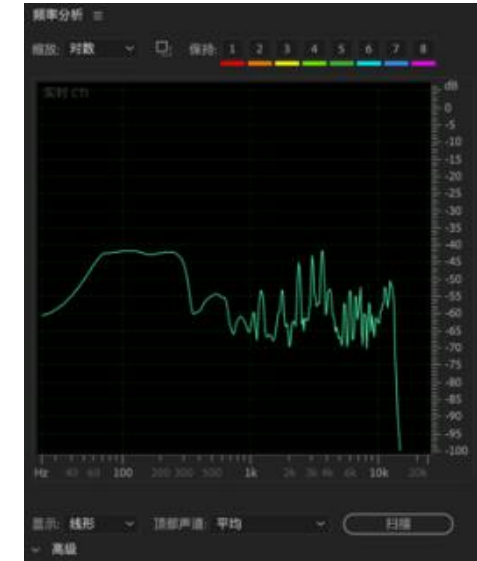
Figure. 4-48. Frequency curve of insects in Malipo Town
(Own Source)

[8]From "Zhuang Zi Ji Shi" is Zhonghua Book Company 2006
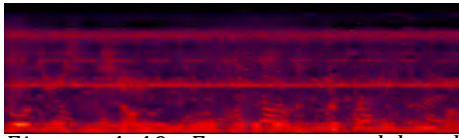
Figure. 4-49 Frequency and band diagram of two different insect sounds
(Own Source)

Figure. 4-50. The image shows another type of insect sound that suddenly appeared
(Own Source)

Yunnan has a high-altitude mountain. Therefore, the ecological environment of the insects is very good. You can see the sonorous and powerful interplay of the calls from the frequency spectrum. This kind of sound has a wide range of uses. It can be utilized through a variety of creative methods after processing.

Malipo insect sounds were collected at night; it was quiet and there was no wind. It was a sinking and kind of drooping sound. The researcher compared the frequencies and bands of two different insect sounds:

4.5 Natural environment soundscape analysis

According to the three natural environment sound landscape categories selected by the focus group discussion, the researcher conducted a summary and sound comparative analysis, respectively. Based on sound laboratory analysis data and sound detection software. Get a valuable comparison of the six locations surveyed.

4.5.1 Comparison of wind sounds

During the sound collecting process, because Riyue Mountain has been being a busy traffic hub, all vehicles had to pass slowly, so the researcher saw a long queue of automobiles. Tibetans in the lower mountains dressed up their yaks as a tool for attracting tourists, and there were many Tibetans putting their animals out to pasture in the distant mountains. The grass vegetation here is rather special, quite hard and sharp which makes it very uncomfortable to walk on.

Mingsha Mountain belongs to Gansu Province, with an altitude of 1,650 meters, and is a tourist attraction on the outskirts of Dunhuang Jiuquan City. Animal sounds include camels and swallows, accompanied by camel bells. The researcher's visit period was the peak tourist season; there were many tourists, so all the background noises involved tourists and sand rustling.There is a sound contrast between two sound collection points:

Four audio sound decibel value curves：

Figure. 4-51 Graph 1 in sound analyzing software,Graph 2 in sound analyzing software(Own Source)

Graph 1 The decibel is relatively low, and the curve value is evener and denser
Graph 2 has a high decibel level and a dense sound at the end of the curve.

Table. 4-13 Comparison of two different mountain soundscapes

Name of sound	Time	Location	Weather	Content	Average dB
RIYUESR013MS	Midday	Riyue Mountain	Sunny	Camel bell sound	51
RIYUESR014MS	Midday	Riyue Mountain	Sunny	Rustles, people	51.7
RIYUESR015MS	Midday	Riyue Mountain	Sunny	Wind and human voices on the grassland	54.2
RIYUESR016MS	Midday	Riyue Mountain	Sunny	Wind sound	59.8
MISR007XY	Nightfall	Mingsha Mountain	Sunny	Mingsha Mountain Crescent Spring Scenic Area	61
MISR008XY	Nightfall	Mingsha	Sunny	Camel bell	43.1
MISR009XY	Nightfall	Mingsha Mountain	Sunny	The sound of a glider in the desert	48.2
MISR010XY	Nightfall	Mingsha Mountain	Sunny	Camel bells across the desert rhythmically	38.1
MISR014XY	Nightfall	Mingsha Mountain	Big sun	Glider in the desert, birdsongs with people around	47.7

The test results show that the maximum peak of Riyue Mountain was the sound of wind, the glider curve changed the most, and the sound went from afar, then near then far away again.

Table. 4-14 Table of average decibel curve values
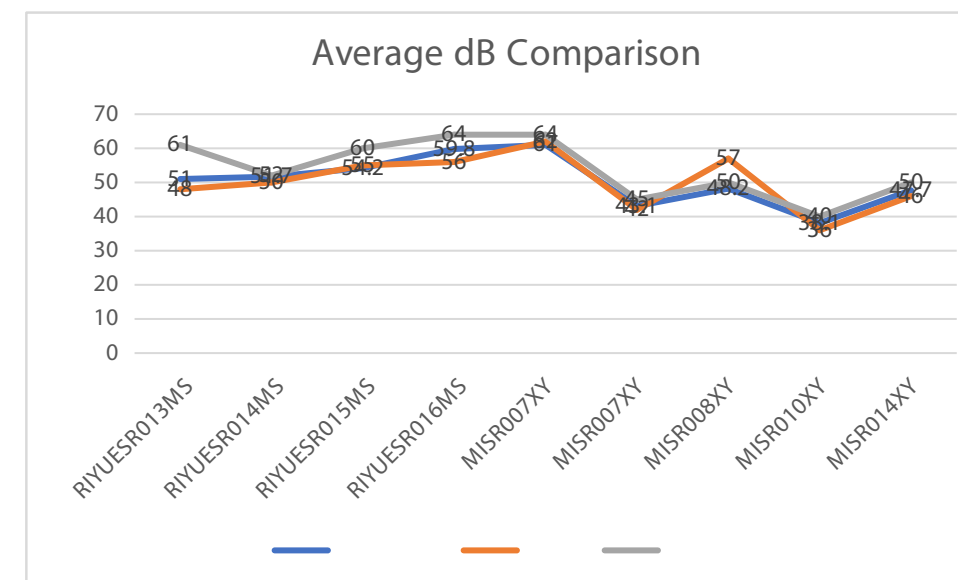
Average dB curve value table, we can see the orange line is the lowest. The grey line is the biggest, and the blue one is the average value.
(Own Source)

RIYUE name is From RIYUE Mountain, and the other is from MingSha Mountain.

Figure. 4-52. Screenshot of sounds made by waves of Qinghai Lake
(Own Source)

Figure. 4-53. The Sound of Erhai Sea
(Own Source)

4.5.2 Comparison of Water Sound Patterns

The researcher divided the sound collection into three locations: 8 audio pieces at Qinghai Lake, 14 at Erhai Lake, and 6 at Liangzi Lake

With regards to the water Soundscape, the three places studied are all waters with good aquatic ecological environment. Qinghai Lake is a plateau lake. Although Erhai Lake is called Erhai, it is also a plateau lake. Liangzi Lake is a large water area around Wuhan with abundant aquatic products.

The surrounding area of Qinghai Lake is relatively quiet, with occasional sounds of cars and motorcycles passing by, and because of the rich grass around it, there are also the sounds of herdsmen riding horses, behind which is the continuous Qilian Mountains, magnificent.

The vegetation around the lake is moist, with the sound of frogs, birds, and seagulls. Water waves increase or decrease according to tides and weather changes, and the overall water wave momentum is sufficient.

The Erhai Lake and its surrounding areas have been well developed for tourism. There are nice roads around the lake, in some places the roards are just a few meters away from the waterfront. Starting from Xiaguan, Dali, you can pass through areas such as Double Corridor and Digging Color. Each ancient town has its own characteristics. Double Corridor is famous for the dance artist Yang Liping.

The surrounding lake islands of Double Corridor can be landed by boat. The ecological environment around the Erhai Lake is relatively good. There are many bird species around the Erhai Lake wetland. The researchers collected three or four different types of bird songs. The sound of waves in Erhai Lake is much lower in decibels than Qinghai Lake.

Based on the sounds made by the waves hitting the shore, the softness of the soil on the shoreline of the lake can be estimated. The softer soil has a softer sound, such as the Erhai Sea; while the soil has stone deposits, the sound is clearer and higher; Liangzi Lake is more neutral than the two places, and the researcher collects the sound at the edge of a forest.

The analysis and comparison of the upper and lower figures show that the sound of the waves in Qinghai Lake was quite big, and the interval between the waves of Erhai Lake was longer.
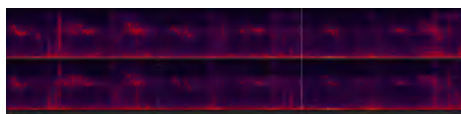
Figure. 4-54. The picture shows the songs of Guazhou swallows after amplification in Audition
(Own Source)

Figure. 4-55. The pattern and rhythm of Seagull songs at Erhai Lake
(Own Source)

4.5.3 Comparison of Animal Sound Patterns

Comparison of the song of Guazhou swallows and several bird songs of Erhai Lake

Comparing the birdsongs of the two places, according to the intervals and curves of the birdsongs, the one recorded at Guazhou sounds like a whisper.

In the picture below, the sound has a longer ending part, which is more like a typical sound of bird calling.

Kunming red-headed gulls were grabbing food. Different frequency curves represent different birds. It can be seen in the figure that the sound curves of the red-headed gulls can be high or low, which are as distinguishable as human voices.
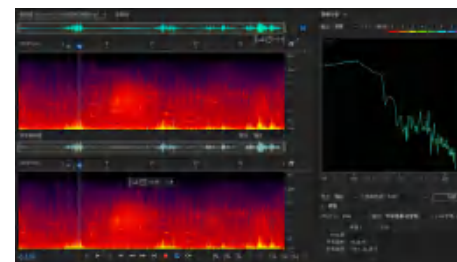
Figure. 4-56. The Atlas Curve of the Calling of Yunnan Red-headed Gulls in Audition
(Own Source)
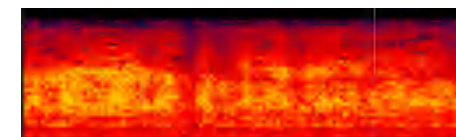
Figure. 4-57 Enlarged sound patterns of red-headed gull flock
(Own Source)
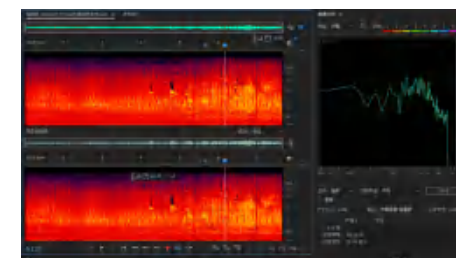
Figure. 4-58 Original Red-headed Gull Audio

4.6 Result

Researchers have visited various important scenic spots on the Silk Road many times, and the most noticeable sounds were the ones made by birds and cicadas. Usually when there is such a sound, he will look up to the sky. Perhaps this is why mankind finally invented the airplane to fly into the sky. As a creature in nature, I am very yearning for the sky in nature. At the same time, the presence of birdsong in an ecological environment indicates that the local ecological environment is still good. After the 2020 epidemic, birdsong with very different repercussions appeared on several routes the researchers passed every day, which are said to be some rare bird species. They become the masters of nature when humans hide in the concrete house.

In the western part of China along the Silk Road, there are many areas with only these creatures, surrounded by sand and wind, and vegetation in many places is relatively rare. Therefore, the recording and comparing of bird sounds is a very meaningful thing. Among the research methodologies proposed in the previous chapters, there is one called "collection at a certain location". One can monitor the same area according to different climates, seasons, and periods of a day, which is very suitable for recording the sounds made by various animals in the natural environment. It not only reflects the sound at the time, but also monitors seasonal climate changes. For example, when will the red-headed gulls appear near Kunming Dianchi Lake in 2020 and when will they go away? The appearing of these birds in 2021 in the same season is a recording of nature.

In the Soundscape of the Silk Road, there are many accidentally discovered sounds and the original patterns of these sounds. These are areas that were not covered by previous researches. In the process of data collation, the researcher can not only build sound data pools and sound maps, but also can reproduce sounds and images based on the original sounds and their patterns by applying modern multimedia technologies.
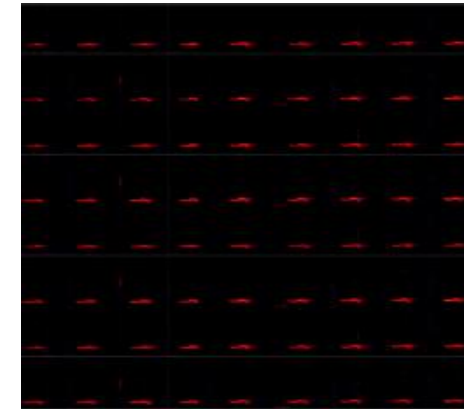
*Figure. 4-57 Photoshop image created by Author based
on the sound of birdsong
(Own Source)*

In the Figure. 4-57 image, you can see that the colors of a flock of birds are warm and full of energy.

In the Figure. 4-53 image, there's remarkable rhythm in it. Can the lonely bird that is telling or singing be understood as a sad temperament?

The researcher created a new birdsong pattern in Photoshop based on the Figure. 4-51. Can it be printed out as a contemporary artwork to participate in a sound exhibition?

For the same sound, what an artist may hear is a raw and exciting symbol of rose color, what a musician may hear is a melody with perfect rhythm, and what a biologist may hear is the birds' needs for more food. In the research on natural

environment Soundscape, the birdsongs were found to have notable regional characteristics.

In each of the areas visited usually exist the sounds of city life, sounds of the natural environment, and various sounds that were incidentally recorded and were related to modern industries, handicrafts making, intangible cultural heritage, and oral accounts. For different purposes, the sound collections are categorized by geographical locations and sound types in chapters IV, V, and VI.

This chapter records the natural Soundscape. Several important places on the Silk Road survived a long time and are still recognizable. Some have been weathered and are in poor conditions, and some have changed from unpopulated areas into lively travel destinations.

Along with the important locations on the Silk Road, the researcher recorded the sounds of mountains, water bodies, winds, plants, animals, etc., and analyzed the soundscapes of mountains, water bodies, and animals. The software Audition to observe the sound curves. The unique local animal calls and accompanying sounds of carried objects can increase the regional recognition and are of specific significance to particular soundscapes. For example, on hearing the sound of the camel bells in the desert mountains, a listener finds it easy to realize it's a sound from the desert.

If the birdsongs of swallows coincide, one can tell that there are deserts and water sources in this area.

Chapter V
Research on the Sound Landscape
of the Silk Road Cultural Symbols

5.1 Introduction

The research area in this chapter involves five of the important research areas and one of the sub-important research areas discussed by a third party. The fieldwork research area is vast, and the period also spans from 2017 to 2019. Therefore, the whole chapter is divided into three major sound research categories: urban cultural background sounds, historical and cultural sounds, and world cultural heritage sounds.

Table 5-1 Fieldwork Research on chapter V

Date	2017	2018	2018	2018	2018	2019
Areas	Shaanxi	GANSU	HENAN	QINGHAI	HUBEI	YUNNAN
Location	Point A	Point B,C,F,G,H,I,J,L,M	Point K	Point N	Point D	Point E
Groups	LINLIN WANG	MS.CANG	MR.LIAO			
Equipment	ZOOM H2M	Huawei Mate Pro 20				

Field work Investigation Record

LOCATION	NAME	DATE	DESCRIPTION OF THE SOUNDSCAPE		
Point A	1	16-21.1.2017	Xi'an City		
Point B	2	17.7.2018	Lanzhou City		
Point C	3	17.7.2018	Jiuquan City		
Point D	4	30.6.2018	Daywan Town		
Point E	5	20.2.2019	DALI ANCIENT City		
Point F	6	19.7.2018	GUAZHOU Ancient City		
Point G	7	22.2.2019	Xizhou Ancient Town		
Point H	8	19.7.2018	Yandan Devil City		
Point I	9	19.7.2018	Ruins of Xiaofangpan City		
Point J	10	20.7.2018	Ruins of Suoyang City		
Point K	11	13.7.2018	Luoyang Longmen Grottoes		
Point L	12	20.7.2018	Yulin Grottoes		
Point M	13	21.7.2018	Dunhuang Mogao Grottoes		
Point N	14	16.7.2018	Ta'er Temple		

The first part of each chapter is a general introduction to the direction of its research on the soundscape.

In the final research result, a more detailed data analysis showed the research area's sound. Through the research experience of Chapter IV, the research of Chapter V is more abundant in the sound numerical recording. After the field investigation in Chapter VI, the content of the voice that needs to be recorded is as Chapter 5.2 to Chapter 5.4.

5.2 Soundscape research with urban culture as its background

Xi'an was the capital of ten dynasties in ancient Chinese history. As currently defined by China, the West Market of Xi'an city was the starting point of the Silk Road. It has developed into the "Datang West Market Museum" and some antique shops in its surrounding area. It is a tourist attraction for Xi'an local people at weekend markets. The Muslim Street in Xi'an City is an important testimony of the multi-ethnic integration of the Silk Road. The entire Muslim Street is an area where Muslims live, and the Dapiqiang Temple on the street is a place of worship for Muslims. The Stele Forest Museum near the ancient city wall of Xi'an is the museum where the stone steles from the past dynasties of China are stored and exhibited. The original urban layout of Xi'an is similar to that of Beijing, and it is squarer. The original Tang Dynasty city wall has basically disappeared. The existing ancient city wall was built in the Ming Dynasty. The first place the researcher visited was Xi'an. In Chapter III, we took the sound collection process at Xi'an city as an example to design the research plan.

In northern China Lanzhou is a key area where ethnic minorities live. In the Chinese history, people passed through Xinjiang through Chang'an[1], Lanzhou, Dunhuang and other places to reach Central Asia. Lanzhou has long sunshine hours, cool summer weather, and the Muslim temples and night markets in the city are well preserved. China's mother river "Yellow River"[2] passes through Lanzhou City. The Zhongshan Bridge Scenic Area is set up in Lanzhou City. It not only serves as a public route through the Yellow River, but also sets up lighting and other scenery, which echoes the sound of the rapids of the Yellow River, forming a public art scene. The whole area has stronger characteristics than ethnic minorities in Xi'an.

Jiuquan city was also one of the must-be-passed places for the Silk Road. Because of the surrounding deserts and dry climate, the entire city has a yellowish tone.

However, Jiuquan City introduces water from snow mountains into the city, creating a waterscape, which feels like a Jiangnan water town. In summer, citizens enjoy the coolness by the water. The night market has never stopped since ancient times. Therefore, the researcher selected these three cities as the objects of the soundscape research with urban culture as its background.

Therefore, the researcher selects these three cities as the soundscape research with urban culture as the background.

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[1] Chang'an is the ancient name of Xi'an and is the first capital in history

[2] Because the Yellow River Basin is the birthplace of the Chinese nation, the Yellow River Basin has created。a splendid Xia and Shang civilization, so the Yellow River is called our mother river

Table 5-2 Xi'an City Sound Collection Track in January 2018
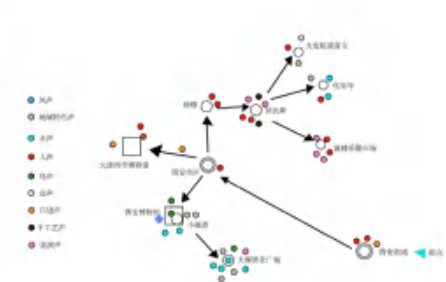
The Table was drawn by Author after the sound collection in 2018

Figure. 5-1 The image shows the night view of Xi'an Drum Tower
（*Photo by Author*）

5.2.1 Xi'an City Area

Date: Jan.16th , 2018
High-speed train—from Shanghai to Xi'an
Date: 17th Jan.2018
Muslim Street Night Market, Bell Tower Underground Passage
Table 5-2 Xi'an City Sound Collection Route in January of 2018

Date: Jan. 18th, 2018
The square in front of the municipal government, Wolong Temple, Stele Forest Museum, Wenchangmen Gate Tower
Date: Jan.19th, 2018

Date: 18th Jan.2018
The square in front of the municipal government, Wolong Temple, Stele Forest Museum, Wenchangmen Gate Tower

Date: 19th Jan.2018

In Huimin Street-Dapiyuan Mosque, Huajue Temple and other areas where Hui people live, because of the weather,

it has just snowed, so a lot of snow melting sounds have been collected.

Starting from the starting point of the market, the researchers slowly passed the crowds and market stall owners. The collected sounds of cries, cooking, silverware, and pastries produced by traditional workshops were mixed with the sounds of tourists from all over the world in Mandarin;

Various traditional and classical instruments made different sounds. The market of musical instrument was full of sounds - a mixture of talks, instrument testing sounds, ensemble playing sounds, radio sounds, and sales pitch from shop owners.

The diversity of musical instruments at the Xi'an musical instrument market represents the essence of the sound culture of the Silk Road Initiative, integrating musical instruments with different characteristics in areas where Han and ethnic minorities gather. Especially Muslim musical instruments. It is an important part of cultural exchange and integration in Northwest China.
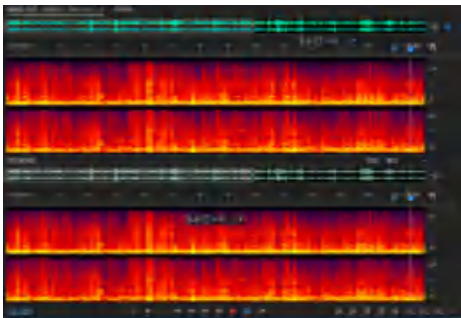
Figure. 5-2 Original sound spectrum of Muslim Street in the Audition software
（*Own Source*）

Figure. 5-3 Noise curve value of each frequency band
（*Own Source*）

Figure.5-4 Musical Instruments Market at the Drum Tower（Photo by Author）

Figure. 5-5 The image shows the layout of the Tang Chang'an City inside the museum, and the camel and pottery figurines

（Photo by Author）

Figure. 5-6 The image shows the stone stele at the beginning of the Silk Road of the Dang Dynasty sound collection is mixed with the sound of walking and the friction between the bag and the arm, and this decibel is very high and Noise at close range is difficult to remove in post-processing.
（Photo by Author）

Date: Jan. 21st, 2018
Xi'an Museum, Tang dynasty West Market Museum, Legends told by Taxi driver

The researchers collected sounds in the North Square of the Big Wild Goose Pagoda.

The North Square of Dayan Pagoda, as a public area before entering the Dayan Pagoda, has built a musical landscape fountain.

The sound of water is magnificent, and the sound of music is also very macro. The overall sound decibel collection can be seen in the H2N machine with the largest decibel.

For the surrounding ancient temples, the Big Wild Goose Pagoda and the Small Wild Goose Pagoda have formed a sharp contrast between dynamics and statics. On one side was the small wild goose pagoda bell, and the chirping of birds flying by from time to time, it was very quiet, and on the other side was the fountain
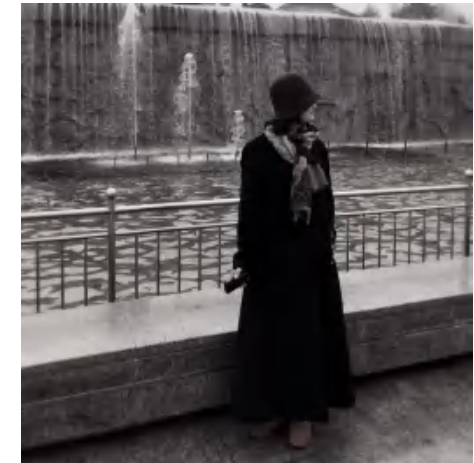
Figure. 5-7 The researcher collecting sound in front of the Big Wild Goose Pagoda Square
（the photo was taken by passers-by）

Figure. 5-8. Lanzhou Zhongshan Bridge lighting night view
（*Photo by Author*）

5.2.2 Lanzhou

The researcher took the high-speed train from Luoyang to Lanzhou in the morning, crossing from Henan Province to Gansu Province.

Because the collection time was around China's "Great Heat" [3]solar term, compared with the unusually hot in Luoyang, Lanzhou had already begun to cool down at night.

Date: 17th July. 2018
Lanzhou, by the Yellow River

🔊 LANSR001MS 9:30 PM by the Yellow River in downtown Lanzhou

🔊 LANSR0048MS Zhongshan Bridge is a landscape bridge on the source of the Yellow River in Lanzhou.

At the head of Zhongshan Bridge, citizens come out to enjoy the coolness at night and enjoy the coolness of the Yellow River
Editing process; no editing required

🔊 LANSR0048MS

Lanzhou Zhengning Road Night Market, a special night market in a concentrated area of national minority

Due to the geographical location of Lanzhou, there is plenty of sunshine and high temperature during the day.

Every evening, the night market generally starts at about 4:30 in the afternoon and lasts until two o'clock at midnight.

It combines a variety of delicacies. Lanzhou ethnic minorities gather, mainly Muslims, with men wearing white hats and women wearing veils.

🔊 LANSR0049MS A street in the night market on Zhengning Road, where Muslim folk customs are simple and there are many specialties

Editing process; segmentation

During the Ming Dynasty, sunflower seeds were introduced to China from the Americas on the Maritime Silk Road. They were processed from exotic plant seeds into a street snack. Researchers also discovered this kind of food in Europe and Spain, and similar processing methods.

Figure. 5-9 Sunflower seeds at the Zhengning Road Night Market
（*Photo by Author*）

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[3]According to the hottest solar terms of the year in the Chinese calendar

Figure. 5-10 Making yogurt snacks at night market （Photo by Author）

Figure. 5-11. Yellow River inside of Lanzhou City （Photo by Author）

🔊 LANSR0050MS Sounds of peddling and of the crowds at Lanzhou night market
Editing process; no editing required
Source of the Yellow River
Yellow River

🔊 LANSR0051MS Sound collection by the Yellow River Source of the Yellow River Source of the Yellow River (water was almost red)

The Yellow River is the mother river of the Chinese nation, and its sediment content is relatively high.

Editing process; water sound and human voices were divided into two parts

🔊 LANSR0052MS Sound and wind by the Yellow River

Editing process; only natural landscape sounds are retained

🔊 LANSR0053MS the sound of cultural landscape by the Yellow River, a group of people enjoying the coolness play and sing folk songs

Editing process; no need to edit, keep the original folk singing voice

Figure. 5-12 The image shows the Dunhuang Night Market （Photo by researcher）

5.2.3 Jiuquan City

The researcher took the high-speed train from Xining to Liuyuan Station.

After arriving at Liuyuan Station in the afternoon of February 17th, the researcher rented a car from the trainl station to Dunhuang Jiuquan City.

During the two-hour drive or so, both sides were all red Gobi deserts. The animal instinct for human existence is desperate. The sound began to emerge. Fortunately, after reaching the urban area of Dunhuang, snow water from high mountains was introduced into the Danghe River in Jiuquan City.

As an oasis in the desert city, it not only provides water for the citizens, but also enriches the place for citizens to enjoy the coolness and enjoy a walk after tea and meals. the coolness and a walk after tea and meals. The scenery resembles the life in a riverside city in Southeast China.

The Jiuquan area is located

between Altun Mountain, Qilian Mountain and Mazong Mountain (North Z Mountain) at the western end of the Hexi Corridor[4] in northwestern Gansu Province, with 93° ～ shu103°E and 38° ～ 43°N latitude. Jiuquan City is located between 98°20' ～ 99°18' east longitude and 39°10' ～ 39°59' north latitude. (Baidu，2011)

Date: 17th July.2018 Jiangnan City.

Dunhuang Night Market

The night market scene in Jiuquan City is very prosperous because of the long sunshine hours

DUNHSR028MS Head of Dunhuang night market and sound collection of bustling market scenes

Editing process; no editing required

◁)) DUNHSR028MS
Date: 18th July. 9：00 PM
After the sunset, Danghe Park in Dunhuang City

◁)) DUNHSR029MS title, sound of water in Danghe Park, interview with local residents. The source of water is snowy mountains and rivers

Editing process; the audio was divided into two, the first half is the park sound, and the second half is the sound of the interview

◁)) DUNHSR029MS title, sound of water in Danghe Park

◁)) DUNHSR029XY.01 Interview with local residents at the source of the Danghe River

Use 90-degree vocal editing to enhance the interview voice

◁)) DUNHSR030MS Dog barking in Danghe Park

◁)) DUNHSR032MS Danghe Park Sound Collection

The sound of children playing by the reservoir of Danghe Park
Editing process; the audio was divided into two parts, the first half is the sound of children playing, the second half is the sound of water in the Danghe Reservoir

Figure. 5-13 The image is night view of Danghe Park
（*Photo by researcher*）

[4]The Hexi Corridor, The Hexi Corridor is a pivotal section of the ancient Silk Road, connecting the trade and cultural exchanges of the three continents of Asia, Africa and Europe. The literature carried out can be consulted on the website: http://www.baidubake.com

5.3 Soundscape research with ancient towns and outstanding historical buildings as its background

The researcher selected several ancient towns of typical architectural characteristics. The architectural features of Dayuwan Town are that although it is located in Hubei Province, China, it has the architectural characteristics of the Chinese Hui School (Anhui Province), while the Dali and Xizhou ancient towns have the dwelling characteristics of ethnic Bai people.

At both places the researcher was able to find and interview local guides or inheritors of local architecture and customs.

The ancient city of Dali is close to southwest China and has plenty of sunshine. Only the integration of ethnic minorities and Han can have the meaning of surnames on Bai houses, which has been passed down from ancient China to the present.

Despite the changes in housing construction materials, the folk custom of portraying surnames on the walls has not changed; in the night market environment, silverware craftsmanship, wool felt craftsmanship, coffee culture, etc. are all characteristics, accompanied by the bar playing and singing the cheers of the whole old street Laughter can be seen everywhere. Including the enthusiasm of taxi drivers to answer questions.

The soundscape is mainly the rich cultural life of the small town. As a characteristic of the modernization of traditional Bai residences, the ancient town of Xizhou has been renovated as a whole and turned into an area with a modern business atmosphere.

Therefore, it is also studied as a model of excellent historical towns from ancient times to the present.

Figure. 5-14 Plan of Dayu Bay Village. Image courtesy of Liao Qipeng, China University of Geosciences
（*Plan by Liao Qipeng*）

Figure. 5-15 Dayuwan Town traditional House
（*Photo by researcher*）

5.3.1 Dayuwan Town

Date 30th June 2018
Heavy rain in the afternoon, after the rain in Huangpi District, Wuhan

Hui-style architecture is not a typical Hui-style building. There are changes in roof design and other aspects.

The entire village is a masonry structure. The village owner moved from Jiangxi to Hubei Province in the early Ming and Qing Dynasties. In Jiangxi Province on the Silk Road, merchants in the porcelain business gathered here and gradually formed a village.

Ming Dynasty historical building YuYing House

◁))) LIANGSR0012MS Title and raindrops hit the eaves of traditional ancient villages

Editing process; keep the title and rain sound, shorten the audio

◁))) LIANGSR0013MS the rain is getting

bigger and bigger at 5:30 PM

Editing process; removed the dialogue at the beginning

It can be seen from the picture that the stone ground after a heavy rain was all wet, but there was no rain. It shows that the drainage system in this area has been very good a long time ago.

◁))) LIANGSR0017MS Dialogue The pharmacy was built during the Qianlong period

Interview of the re-design architect of Dayu Bay Ancient Town

◁))) LIANGSR0018MS Cock crowing in the village, visit the inside of the old house

Editing process; separated the cock crow from the vocal introduction, removed the noise; and the birdsong were divided into 3 pieces

In the courtyard of the courtyard, it can be seen that the middle of the traditional Chinese dwellings is hollowed out to provide cool and ventilation in summer,
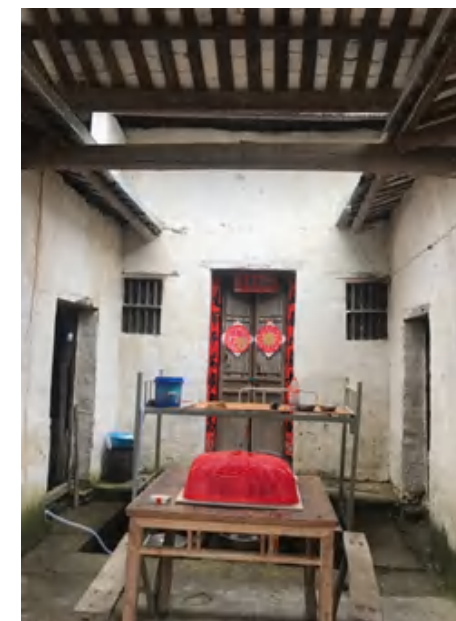
Figure. 5-16 Dayuwan Town traditional House，Inside the ancient building there is a courtyard and a listening rain pond
（*Photo by Author*）

Figure. 5-17 The picture is the traditional residential buildings in Dayuwan Town, the patterns and text symbolize good luck.

（*Photo by researcher*）

and the sound of rain can fall from the traditional courtyard.

🔊 LIANGSR0019XY horse head wall decoration introduction, background bird singing after rain

Editing process; the editing separates the singing of birds and the introduction sound, one piece of audio is cut into three pieces, and a part of the dialogue is removed later

🔊 LIANGSR0021XY

omeone began to sing traditional folk songs at about the 40th second, with cock crowing in the background

The second half talked about the origins of Dayuwan Town merchants

Editing process: Divided the song into two parts and separated the introduction dialogue

🔊 LIANGSR0022MS the call of magpies in the village. Due to the better ecological protection, magpies and other birds can be seen everywhere in the village

Editing process; interception of magpie calls

🔊 LIANGSR0023MS Two magpies calling friends and friends

Editing process; intercepting birdsong

🔊 LIANGSR0024MS bug sound

Introduction of the overall layout of the village and Feng Shui[5]

Editing process; the introduction of insect sound and human voice is divided into two sections to remove walking noise

---

[5]Fengshui is a set of scientific research theories used by the Chinese nation to choose residences, villages,c emeteries, etc. Ancient Chinese villages and buildings follow this set of theories, and no research will be c onducted here.

Figure. 5-17. The image shows a typical building of the Bai nationality in Dali
（*Photo by Author*）
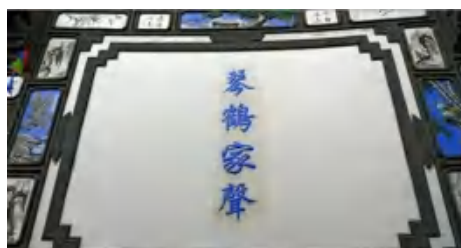
Figure. 5-18. Dali Bai Nationality Picture Wall with Symbolic text
（*Image source: http://www.sohu.com/ a/217149909_299194*）

5.3.2 Dali Ancient City

Date: 20th Feb., 2019
The researcher visited Dali Bai Autonomous Prefecture, Yunnan

🔊 ZHISR0031MS interviewed taxi drivers to introduce the architectural features of Bai people's houses and explained the relationship between the Bai family names and the pictures on the memorial archway

🔊 ZHISR0032MS and ZHISR0031MS were combined into one audio piece.

The taxi driver explained the relationship between the Bai family names and the pictures

> *Zhaobi, known as shadow wall in ancient times, is the specific application of ancient evil spirits culture, Fengshui culture, folk culture and landscape culture in architecture. It is an indispensable part of Chinese courtyard-style architecture.* [6] *(Li, 2017, p. 192)*

Zhao's general inscription "Qinhe Family Style",

Yang surnamed the book "Innocent Heirloom",

Zhang surnamed the book "Zhang Gong Bai Ren", as shown in the building with different patterns to express the four characters "Qinhe Family Style".

The allusion tells the legend that Zhao Bian was an official in the Northern Song Dynasty. In order to praise the ancestors of the Zhao family, Zhao Bian named the "Qinhe" for his frugal officials and simple traffic. Therefore, "Qinhe Family Style" and " Qinhe Voice" [7] are also inscribed in the name of Zhao. On the wall of others.

Dali ancient city nightlife

🔊 ZHISR0033MS Dali ancient city night market bar sound landscape

🔊 ZHISR0034MS local artists talk about the ancient city

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[6]Li Fengchun. (2017). Looking at the inheritance of Confucianism in the Bai ethnic area from the Zhaobi

[7]culture. Yunnan Confucius Academic Research Association. (eds.) Confucian Studies (Twenty-second Series)(pp.191-211). Yunnan Publishing Group , Yunnan People's Publishing House.

Figure. 5-19. Architecture of Xizhou Ancient Town
（*Photo by Author*）

Figure. 5-20 The image shows the researchers at the entrance of Xizhou Ancient Town, photo
（*Photo by researcher*）

5.3.3 Xizhou Ancient Town

Date: 22th Feb.2019

Xizhou Ancient Town, the old town was newly built, integrating many craftsmen's embroidery artworks into the street buildings

🔊 ZHISR0035MS Introduction to Xizhou Ancient Town

Editing process; noise reduction

All shops on the street were planned and desinged in a unified manner after the pedestrian street was reserved for ancient culture.

🔊 ZHISR0037MS local people chat voice

As can be seen in the above picture, due to the climate and living habits, pickled olives are popular local snacks, and they are also loved in Spain, Italy, France and other places on the European continent.

Even the pickling method and olive shape are roughly the same. Therefore, the circulation of food is also an important part of the circulation of goods in the Silk Road Initiative.

Editing process; no need to edit the beginning part, and the sound of knocking on the silver utensils was separated.

As a representative of the ancient town of Xinyan in New China, Xizhou Ancient Town has its internal structure, except that the overall village remains the original appearance, and the rest of the shops have been fully commercialized.

Therefore, the soundscape collected by the researcher is no different from the urban area.
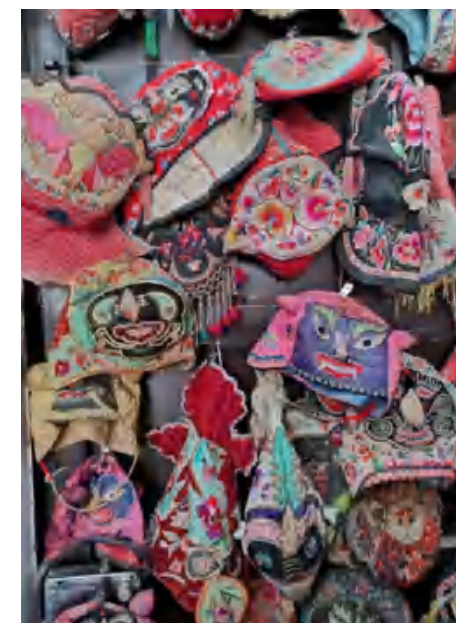
Figure. 5-21. At the antique shop in the ancient town of Xizhou, the Qing Dynasty embroidery
（*Photo by researcher*）

5.4 Soundscape research with historical sites as its background

The several sites visited by the researcher are characterized by strong sunshine, high wind pressure and long history.

The Silk Road was once glorious in history. Yadan Devil City and Xiaofangpan City[8] are in the same area. Xiaofangpan City was a key area of the ancient Silk Road. Suoyang city is famous for the "Suoyang Battle" in Chinese history.

Nowadays, a large area of the site remains relatively intact, which shows the urban planning in ancient times. Both Yumenguan Museum and Suoyang City Museum have historical documents available for inquiries.

The strong wind and sunshine that the researcher observed nowadays are basically similar to the historical Silk Road landscape in a sense. It can be understood that the sound collection and restoration across the ages reproduces the sound of historical sites on the Silk Road.

The wind and sunshine are there, although the prosperity of the year has faded, and it was once deserted in history; but with China's reform and opening up and the development of the Belt and Road Initiative, many historical places have been protected, and tourists have become the only human activities on these monuments.

Therefore, "reproducing" the prosperous and cultural sound landscape of the Silk Road, adding the sound of the original strong wind on the sand to the sound of human beings who are constantly visiting, making these sites come alive again.

In the chapter of sound media art innovation on the Silk Road, the researchers designed a soundscape exchange device based on the landform of the Yadan city wall, which better reflects the guiding significance of this research in reproducing the sound of the Silk Road.

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[8] small square castle

Figure. 5-22. Map of Yadan Geopark, The image shows the tourist guide map and the QR code for listening to the introduction of Yadan Geopark（*Photo by researcher*）
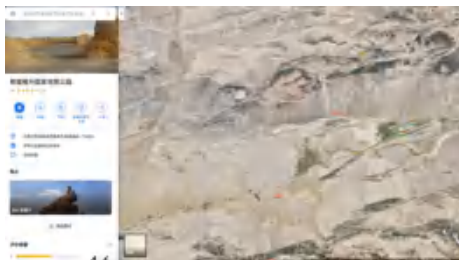
Figure. 5-23. Yadan Landform on Google Maps（*Image source: http://www.google.cn by Author.2018*）

5.4.1 Yadan Devil City

The researcher set off from Dunhuang and other teams took a bus directly to the uninhabited Gobi Desert.

Yadan Geopark[9]
Date: 19th July.2018
Yadan National Geopark

Commonly known as the Devil City, the Yadan landscape is the main landscape of the park and also a key protected geological relic.

The types of Yadan landscapes are ridge-shaped, wall-shaped, tower-column-shaped, and remnant-mound-shaped.

They represent the different stages of Yadan landforms from mature, mature to extinction. These rocks are smooth and steep, hundreds of meters high, and are minerals such as sandstone deposited 24 million years ago. Collect the sounds of rocks in the natural landscape with unique sounds.

Yadan National Geopark was at the bottom of the ocean in ancient times.

After tens of thousands of years of crustal changes, the surrounding desert areas have been eroded by storms and turned into various "Yadan" landforms.

The word Yadan is a raised hill in Xinjiang. mound. The stone color of the landform itself is gray, gray-green and ocher

Date: 19th July.2018 It rained then cleared up in the morning
Chinese Valentine's Day

It rained lightly, and then the weather was changed by rocket launching nearby.
The sounds of nature:
🔊 YADANSR003MS

Editing process; enhanced vocal noise reduction

The sound of wind, there are 12 gales
YADANSR004MS

Editing process; keep vocals, distant vocals

Figure. 5-24 The geological and landform picture enlarged by GOOGLE map, without any vegetation except the rolling sand dunes（*The image can be consulted on:http://www.google.cn by Author.2018*）

Figure. 5-25 The picture shows the researcher conducting sound collection under strong wind and hot sun（*the photo was taken by passers-by*）

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[9]Dunhuang Yadan National Geological Park, commonly known as Dunhuang Yadan Devil City. It is an important part of the Dunhuang West Line tourist attraction. It is 168 kilometers away from the downtown area of Dunhuang and located to the northwest of Yumen Pass. The scenic area is divided into north and south areas. It is about 25 kilometers long from east to west and 13 kilometers wide from north to south.
The literature carried out can be consulted on the website: http://www.baidubake.com

Figure. 5-26. Yadan Devil City
（*Photo by Author*）

Figure. 5-27 The image shows the researcher's self-photographed wind erosion valley, Desert flagship shape

（*Photo by Author*）

The voices of visitors and tourists on the beach next door are echoed because of the vast area, and the sound is relatively long.

The sound of a bus running over the sand from a distance

◁⫶ YADANSR005MS

◁⫶ YADANSSR007

Editing process; noise reduction, noise reduction, removed the middle speech and mobile phone interference, and kept the background empty sound

The staff in the museum introduced the landform and altitude of Yadan Geopark, the reason for the origin of the Devil City, the highest wind force is 12, and the sand dunes polish each other. It used to be an ancient river with exposed riverbeds. There are no residents or agricultural production activities around.

The shape of Shenzhou in the sand sea.

The weather turns from cloudy to sunny

The formation of the Black Gobi, the stone from the mountains in the north, was blown away by the strong wind, and the yellow sand on the surface was blown away, leaving large particles of stone on the ground.

After high temperature irradiation, the iron oxide on the surface of the stone was oxidized and appeared black, forming 2-3cm on the surface of the desert. The protective layer protects the Yadan landform.

The sound of stepping on the stone in the Gobi Desert

◁⫶ YADANSR006MS

◁⫶ YADANSR006MS

Editing process; "The original audio is cut into 006.1 and 006.2"

In this unique geographical environment, after the wind blows, the surrounding rocks are shaped like sculptures that have been carved, and the wind in the desert is the carving knife of nature, forming a natural surface dune, with a great temperature difference between day and night.

When the wind swept over the entire landform, it collided with the rocks and made a sound like howling ghosts and wolves, so it is also called the Devil City.

It is a part of Lop Nur and is a veritable no man's land except for tourists.

The researcher walks into the middle of each hill to collect sound

◁⫶ YADANSR008MS

Editing process; keep the wind and remove the vocals

◁⫶ YADANSR009MS

Editing process; accompanied by the sound of stepping on sand and wind, the length is shortened, and the gust of wind at the end is retained

Figure. 5-28 The left is the ruins of Xiaofangpan City, on the right shows the distant view of sound collection（*Photo by researcher*）
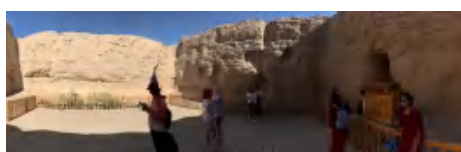
Figure. 5-29. The picture shows a 360-degree plan of the interior of Xiaofangpancheng（*Photo by Author*）

5.4.2 Ruins of Xiaofangpan City

Date: 19th.July.2018 afternoon cloudy
Ruins of Xiaofangpan City

🔊 YADANSR0010MS
Editing process; background sound, no editing required
People spoke in a vast area

🔊 FANGSR001MS
The ruins of the ancient city has been being etched by the desert sand; the sound of an abandoned landscape, the sound of the desert.

🔊 FANGSR0013MS Oasis in front of Sifang City
Editing process; the title is preserved, the front part of the vocals is preserved

🔊 FANGSR0012MS
Editing process; title retention, background music retention about 2 minutes and 40 seconds

🔊 FANGSR0013MS Oasis in front of Sifang City

Editing process; the title is preserved, the front part of the vocals is preserved
The sun is very high at 5:00 pm on July 19

Xiaofangpan City was commonly known as Yumenguan[10] in ancient times, and most of it has been weathered.

The remaining bottom buildings are protected by Yumenguan Museum, and wooden structures are built for internal support and protection to avoid collapse.

Because it is close to the Devil's City, there are only tour groups with sand and bus to visit.

The wind is loud

After being refurbished by the museum, Xiaofangpancheng will directly enter the sound system in the surrounding environment, artificially turning "high mountains and flowing water"

Soothing music is added to the background of the desert wind, so that

Figure. 5-30. Replica of Han Brick at Yumenguan Museum（*Photo by Author*）

Figure. 5-31 The tour guide was explaining the countries and regions that the Silk Road passed through in the ancient world（*Photo by researcher*）

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[10]Wang Xinyuan.,y Yao Ya., y Luo Lei. A Preliminary Study on Space Archaeology of Yumenguan City in the Early Period of the Han Great Wall in Huanghuaying Section——Also on Stein's Conjecture of T.XLII.d Fengsui as the Gate Location[J/OL].Journal of Northwest University (Philosophy Social Science Edition): 1-11[2021-02-27]. https://doi.org/10.16152/j.cnki.xdxbsk.2021-02-002.P.23

visitors will have a sense of mental coolness when they visit outdoors at a high temperature of nearly 40 degrees. This is also the spiritual pursuit of sound media artists in the arts for mankind.

The sun is very high at 5:00 pm on July 19

Xiaofangpancheng was commonly known as Yumenguan in ancient times, and most of it has been weathered. The remaining bottom buildings are protected by Yumenguan Museum, and wooden structures have been built for internal support and protection to avoid collapse.

Because it is close to the Devil's City, there are only tour groups with sand and bus to visit.

The wind is loud

After being refurbished by the museum, Xiaofangpancheng will directly enter the sound system in the surrounding environment, artificially turning "high mountains and flowing water"

Soothing music is added to the background of the desert wind, so that visitors will have a sense of mental coolness when they visit outdoors at a high temperature of nearly 40 degrees. This is also the spiritual pursuit of sound media artists in the arts for mankind.

🔊 FANGSR0014MS visitor voice, visitors tell history
Editing process Figure. 5-29; strengthen the human voice, reduce noise, the front part can be removed

🔊 FANGSSR0015MS the sound of wind in the background music
Editing process; keep wind and background music, vocals can be removed

Yumen Pass Museum

Yumen Pass Museum Introduc

🔊 YUMENSR0011MS Voice of the tour guide
Tour guide introduced Dunhuang and sang
🔊 DUNSR0016MS
Editing process; keep all phone noise

removed

🔊 DUNSR0022MS Guide tells the story of Dunhuang murals
Editing process; keep all the phone noise removed, and delete it later

🔊 DUNSR0026XY the tour guide tells the story of the king Taoist, the sound of the XY 90-degree channel is clearer

Editing process; keep all the phone noises removed, use XY to cut, and remove the zipper part of the noise later.

Figure. 5-32 The internal landscape of the Ruins of Suoyang City, it can be seen that the entire site has been severely weathered
（*Photo by Author*）

Figure. 5-33 Inside of the Suoyang City Museum，location relationship with the Silk Road
（*Photo by Author*）

5.4.3 Ruins of Suoyang City

Date: 20th July.2018 Suoyang City Ruins

Suoyang City, also known as Kuyu City, is located in the Gobi Desert southeast of Suoyang Town, Guazhou County, Jiuquan City, Gansu Province, with at an altitude of 1,358 meters.

The site is located in the center of the ancient oasis. It is an important political, military, economic and cultural center on the Silk Road between Jiuquan (Suzhou) and Dunhuang (Shazhou), Xitong Yiwu, Beiting, and Nantong Qinghai.

The city was built in the two Han dynasties and has gone through the Wei, Jin, Sui, Tang, Five Dynasties, Xixia, Yuan, and Ming periods. It has a history of more than 1,700 years.

It is located in the Gobi Desert southeast of Suoyang Town, Guazhou County, Jiuquan City, Gansu Province.

Founded in the Western Jin Dynasty, Guazhou was established in the five years of Tang Wude, and the Xiping Supervision Army was established in the Xixia period.

The city has been abandoned after the Xixia army withdrew.

It is an archaeological site integrating ancient city sites, ancient Buddhist temple sites, ancient canal systems, ancient reclamation areas, and tomb groups.

It preserves the most complete military defense system and agricultural irrigation water conservancy system in ancient China.

It also preserves the ancient A relatively complete military alarm system and urban building system. On June 22, 2014, it was included in the World Heritage List as a heritage site in the "Silk Road: Chang'an-Tianshan Corridor Road Network".[11]

◁)) YULINR0024MS Introduction of the Ruins of Suoyang City by the tour guide

Figure. 5-34 Suoyang City Ruins icon
（*Photo by Author*）

Figure. 5-35 Inner city site, The old city wall and the vegetation in the desert at the site of Suoyang City
（*Photo by Author*）

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[11]The literature carried out can be consulted on the website: https://www.yicai.com/news/5424163.html.2018

The surface is plastered with white ash, the upper part of the tower is covered with bowls, the bottom diameter is 11 meters, and the residual height is about 8.5 to 9 meters.

Figure. 5-36 Photo of the ruins of the Ta'er Temple [The Ta'er Temple is named for future generations, and it is not the same place as the Ta'er Temple in Section 5.4.]88 in Suoyang City
(Photo by Author)

Figure. 5-37 Photo of the introduction of the ruins of the Ta'er Temple
(Photo by Author)

Editing process; the middle part was removed, and only kept the tour guide voice

The site of the Ta'er Temple[1] in Suoyang City is a large Buddhist monastery site, which is presumed to be from the Tang to Xixia period.

The big tower in the picture is the main existing building of the inner temple. It is located in the center of the courtyard and is made of adobe.

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[1]The Ta'er Temple is named for future generations, and it is not the same place as the Ta'er Temple in Section 5.4.

5.5 Soundscape research with historical and cultural heritage as its background

The researchers selected Luoyang Longmen Grottoes, Dunhuang Mogao Grottoes, and Yulin Grottoes as the highest achievement of ancient Chinese grotto art. Among them, Luoyang Longmen Grottoes and Dunhuang Mogao Grottoes have been selected as world cultural heritages. Yulin Grottoes are adjacent to Dunhuang Mogao Grottoes and they were developed later so better preserved; the artworks in the caves, like the Mogao Grottoes, are extraordinary works in the history.It was developed later and is more well-preserved. The art works in the caves, like the Mogao Grottoes, belong to the fine art in history. As a representative of Tibetan Buddhism, Xining Ta'er Temple is located in Xining. It is a stop before entering Dunhuang. The well-preserved Buddha statues and paintings echo the Dunhuang Mogao Grottoes. Therefore, it is also used as a key research area for sound collection.

5.5.1 Luoyang Longmen Grottoes

Date: 13th July.2018
Longmen Grottoes, Luoyang, Henan Province, in the afternoon, heavy rain

The Longmen Grottoes are located on the cliffs of Longmen Mountain and Xiangshan Mountain on the banks of the Yishui River, 12 kilometers away from the southern suburbs of

Luoyang City, Henan Province, China [1]. They were mainly excavated from the Northern Wei Dynasty to the Northern Song Dynasty for more than 400 years. [13]
Longmen Grottoes are the esence of Beiwei dynasty and Tang dynasty，and the art treasures of an era of China.Longmen grotoes was taken as an example to analyze the authenticity of its political，economic and culture.

The conclusions were that，to exhibit the world heritage authenticity under tourism context，the interpretation system must be built completely to improve the

understanding of the authenticity of the world heritage，a variety of publicity methods must be used to improve the level of appreciation of visitors，and the consciousnes of protecting must be aroused to kep sustainable use of the world heritage. [14]

The researcher organized and briefly introduced the collected sounds in chronological order and also stated the sound content and the parts that need editing.

Figure. 5-38 The gate of Longmen Grottoes in Luoyang, Henan (Photo by Author)

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[13] The literature carried out can be consulted on the website: http: //www.baidubake.com
[14]Wei Ying. (2017). A study on the authenticity of the Longmen Grottoes, a world cultural heritage site in Luoyang, in the context of tourism. Journal of Xinyang Normal University (Natural Science Edition) (04), 587-590.
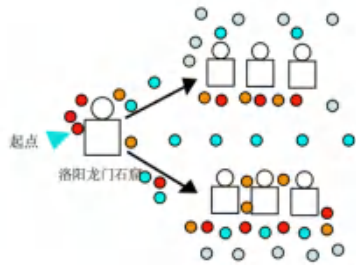
Figure. 5-39 Visiting Route (Own Source)

Figure. 5-40 QR code scan guide and audio introduction in the grotto (Photo by researcher)

Figure. 5-41 The picture shows an overview of the cave excavation (Photo by Author)

🔊 LUOSR0026XY head, Luoyang Longmen Grottoes, rainstorm background

Editing process; cut a little at the beginning and cut the walking sound

🔊 LUOSR0027XY After the rain, the sound of insects in Luoyang Grottoes is loud and the decibels are high

Editing process; keep the sound of insects, shorten the audio, and say that the water level in Longmen Grottoes is high.

Keep vocals and water sounds, audio is divided into two

🔊 LUOSR0028MS Tour guide speech accompanied by insect chirps.

Editing process; removed the ear-piercing insect chirp at the beginning; cicada sounds were well analyzed in Chapter IV and thus were all removed here as noises except for few ones that were kept as a season indicator.

🔊 LUOSR0031MS The First Buddha

Editing process: kept the heading

🔊 LUOSR0032MS The entrance to the Buddha cave

Editing process; no editing required

In the audio collecting process, for some confusing locations or when collecting similar sounds, one can take a photo at the time of the recording as evidence.

For instance, this photo tells that the audio number is SR0032MS, so the location can be quickly identified.

🔊 LUOSR0033MS Listened to the tour guide introducing the Buddha cave; mixed with echoes; introduction of the pattern of lotus algae roof carving; the Buddha cave was excavated in 680 A.D.

Editing process; kept the guide introduction sound and echo, removed the noise of bugs

🔊 LUOSR0033MS Cave 669 The inside of Laolong Cave has leaked rain; excavated in Tang Dynasty

Editing process; noise reduction

Figure. 5-42 TThe picture shows the researcher at the entrance (Photo by Author)

Figure. 5-43 Buddha Cave No. 1 (Photo by Author)

Figure. 5-44 The picture shows the one thousand Buddhas excavated on the side wall of the Buddha cave(Photo by Author)

🔊 LUOSR0036MS in front of the largest Buddhist cave

Human voices, insect sounds, and open sounds mixed

Editing process; noise reduction, shortened the audio piece

🔊 LUOSR0040MS River landscape

Editing process;kept after the 17th second; reduced noise, accompanied by the sound of wind introducing the river landscape

🔊 LUOSR0045MS Rain leaks in the grotto, workers were maintaining

Editing process; shortened, merged

LUOSR0044MS and LUOSR0045MS into one segment

Figure. 5-45 Inside of Laolong Cave 1 (Photo by Author)

Figure. 5-46 Inside photo of Laolong Cave 2(Photo by Author)

Figure. 5-47 The largest grotto in Longmen, Luoyang (Photo by Author)

Figure. 5-48 The image shows that half of the Buddha statue was eroded by rain, and the other half is well preserved. (Photo by Author)

*Figure. 5-49 The overall appearance of Yulin Grottoes
(Photo by Author)*
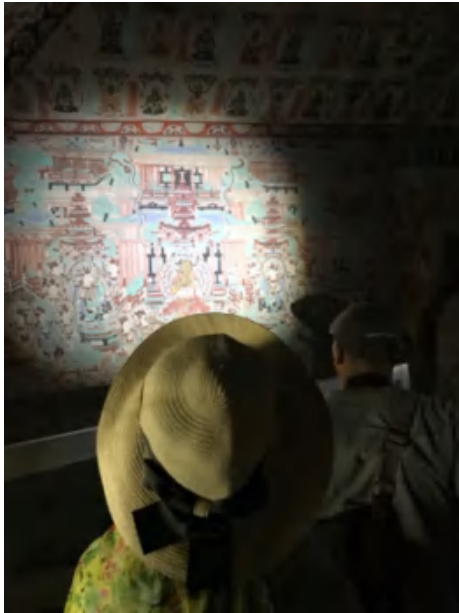
Figure. 5-50 The picture shows the guide selecting the Golden Buddha mural with a flashlight and explaining it to the visitors.(Photo by Author)

5.5.2 Yulin Grottoes

Date: 20th July.2018

Sound collecting of Yulin Grottoes site, started at 2:30 pm

Yulin Grottoes [15]1is one of the famous grottoes in China.

From the perspective of the cave form, content and artistic style, it is very similar to Mogao Grottoes.

It is a branch of the Mogao Grottoes art system and has always been valued by scholars at home and abroad.

Although there is no text to test the creation time, it is inferred from the cave form and related inscriptions that it was created before the Sui and Tang Dynasties.

Judging from the existing fresco styles and the inscriptions of tourists, the Tang, Five Dynasties, Song, Xixia, Yuan, and

Qing dynasties were all excavated and painted, and large-scale constructions were carried out.

The content and style of the Murals in Yulin Grottoes are inseparable from the Dunhuang Mogao Grottoes.

They are also called the sister caves of the Dunhuang Mogao Grottoes and are an important part of the Dunhuang Grottoes art system.

Yulin Grottoes and Dunhuang Mogao Grottoes are both under the jurisdiction of Dunhuang Museum.

There are not many open caves so far. There are caves on both sides according to the topography.

The other side is still under renovation and is not open. It is the sister cave of the Mogao Grotto system.

If you have special needs to see a cave only available for research, you need to pay for additional tickets.

*Figure. 5-51 Cave No.12, the QR code for listening to the information about the cave
(Photo by Author)*

*Figure. 5-52. Picture of Buddha Statues in Yulin Grottoes
(Photo by Author)*

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[15]The caves are excavated on the east and west cliffs of the canyon. There are 43 caves in existence, including 11 caves on the east cliff and 32 caves on the west cliff, covering an area of 112,850 square meters. The caves are divided into four types: through-hole central column, through-hole-type bucket roof, through-hole-type dome roof, and through-hole-type herringbone slope roof, with a total area of 4200 square meters. Shop 10856 of painted Buddha and Taoist pictures, and 244 painted Buddha and Taoist statues. Judging by the murals and inscriptions, among the caves, Cave 3 of Tang Dynasty, Cave 8 of Five Dynasties, Cave 13 of Song Dynasty, Cave 4 of Xixia and Yuan, and Cave 9 of Qing Dynasty.
The literature carried out can be consulted on the website: http: //www.baidubake.com

Because the researcher is one of the specialized research scholars, a special cave guide was hired with the help of Dunhuang Museum to give in-depth presentations on caves 3, 4, and 25.

The most famous of these is the Shuiyue Guanyin Cave, which supports the statues of the Guo family.

Cave 2 Water Moon Guanyin Picture, Cave 3 Manjusri Change, Samantabhadra Change, Western Pure Land Change, Thousand Hands and Thousand Eyes Guanyin Change. Cave 4 Sakyamuni, Duobaoman Chaluo, Bukong Suoman Chaluo, etc. are works that represent the high artistic level of this period.

The guide is a native of Guazhou and a staff member of the Yulin Cave Museum. The explanation was very informative and clear.

◁ YULINSR008MS Yulin Cave Ruins

Editing process; kept the heading only

◁ YULINSR009MS Ruins of ancient river channel in Yulin Grottoes

Editing process; keep the head and back of the water and wind

◁ YULINSR009XY Yulin Cave Museum staff explain in the cave

Editing process; kept the heading and the sounds of the water and wind

Cave 11 Qing Dynasty Cave

◁ YULINSR0011XY Y The guide from Yulin Grottoes Museum explained the flying goddesses in the cave, the images of whom had not been repaired at all.

The demeanor of Feitian's various instruments, explaining that people need clothing, Buddhas need gold clothing

Editing process; no editing required

◁ YULINSR0012XY The guide explained the raw materials of the mural's primer; straw was added to the mural itself.

Editing process: removed some noise at the ending part

Cave No.12 was excavated in the Five-

Dynasty period,

◁ YULINSR0013XY the exfoliation of glutenite and the principle of protection and restoration of material cultural heritage

The principle of restoration is that the water seepage of the sandy conglomerate is serious, and the cement protection in the 1980s caused serious shedding. Recently, a second layer of roof protection has been added to the cave to prevent rain erosion.

The Song Dynasty Grottoes have mainly white and green colors - a cool tone. The color comes from Dunhuang local malachite, and its color does not fade,

The tops of the frescoes in the Song Dynasty were dominated by decorative patterns, which were related to the people's aesthetics in the Song Dynasty. Editing process; some noise in the middle was removed.

Figure. 5-53. Pattern on the roof of Yulin Grottoes (Photo by Author)
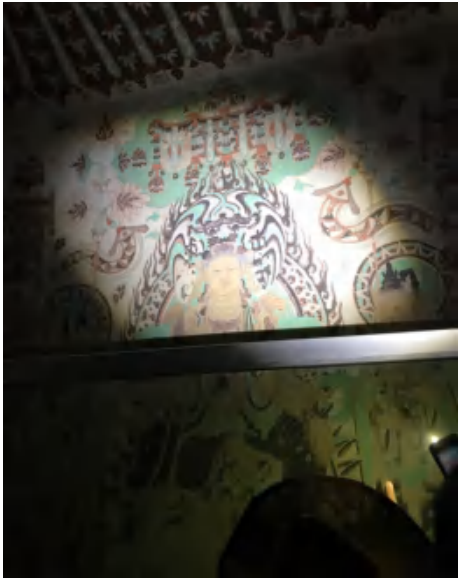
Figure. 5-54 Photo of Cave 19 (Photo by Author)

◁»）YULINSR0013XY the painting method and style of bodhisattva statues in the Tang Dynasty, the symbolic meaning of the white elephant with six teeth

Editing process; he mobile phone noise in the middle was removed, and the discussion voices deleted

◁»）YULINSR0014MS Manjushri's statue face is slowly oxidizing and turning black.

◁»）YULINSR0015MS cave in the early Tang Dynasty

Editing process; removed the ending part

The picture shows a statue of a Bodhisattva in the Tang Dynasty with three inlays on the Buddha's neck and a flame pattern on the back. During the Tang Dynasty, there were very powerful painters in Dunhuang who came to Dunhuang via the Silk Road, and some senior officials were exiled from Chang'an City to Dunhuang and brought their own painters.

Many high-ranking officials went to Dunhuang to open caves to make statues.

◁»）Introduction to Cave 19 of YULINSR0016MS Cao Yuanzhongkai, whose portrait is well preserved, is the most beautiful man in Yulin Cave. It is 1.73 meters tall and has a Song Dynasty official hat painted on the mural. And draw its contemporary status symbol. At the time, Guazhou district officials.

Editing process; remove the sound of the phone call at the end

◁»）YULINSR0018MS 25 cave excavation period, introduction

Guazhou Jiedu Envoy, a native of Guazhou.

Editing process; removed the short irrelevant dialogue at the beginning

The champion of Dunhuang Art Grottoes is better preserved than Mogao Grottoes and is famous in the world.

The background of the seventh edition of the Silk Road Flower Rain is also this

immeasurable change painting. The color changed slightly in the 70s.

The painting method of Bodhisattva on the Silk Road passed through Nepal to Tibet to form Mandala Bodhisattva.

The perspective method of the painting is scatter perspective method. This was many years before the West started using it

◁»）YULINSR0019MS Introduction of traditional paintings, introduction of character poses and gestures. Kunlun Nu's introduction expressed that the artisans of painting had walked on the ancient Silk Road.

The inner world of the painter himself is reflected in the murals. Some even have folk paintings.

For example, "Yangchang" in the farming period.

Editing process; keep all, remove the tail mobile phone interference

Figure. 5-55 Picture of the statue of the king in the cave
(Photo by Author)

Through the playback of the sound, a pair of exquisite murals appeared in front of me.

These paintings were also the early prototypes of comic strips. This is the charm of sound art.

At the same time, it can provide an opportunity for art appreciation for some disability who have art appreciation needs but have vision problems.

◁᛫ YULINSR0020MS

◁᛫ YULINSR0021MS Esoteric painting

◁᛫ YULINSR0022M Buddha statue representative introduction, five Buddhas.

◁᛫ YULINSR0023M 4 minutes 50 start to discuss the order of introduction

The order of visiting the caves was: starting from Yulin Grotto No.25 that was done in Middle Tang Dynasty, then cave No.3 - introduction of the Water Moon Bodhisattva, the third cave is an introduction to the Moon and Moon Bodhisattva, the second cave is introduced, and the fourth cave is Tibetan Buddhism.

5.5.3 Dunhuang Mogao Grottoes[16]

Date: 21th July.2018

Although the Mogao Grottoes have been invaded by nature and looted by human beings, through the long history, still some caves survived and they are from ten dynasties including the Sixteen Kingdoms, Northern Wei, Western Wei, Northern Zhou, Sui, Tang, Five Dynasties, Song, Xixia, Yuan, etc. There are 492 murals with more than 45,000 square meters of murals and two thousand colored statues. They are the greatest treasure house of Buddhist art in the world. If the murals are arranged, it can stretch for more than 30 kilometers, making it the longest, largest, and richest gallery in the world.[17]

Mogao Grottoes is an art palace that combines ancient architecture, sculptures and murals. It is especially famous for its colorful murals. Dunhuang murals are rich in capacity and content, unmatched by any religious grottoes, temples or palaces in the world today. Looking around the cave and the top of the cave, there are paintings of Buddha, Fei Tian, Ji Le, and fairies everywhere. There are paintings of Buddhist scriptures, scriptures and historical sites of Buddhism, as well as paintings of gods and monsters and portraits of supporters, as well as various exquisite decorative patterns.

The sculptures of Mogao Grottoes have long been famous. There are 33-meter-high seated statues, as well as small Bodhisattvas measuring more than ten centimeters. Most of the caves contain statues. There are so many statues, which can make a large sculpture hall.

When the researcher collected the sounds of Dunhuang Mogao Grottoes, it was the

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[16]Mogao Grottoes, commonly known as the Thousand Buddha Caves, is located in Dunhuang at the western end of the Hexi Corridor. It was built in the Fujian period of the pre-Qin Tianwang in the Sixteen Kingdoms. It has been constructed in the Northern Dynasties, Sui, Tang, Five Dynasties, Xixia, Yuan and other dynasties, forming a huge scale, with 735 caves, 45,000 square meters of murals, and mud There are 2415 high-quality colored sculptures, which are the largest and most abundant Buddhist art sites in the world. The literature carried out can be consulted on the website: http://www.baidubake.com 2018
[17]The literature explain can be consulted on the website: https://www.mogaoku.net/

peak tourism season.

Each cave was full of people, mixed with different tour guides talking about the caves., the simulation cave display designed by the Dunhuang Research Institute using multimedia technology, and the conversion of the traditional murals of the Dunhuang Mogao Grottoes, such as notebooks, audio e-books, silk scarves and other small products are impressive.

On the contrary, the effect in the overall sound collection process is not very satisfactory. The echoes of caves and the noisy sounds of tourists caused the complexity of the post-processing of materials.
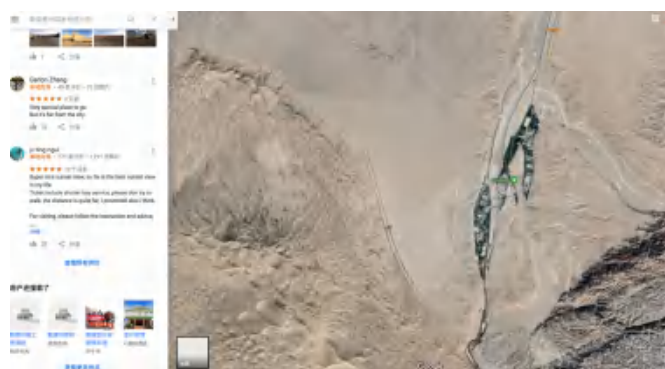
Figure. 5-56 The image shows the location and shape of
Mogao Grottoes on Google Maps
(*Image from http://www.google.cn.2018*)

All of the following audio files were collected on-site at Mogao Grottoes, with explanations of local guides and responses of the tourists, local accents of Dunhuang, sounds of winds and ancient ruins. Since the data collected in the caves are quite precious, no editing was done to them. Many caves in Dunhuang Mogao Grottoes are seriously oxidized in color.

Therefore, fewer and fewer caves are opened for tourists. At the same time, a

virtual reality museum is established. You can experience every corner of the cave in the museum's viewing hall in a 5D way.

🔊 MOSR001MS	🔊 MOSR008MS
🔊 MOSR002MS	🔊 MOSR009MS
🔊 MOSR003MS	🔊 MOSR0010MS
🔊 MOSR004MS	🔊 MOSR0011MS
🔊 MOSR005MS	🔊 MOSR0012MS
🔊 MOSR006XY	🔊 MOSR0013MS
🔊 MOSR007MS	🔊 MOSR0014MS

Although the overall size of Mogao Grottoes is huge, more than 85% of the caves are less than 25 square meters.

The increase in the quantity of tourists has changed the temperature, humidity, and carbon dioxide concentration of the caves,, affecting the preservation of murals and colored sculptures, and increasing the protection of cultural heritage. Difficulty.

In 2014, Dunhuang City invested in the construction of the Mogao Grottoes Digital Exhibition Center, which digitally upgraded the tourist routes of Mogao Grottoes, and the tourism content changed from a single cave visit to a combination of "digital experience + cave tour".[18] （*Yu,2020,p. 24*）

Therefore, the researcher's using sound media art to record the grottoes was also a protective method of studying the Mogao Grottoes. The Dunhuang Research Institute uses the Chinese Internet platform to protect the grottoes with digital multimedia art.

Through a sound media library to be established, we can measure the maximum peak value of visitors of the day by using the digital sound pressure values, so as to protect the Mogao Grottoes.

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[18]Yu Tiange. (2020). Research on the Digital Protection and Utilization of Cultural Heritage: Taking Dunhuang Mogao Grottoes as an Example. Cultural Industry (27), 23-24. doi:CNKI:SUN:WHCC.0.2020-27-009.

Figure. 5-57 the image shows the sound collection trajectory and sound types inside the Ta'er Temple
（*Own Souce by Author*）

Figure. 5-58 Colored painting of wooden structure building in Ta'er Temple
（*Photo by HuangGeng，own source 2018*）

5.5.4 Ta'er Temple

Date:16th July.2018

Qinghai Xining Ta'er Temple

Ta'er Temple is located in Rushaer Town, Huangzhong County, 25 kilometers southwest of Xining City, Qinghai Province, China. Founded in the 39th year of Jiajing in the Ming Dynasty, it is one of the six major monasteries of the Gelug Sect of Tibetan Buddhism and the birthplace of Tsongkhapa, the founder of the Gelug Sect.

Xining is 2,295 meters above sea level

The Ta'er Temple contains rich cultural tourism resources, rich in ethnic and regional. characteristics, and has become a treasure of Tibetan Buddhism culture.Chen Ya-yan, C. (2003). The Exploitation and Utilization of Cultural Tour Resource of Ta'er Temple. Nationalities Research in Qinghai.P.36

Regarding the field research of the

Ta'er Temple, which is located at a quite high altitude, the researcher had not studied Buddhism deeply and had gone there admiringly with the purpose of collecting sounds

The researcher took a bus to reach the Ta'er Temple

TASR001XY 909 Bus No.909, bus stop name reading

Editing process: kept the electrical voice of bus stop name reading; kept the middle heading

◁ᐤ TASR002XY the entrance of the Ta'er Temple，the birthplace of Tibetan Buddhism, the ringtones were kept, the sound did not need to be strengthened, and the human voice was removed

◁ᐤ TASR004XY the main hall of Ta'er Temple, the sounds made by visitors inside

Editing process: reduced noise

The second half of the storytelling guide is divided into 4.2

Figure. 5-59 Eight Pagodas of Tathagata at the Gate of Ta'er Temple
（*Photo by HuangGeng，own source 2018*）

Figure. 5-60 The main big bell in the Ta'er Temple
(Photo by Author)

Figure. 5-61 The image shows the prayer wheel taken by the researcher in the Ta'er Temple
(Photo by Author)

TASR004XY

🔊 TASR004.2XY
Editing process; shorten

Prayer wheel

In Tibetan Buddhism areas, you can often see Tibetans turning a prayer wheel with scriptures kept in it, chanting the six-character scripture "oum ma ni be mei hom". Turning a prayer wheel is considered equal to reciting scriptures and is therefore one way of religious practice.

In addition to the small prayer wheels that people shake in their hands, some huge prayer wheels are often seen around the temples.

The mantras engraved on this type of prayer wheels and the scriptures inside are more than those of the small prayer wheels. There are many more prayer wheels, so turning a large prayer wheel can accumulate higher merits. The warp drum must be turned clockwise, not counterclockwise.

🔊 TASR007MS On-site sound collection of prayer drum

Editing process; made the first part start with the sound of turning the prayer wheel and end with the sound of zipping up.

The second part is about the tour guide talking about the Buddha of Future.

🔊 TASR009MS Introduction to Ta'er Temple Mural, why does not fade for a long time, the application of turquoise

Editing process: kept from the 44th second; removed the sounds of walking and some voices in the middle; kept the speech of the guide in full.

The murals in the inner temple are protected as cultural relics and are not allowed to be photographed

🔊 TASR0010XY Temple of Wealth

Editing process; the title of Jiujiandian Temple was kept from the 30th second; the guide explained how to worship the God of Wealth

🔊 TASR0010XY Temple of Wealth

Editing process; started at 13'16", kept the sound of Buddhists kneeling and praying the sound of Buddhists kneeling

Figure. 5-62 Decoration on the beams of the temple
(Photo by Author)

Figure. 5-63 The picture was taken by the researcher on the murals on the outer wall of the Ta'er Temple. (Photo by Author)

Figure. 5-64 The praying monks at Ta'er Temple(Photo by Author)

and praying for blessings

🔊 TASR0012MS Birdsong in the temple

Editing process; kept all the bird sounds and removed the human voices; there were two different bird sounds in it.

Ghee flower[19]

Ghee flower is one type of colored sculptures, the making of butter flower is mainly taught by monks in person and inherited by word of mouth. The butter flower work is a work of art that should not be preserved for a long time, so the process of how to make it in the sound record and inheritance is extremely precious.(baidu.2019)

🔊 TASR0012MS The last part was the sound of building the new hall

Editing process; The sound of building the new hall was taken out separately as 12.2 🔊 TASR0012.2MS

The monk who makes butter flowers needs to dip into the cold water while pinching the sculpture in the cold winter

Figure. 5-65 A manhole cover with scriptures at Ta'er Temple (Photo by Author)

Figure. 5-65 a Ghee flower flower statue, in the new room of the Ta'er Temple. (Photo by Author)

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[19]Ghee flower is one of the "Three Wonders of Art" in Ta'er Temple

5.6 Comparative analysis of cultural landmark sound landscape

The researcher divided the sounds collected along the Xi'an - Lanzhou - Dunhuang northward route into three categories: sounds of the city bazaars, sounds of the public areas and sounds made by human-city interactions; the researcher also had them analyzed. In the urban public areas where there were bazaars, there were more dialects, local customs and practices; the peaks of relevant sounds appeared one after another, and there was a mixture of the peddling of vendors and voices of visitors and diners. Where there were waterbodies, there were more human activities and denser sounds.

At the same time, in the areas around the waterscapes, usually there were people taking walks after dinner, walking their dogs or doing some "public square dancing". These are a manifestation of the prosperity of the urban landscape in the key areas on the Silk Road

5.6.1 Comparison of bazaars in the context of urban culture

The Muslim Street Night Market

As the capital of the northwestern region of Xi'an, is an area where Hui and Uyghur ethnic groups live.

There are Muslim temples such as Dapiqiang Temple and Huajue Temple around the Muslim Street Market. The area where the Muslim Street is located is a historical district, north of the Drum Tower, with architectural style It has architectural features during the Ming and Qing Dynasties, that is, it is an area inhabited by ethnic minorities in history. The Muslim Street is open all day.

It has a different feeling during the day and night. It sells ethnic minority characteristic ornaments and Hui characteristic snacks, as well as special beef and mutton shops.

The crowds during the day contrast with the prosperity at night. When the researchers visited, there was heavy snowfall, so many voices contained the sound of melting snow.
Beating

Table 5-3 Background values in 10 points and 6 different Hz.

Point/Hz	125	250	500	1K	2K	4K
1	35	31	32	31	32	39
2	38	34	37	33	28	39
3	40	31	35	32	36	40
4	39	30	36	37	32	41
5	36	31	37	35	27	38
6	31	30.8	35	37	31	37
7	31	34	48	31	35	47
8	42	41	39	34	41	48
9	36	35	38	47	33	44
10	44	38	40	36	30	41
Average	37.2	33.58	37.7	35.3	32.5	41.4

The data were obtained from The Muslim Street Night Market in different point position.

Table 5-4 dB comparison of 10 points in Musilin Street Market
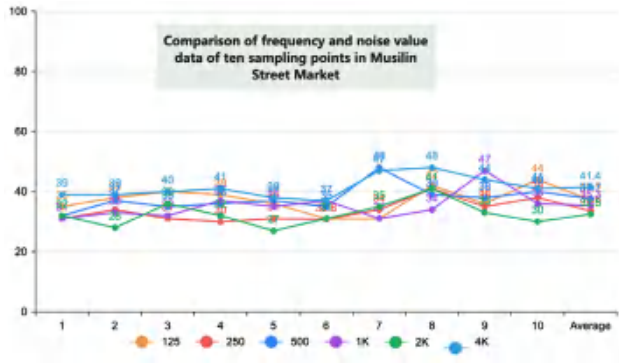
Comparison of dB difference in different Hz range

Under normal circumstances, the researcher studies the sound frequency range from 125k to 4k

b) Zhengning Road Night Market

Zhengning Road Night Market is also located at the center of Lanzhou city. Lanzhou is to the north of Xi'an. Lanzhou ramen, a specialty of snacks, is famous throughout China. The common point with the Muslim market is that it is also a Muslim market. However, more specialty foods along the Belt and Road appeared in the market, such as handmade yogurt, which has the same characteristics as the yogurt production methods in Turkey and Iran.

Since the sunshine time is longer, the daily production of sunflowers is bigger, and large sunflowers appear.

Compared with the Muslim Street Night Market, Zhengning Road Night Market is smaller in scale. There are no handicraft specialty products, only special snacks.

The scale of the stalls is relatively temporary, while the Muslim Street Night Market is a traditional storefront with many chain stores.

Figure. 5-66 The image shows 10 Hz range of graphic equalizer in Audition（*Own Source*）
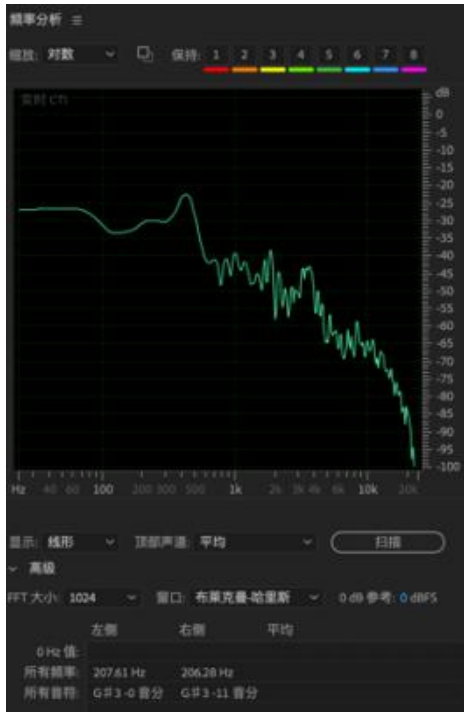
Figure. 5-67 The line in Audition，the sound gradually decreases（*Own Source*）

Figure. 5-68 Checking the wave patterns in Audition（*Own Source*）

Figure. 5-69 Piece of High dB in Dunhuang night market（*Own Source*）

Figure. 5-70 10 Hz range of graphic equalizer in Audition，we choose 1K around 15，others goes down，The sound is more soften and nice inside of the background of the Dunhuang night Market.（*Own Source*）

Therefore, the sound of Zhengning Road Night Market was more diversified.

Vendors'peddling at night market

c) Dunhuang Night Market

The Dunhuang Night Market is the largest night market in Dunhuang in the downtown area of Jiuquan. The stores and shops were all newly built. The market was open until 3 or 4 in the morning.

There were many handicrafts and restaurants with Silk Road cultural characteristics. Not all foods are ethnic minorities. Compared with the previous two markets, the degree of internationalization is higher, and there are even many foreign tourists buying silk scarves.

Longer background music in Dunhuang night market.

The sound is more soften and nice inside of the background of the Dunhuang night Market.

Table 5-5 Comparison of dB difference in different Hz range between two markets

dB/Hz	125	250	500	1K	2K	4K	8K
Musilin Market	48	59	53	87	79	78	74
Dunhuang Night Market	42	41	68	53	61	55	38

Table 5-6 Comparison of noises
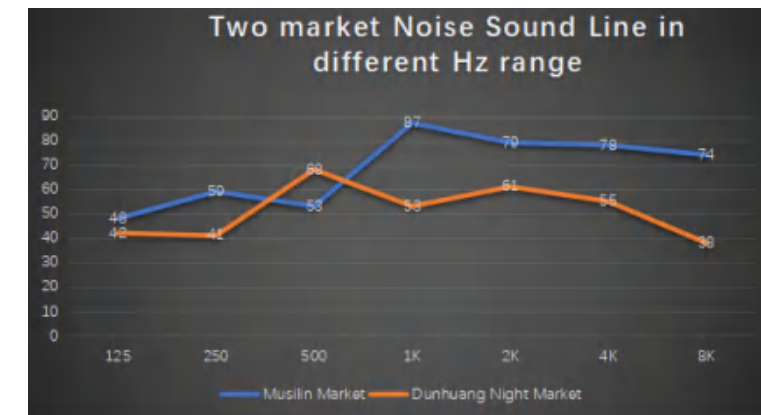
We can check from the line table that the Musliin Maket had very high dB.

There were small shops on both sides of the Muslim market where cars could pass by. There were very big noises such as car horns and other noises on the crowded roads. Although there were various singing and dancing sounds at Dunhuang Night Market, the overall night market was a pedestrian street with no traffic, so its noise curve tends to be flat.

Table 5-7

	By the Yellow River in Lanzhou				
	2018.7.14 Next to Yellow river				
Lable	Sound Name	date	weather	Type of sound	Average dB
location 36°03'53.0"N 103°49'01.2"E	SR048MS	night	clean	city	55
	SR051MS			natual	59
	SR053MS			Speci Culture	67

Comparison of three sound clips near Zhongshan Bridge

Table 5-8 Sound collected at Yellow River Brigde
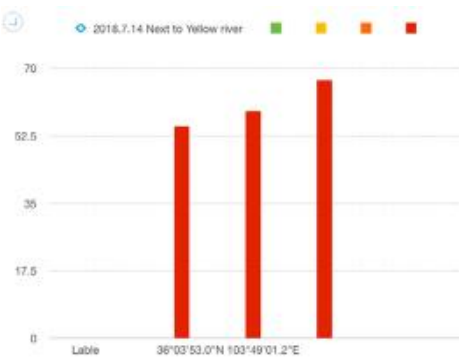
Histogram generated after the original audio monitors the maximum dB value

5.6.2 Soundscape comparison in public areas

The three research sites are all representative public areas of their cities, and they all have water sound landscapes with different characteristics.

The North Square of the Big Wild Goose Pagoda in Xi'an is a landmark of the city.

The sound of the water was the highest in decibels, and the momentum was magnificent; the sound of the Yellow River at Lanzhou Zhongshan Bridge was mixed with strong sounds of urban life; Jiuquan Danghe Park was the quietest, and the river was quiet and soothing.

The sound landscapes of the three public areas have their own characteristics, which are darker or lighter, reflecting the characteristics of different cities.

The North Square of Xi'an Dayan Pagoda is adjacent to the historical sites of Xi'an Dayan Pagoda and Small Wild Goose Pagoda Park.

The sound of the water in the square is majestic and the sound range is wide, reaching the highest decibel threshold of the recorder.

This technique uses magnificent sounds to highlight the momentum of urban landmarks.

The Big Wild Goose Pagoda and Small Wild Goose Pagoda Park are another kind of artistic conception.

The bells of the tower are mixed with birds and insects, which instantly makes people in the heyday of the Tang Dynasty.

The sound landscape of Zhongshan Bridge in Lanzhou in the northwest was full of features of urban life.

It was specially designed for people to walk through without the noise of cars. In the landscape design, the lights change color show, and the sound of water comes from the Yellow River, the mother river of China.
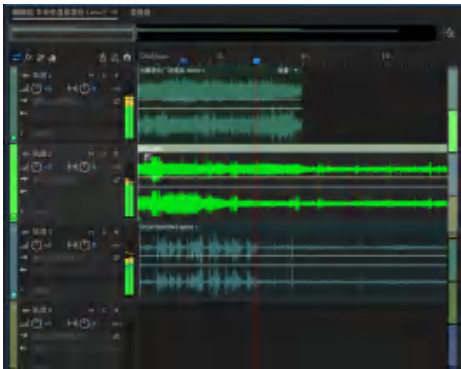
Figure. 5-71 Mixer interface
（*Own Source*）

The button is control
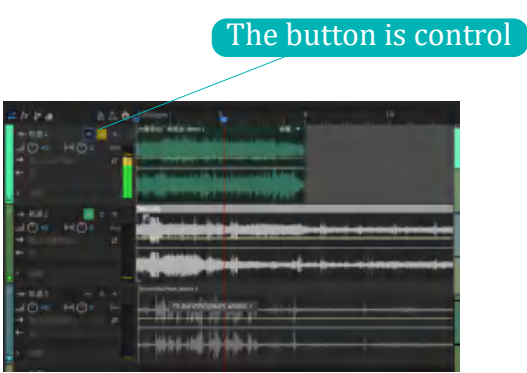
Figure. 5-72 Mixer interface，Close the other sounds to anyalze the line of each place.
（*Own Source*）
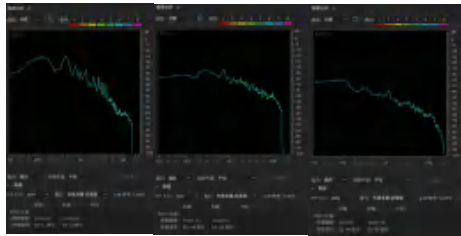
Figure. 5-73 Frequency change graph in Audition
　(*Own Source*)

The sound of a large number of people walking out to enjoy the coolness on the Zhongshan Bridge at night, the chattering of the citizens enjoying the coolness in twos and threes, and the sound of square dancing, together with the sound of the Yellow River water, created a life scene of ordinary citizens on the bank of the Yellow River, soothing and enjoyable.

Jiuquan Danghe Park is an oasis in the desert. Snow water from Tianshan Mountain is introduced into Jiuquan Reservoir as a water resource and landscaped on the water. The local elders that were interviewed by the researcher explained this water source. It is a good place for citizens to enjoy the coolness. It is a good place for citizens to enjoy the cold. The sound of chatting, children playing, dog barking, and gurgling water presents a comfortable life scene.

The researcher took out the three audio pieces from the database and imported them into the Audition software mixer, The pieces from top to bottom are as follows:

The first one is the audio in the North Square of the Big Wild Goose Pagoda. It can be seen from the figure that the dB sound is the largest and the audio threshold is wider.

The second is the sound of the Yellow River in Zhongshan Bridge, the first sound is obviously lower than the dB range

The third is the audio curve of the river channel in Danghe Park in Jiuquan City. Compared with the first two sounds, it fluctuates greatly, indicating that the sound of water in this area is relatively calm.

In this chapter, the researcher introduces how to use the audio mixer in the Audition software into the study. The audio mixer can better analyze and compare sounds of the same type.

From the bar graph in the left area, it can be seen that the dB changes with the audio

Click M /S /R at the top left of each track to switch between mute/solo/recording Then we get the curve change value of

the three tracks from top to bottom as Figure. 5-73

The researcher selected three regional decibel values according to the fixed points from the first second to the fifth second in the three regions, and obtained this Table.

Researchers have found that in cities, where there are markets, there are more dialects, the strongest customs, and peaks of sound appear one after another, the sounds of cries and diners are mixed, and where water flows, there are more human activities. , The sound is denser.

Table 5-9 Five-point dB value data analysis in three areas
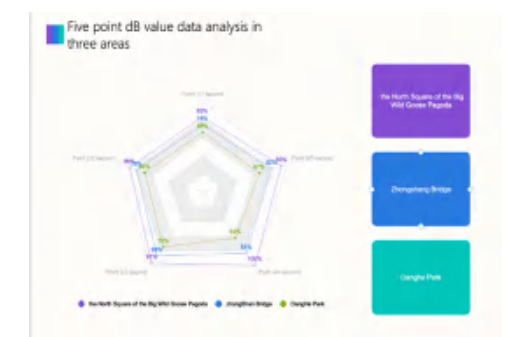
5.6.3 Comparison of characteristics of ancient towns and outstanding historical buildings

Nine valid sounds were collected at Dayuwan Town. Among the valid sounds, the ones of natural ecological environment accounts for 20%, birdsongs 20%, human voices 50%, and sound of raining 10%. Among all the data, Dayuwan Town has a famous architect Interpretation of village structure, feng shui and ecological environment protection, local residential history, the most comprehensive data of all the traditional villages collected, and because it is located in the northern part of central China but has the characteristics of the architectural structure of the south of the Yangtze River, it is used as a key folklore sound landscape survey.

A total of 4 valid sounds were collected at Dali Ancient City, and 3 at Xizhou Ancient Town. Most of them are sound landscapes in a humanistic environment. It was lucky enough to have found inheritors who understand the local characteristics and they gave excellent explanations.

With urban renewal, there are fewer and fewer ancient towns and excellent historical and cultural cities that retain the state of Chinese traditional primitive villages. Every ethnic group has their featured customs.

In Chinese history, the ancient city of Dali traveled north through Sichuan Province through the Silk Road to reach Xi'an and other regions.

The ancient towns of Dali and Xizhou in Yunnan are located in the plateau area and are windy, so they have their own architecture. The architectural features, along with the continuous economic development, gave birth to the unique bar and night market culture of the ancient city, plus the warm customs of ethnic minority areas.

Compared with the ancient town of Dayuwan town, what imitated the characteristics of Huizhou architecture in the southern water village of China, because it is located in the inner core area of Wuhan, the original villages are well preserved, and the aborigines still live in it. The soundscape environment is in line with the soundscape environment of traditional Chinese houses.

These three ancient towns feel like "the land of idyllic beauty" right next to the city, so the researcher took them as typical cases of Chinese traditions, Chinese traditions being changed and the updated Chinese traditions.

Ecological environment comparison
The ancient town of Dali, because it is located in an area where ethnic minorities live in the southwest, its architectural style has the characteristics of local customs and the integration of ethnic minorities and Han nationalities. As a contrast with the original village of Dayuwan Town, it has its modern commercialization point while retaining as part of the traditional residential buildings, they are more dynamic than Dayuwan Town.

Its soundscape is more inclined to urban culture and life, and it incorporates the characteristics of local minority commercial streets.

The sound landscape of Dayuwan Town is protected by traditional Chinese villages and has not been open to commercialization. It keeps the historical village structure and local life characteristics. Therefore, the ecological environment is better, and the sounds of magpies calling friends were collected very clearly.

Compared with the excitement of the ancient city of Dali, the ancient town of Dayuwan was built by a merchant's family during the Ming and Qing Dynasties. It pays attention to geomantic omen and descendants, with mountains behind, water in front, and a small square and big locust tree in the middle of the village.

Every house in every house is hollow, with a corridor, where you can watch the rain and listen to the lotus. At the same time, it is warm in winter and cool in summer. Outside the house, it is a traditional large family house structure of the Han Chinese.

The original ecology is more protected. The crowing of chickens, magpies, and rain in the village all give people a quiet and peaceful state, expressing the mood and soundscape of the pastoral life.

Based on the theory of the five elements structure in China, if the excitement of the ancient city of Dali and the ancient town of Xizhou is golden, vigorous and full of color, then the sound of Dayuwan Town is the sound of wood, a melodious and sustainable sound.

5.6.4 Comparison of the ecological environments of the ruins

Yadan Devil City had only the sound of winds, gravels and tourists.Only during the day when there are tourist buses in and out. At the site of Xiaofangpan City, in addition to the sound of wind and tourists, the local museum adds background sound effects on both sides of the plank road. The ancient city of Guazhou, with only the calls of wild geese and swallows, has not been developed.

The only remaining voices of tourists are for researchers and other members to get off their cars temporarily. The Ruins of Suoyang City regularly open tour buses every day. Tourists in most areas of the ruins are not allowed to get on or enter. Only designated 2-3 areas can visit and feel the ancient city structure.

Therefore, only the introduction voice of the researcher's companion guide was collected.

The four sites have maintained their original status in terms of natural ecological protection. Only Yadan and Suoyang City have been developed for scenic spots, but they are not fully open. Scholars are generally among tourists.

The sound of swallows in the ancient city ruins of Guazhou is dense, indicating that swallows gather here. Remind us that in addition to avoiding the weathering of historical sites, we must also be careful not to be eaten by bird droppings.

For example, in Spain's historical buildings where there is less human activity, there will be a large number of pigeon activities and produce feces, which is a kind of damage to the ancient architectural ruins, so many buildings have "pigeon needles" inserted.

5.7 Result

This chapter mainly introduces the research on the cultural landmark soundscape on the Silk Road. A total of 14 sound collection points across five provinces in the study area of the Silk Road in China. It is the key chapter of field research in this doctoral dissertation research. Among the 14 sound collection points, there are two world cultural heritages.

Two national cultural heritages and five national key protection units are including. The content of the survey is rich. Desert environments dominate the nine sound collection points in Gansu Province, and the amount of sound collection is huge:

Table 5-10 cultural landmark soundscape in Gansu province：

GANSU

LOCATION	Date	Description of the Soundscape	Sound SUMMERY		
Point A	16-21.1.2017	Xi'an City	30		
Point B	17.7.2018	Lanzhou City	11		
Point C	17.7.2018	Jiuquan City	6		
Point F	19.7.2018	GUAZHOU Ancient City	7		
Point H	19.7.2018	Yandan Devil City	6		
Point I	19.7.2018	Ruins of Xiaofangpan City			
Point J	20.7.2018	Ruins of Suoyang City	4		
Point K	13.7.2018	Luoyang Longmen Grottoes	15		
Point L	20.7.2018	Yulin Grottoes	17		
Point M	21.7.2018	Dunhuang Mogao Grottoes	11		
Point N	16.7.2018	Ta'er Temple	10		

From this chapter, through the sound collection, it is feasible to establish the research goals set by the researchers in Chapter I to establish sound media libraries and sound maps. Without a big number and quality of sound records, the "library" would be impossible to establish. The reason for choosing the first Silk Road soundscape map in Gansu Province is that this area has a world-famous world cultural heritage.

> *World cultural heritage is an international convention initiated by the United Nations and. implemented by the United Nations Educational, Scientific and Cultural Organization. It aims to preserve natural or cultural places of outstanding universal value to mankind all over the world. The world cultural heritage is the highest level of cultural protection and inheritance, and the world cultural heritage belongs to the category of world heritage[20](Baidu ,2012)*

The regional concentration can combine the soundscape map with the enhancement of the regional tourism experience. The display of the "Silk Road" soundscape on the Internet is also relatively regional. In other words. The first two research objectives in the first chapter will finish through the research in this chapter.

Among the four major grottoes listed as World Cultural Heritage, the researcher visited two of them. Yulin Grottoes, as a branch of Mogao Grottoes, also has high academic research value.

Mogao Grottoes and Longmen Grottoes are well-known, and they have been repaired for several times. Yulin Grottoes were developed later. Like Longmen Grottoes, Taer Temple is a Buddhist attraction with many visitors.

Sound Analysis of Cave Ecological Environment. 10 valid sounds were collected in Mogao Grottoes, 13 in Yulin Grottoes, and 14 in Longmen Grottoes

a) The Mogao Grottoes were crowded with tourists. Several groups of visitors led by different guides were crowded in the same cave. Therefore, the sound collection

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[20] The literature carried out can be consulted on the website: http://www.baidubake.com

is complicated. The researcher's visit is during the peak tourist season of Mogao Grottoes. Therefore, only eight caves could be visited with one ticket. After the museum guide finished explaining one cave, everyone must leave the cave.

Some collected sounds were full of noises, so only eight valid sounds were kept.
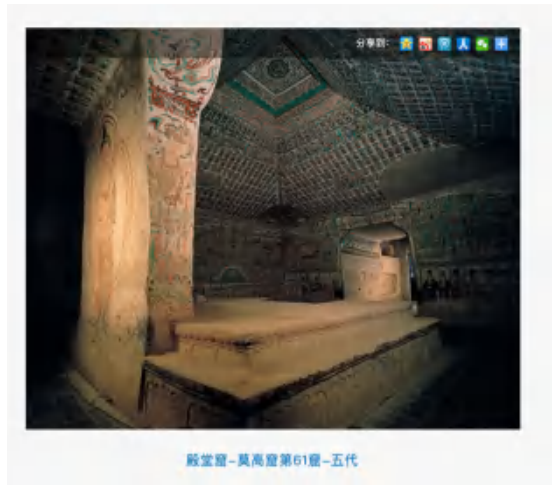
Figure. 5-74 Cave 61 of Mogao Grottoes, Dunhuang[21]
(*http://public.dha.ac.cn/content.aspx?id=353908940100*，*2019*)

b) Compared with Mogao Grottoes, Yulin Grottoes are less well-known. The researchers and several other team members are almost small groups to visit.

Commissioner Chen from the Yulin Branch of Dunhuang Research Institute was specially invited to explain the caves. As a special explanation. Therefore, the oral sound collection is complete, and it gives a detailed and professional introduction to Yulin Grottoes from the painting structure, perspective structure, painting color, base embryo, paint, and the characteristics of the painting characters. It is a very rare research material that the researcher buys "Introduction to Yulin Grottoes".

The Longmen Grottoes is located in Longmen, Luoyang, surrounded by mountains and rivers. The researcher visited in midsummer, after a heavy rain, so the water level in the middle of the cave was high and the cicadas sang along with the audience. Tourism development here was earlier, except for Chinese tourists.
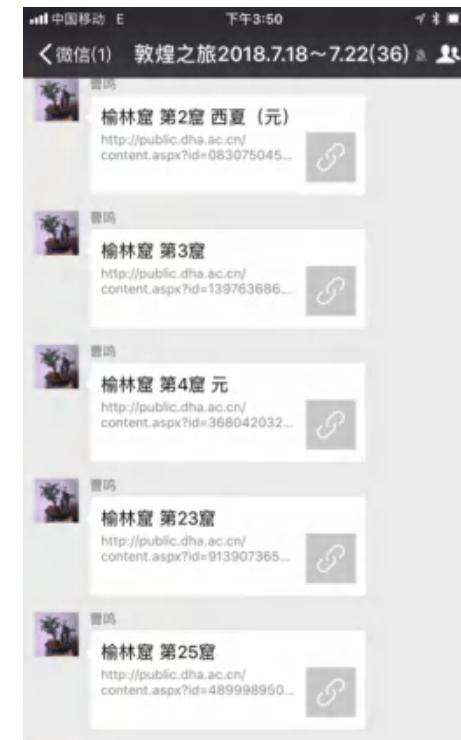
Figure. 5-75 Yulin famos Grottoes Introduce in Wechat App
(*Own Source*)

There are also many tourists from Japan, South Korea, Europe and the United States, so the tour guide's voice is not only in the local language, but also in English and Korean.

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[21] The image check from Dunhuang Academy http://en.dha.ac.cn/list.aspx?id= 144086405076 http://public.dha.ac.cn/content.aspx?id=353908940100，2019

c) The Yulin Grottoes collect a lot of sounds. In addition to the sounds of cicadas, birds, water, and wind, there are also the sounds of tourists, tour guides, and the sounds of raindrops dripping into the grotto through the top of the cave. The caves excavated Buddha statues according to the mountain. Over time, some rocks cracked and rained. Therefore, the researchers collected the sound of rain falling in some grottoes, which corroded the Buddha statues to a certain extent.

d) Compared with Mogao Grottoes, Yulin Grottoes, and Longmen Grottoes; Ta´er Temple has a richer sound environment, such as tour guides, prayer wheels, Buddha worship, butter flower production, and workshops in the temple. The believers worship the Buddha devoutly.

The temple covers a large area, there are still lamas living in the temple, the ecological environment is good, and the sound of birds are also included in the audio collection.

Oral voices are the lowest in decibels compared to tourists in Yulin Grottoes, and Mogao Grottoes have the most complicated sound spectrum curve. The tour guides of Taer Temple are introduced at the same time with multiple tour guides in Longmen Grottoes in Luoyang, and the cultural environment is mixed.
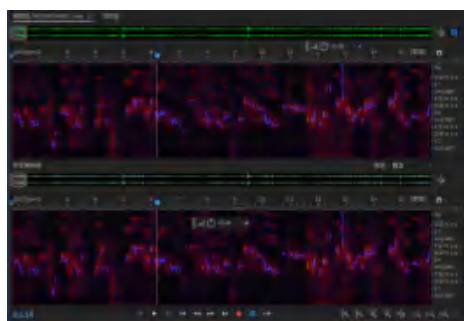
*Figure. 5-76 Voice echo spectrum explained by a female researcher
at Yulin Grottoes in Audition
(Own Source)*

It can be seen from the picture that the purple part is the regenerating area, indicating that the cave environment is relatively humid

*Figure. 5-76 Contrast male researcher Mogao Grotto explaining the map.
The echo zone is less in Audition
(Own Source)*

Among the four collection sites, Yulin Grottoes introduced the clearest sound, accompanied by echoes, which can be used as oral data of important historical documents. The rest of Mogao Grottoes only collected some clear voices; Luoyang Longmen Grottoes did not, but the Ta'er Temple guide introduced some temples the sound is clear.

Compared with the outdoor temperature of close to 40 degrees, the caves are as cold and wet as entering the catacombs. Because the Mogao Grottoes are visited by a large number of people, the continuous entry and exit of people actually changed part of the humid environment in the cave.

The Yulin Grottoes were developed relatively late and are relatively primitive, so the soundscape protection in the caves is relatively complete. Since China initiated the development of the Belt and Road Initiative in 2014, the number of tourists has increased sharply, so the protection of cultural heritage is urgent.

The Dunhuang Research Institute stated that more caves will be developed as visiting materials in the future, and some heavily damaged caves will be closed.

In the early days of the founding of the People's Republic of China, the top of the grotto was maintained. The original structure and materials were not maintained. After the roof was covered with cement, the Buddha statues and murals in the cave were damaged.

Figure. 5-78 Virtual 3D Image of Cave 220 of Mogao Grottoes, Dunhuang
（*https://baijiahao.baidu.com/s?id=1675887034508658419&wfr=spider&for=pc.2020*）

Through the cave soundscape analysis in this research, the researcher hopes that the relevant departments will help the relevant departments draw attention to the protection of various historical and cultural heritage soundscapes. Keep it in its original state, and it will be able to retain its original form after the next millennium.

Chapter VI
Research on Soundscape in a
Unique Social Environment

6.1 Introduction

The focus of this chapter is the city of Urumqi in Yunnan Province in Southwest China and Xinjiang Province in Northwest China. Affected by region and climate, coupled with epidemic restrictions. The researchers focused on the sound collection and comparative analysis in Yunnan, and in Urumqi, Xinjiang, only conducted surveys and sound collections on the mulberry paper factory in Moyu town.

Table 6-1 Fieldwork on Soundscape in a Unique Social Environment

Date	2019	2019	2020
Areas	XINJIANG	YUNNAN	YUNNAN
Location	Point F	Point A	Point C,D,E
Groups	JOSEP CERDA	LINLIN WANG	MR ZHANG
Equipment	ZOOM H5M	ZOOM H2M	Huawei Mate Pro 20

Field work Investigation Record

LOCATION	NAME	DATE	DESCRIPTION OF THE SOUNDSCAPE	SOUND SUMMERY	
Point A	1	18.2.2019	YongRen Twon		
Point B	2	19.2.2019	Zhizuo		
Point C	3	25.7.2020	Puzhehei		
Point D	4	1.8.2020	Guangnan		
Point E	6	19.7.2020	Wenshan		
Point F	7	17.5.2019	MOYU		

From the entire fieldwork that the researchers went to Yunnan three times in total.

Yunnan Province travels northward through Chengdu, Sichuan to Xi'an and joins the land Silk Road, and southward to the bordering Southeast Asian countries, which is an important part of the Maritime Silk Road. It is the famous "Tea Horse Road"[1] in Chinese history.

The Southern Silk Road started from the Chengdu Plain Point, enter Yunnan via the. "Lingguan Road" and "Five Chi Road", and then pass the "Yongchang Road"entered Myanmar, India, and then as far as Central Asia, West Asia and Europe
Continent. This road was called the "Shu Shen Poison Road" in ancient times. Modern. Scholars,Call it the "Southern Silk Road" or "Southwest Silk Road"The cultural interaction on the Southern Silk Road has gone through a long historical period. After modern times, a situation of intertwined ethnic groups and diverse cultures has basically formed. This kind of cultural interaction continues to this day, especially in the current ethnic festivals along the Southern Silk Road.[2](Wang, 2019, p.21)

Yunnan is famous for its vast territory, numerous ethnic minorities, and rich products. The researchers visited multiple local capitals in four of these regions in two and a half years to compare and analyze the characteristics, festivals, languages, and cultures of ethnic minorities in Yunnan Province. And compare the soundscape
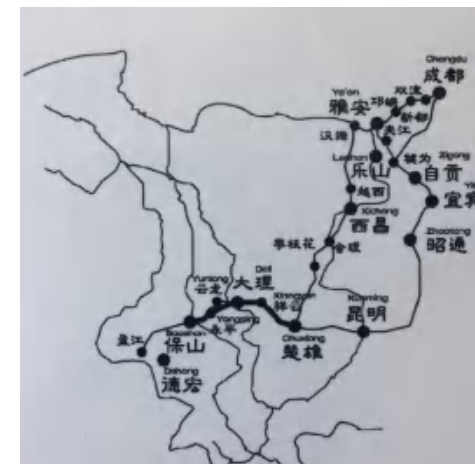
Figure.6-1Route Map of the Ancient Silk Road in Yunnan
（*https://www.sohu.com/a/213449650_786743*，*The picture comes from 2017*）

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[1] The Ancient Tea Horse Road refers to a non-governmental international trade channel that exists in southwest China and uses horse carts as the main means of transportation. It is a corridor for economic and cultural exchanges among ethnic groups in southwest China.

[2] Wang Wanping. (2019). Ethnic migration, cultural exchanges, and festival sharing along the Southern Silk Road: A typical case of the formation and development of the Chinese ethnic community. Journal of Ethnology (04), 17-26+102-105. doi: CNKI:SUN:MZXK.0.2019-04-002.

6.1.1 Soundscape of Chuxiong Yi settlement

In 2008, the folk songs and dances of the Yi nationality and the oral literature "Mei Ge" were included in the national intangible cultural heritage.

The Chuxiong Yi people have diversified cultural resources and the surrounding ecological and natural environment advantages. In the Chuxiong Yi people area, festivals are important folk activities.

The Yi ethnic group is the sixth largest ethnic group in my country, with a population of over 8 million. It is mainly distributed between the plateaus and coastal hills in the four provinces (regions) of Yunnan, Sichuan, Guizhou, and Guangxi. It has multiple branches and has a rich traditional and excellent culture.

Its clothing has formed obvious regional characteristics in terms of texture, style, pattern, etc.

The embroidery of Yi clothing is particularly distinctive. The religious beliefs of the Yi people are still in the stage of primitive religion.

The concepts of nature worship, totem worship, ancestor worship, and animism exist in society.

The priest "Bimo" and the wizard "Suni" of this ethnic group have a certain degree in the Yi area. Impact. Festivals are a concentrated list of the lifestyles and customs of the Yi people in various places.

The main festivals include the Yi Year, Torch Festival, and Dress Competition Festival.

Date: 18 th Feb.2019
Yongren Town, Yunnan, landmark: Yunnan Province, Chuxiong Yi Autonomous Prefecture

The county seat of Yongren Town is located in Chuxiong Yi Autonomous Prefecture.After the researchers arrived, the first interview was the "Women Street", a creative market for Yi female craftsmen.

This small street is dominated by Yi embroidery, and there are also some Yi characteristic musical instrument stores and clothing stores.

The county seat of Yongding River, ethnic costumes, musical instrument product street, and the four brothers of Yueqin performing.

Figure.6-2 Photos of the costume festival wearing ethnic costumes in Yongren City （*Photo by Author*）

Analyze sound color
In Audition
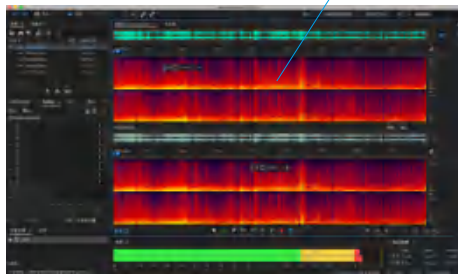
Figure.6-3. Audition editing step 1
（*Own Source*）
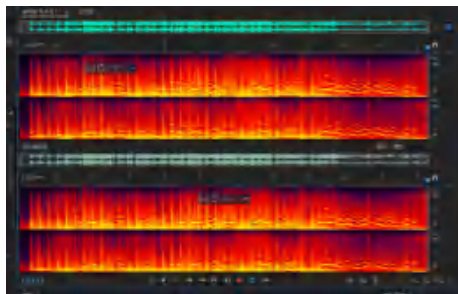
Figure.6-4 Audition editing step 2
（*Own Source*）
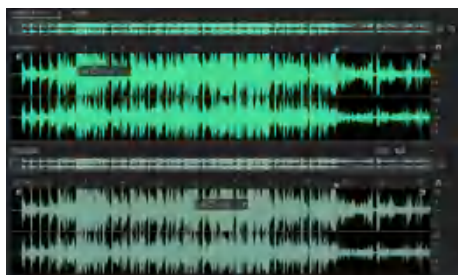
Figure.6-5 Audition editing step 3 Observe changes in sound waveform
（*Own Source*）

🔊 YUNSR003MS Moon piano playing Editing process; starting from 11 minutes, the second half of the Yi embroidery interview is divided into three audio sections.

From the analysis of the atlas, the sound colors in the middle and the back began to become dense and clustered together. Therefore, in the process of audio collection and editing, many times you don't need to listen to everything.

According to the visualized sound map described in the previous content, find the place with the strongest color, and there must be a stronger sound.

It may be the effective sound we are talking about, or it may be noise.

Find and focus on the analysis and conclude that this part is the sound of the player playing the moon piano, cut and refine it and listen to it again.

After the editing is complete, a new audio track is drawn, a total of twelve seconds.

It can be seen from the picture that the

sound of the first nine seconds is dense and compact, and the sound starts to be soothing from the eighth second, which is the sound characteristic of the moon piano ensemble.

In the research methodology of the previous chapter, it is shown that the sound can be edited through the view.

Human ear conditions restrict many sounds and cannot fully hear the subtle changes of the sound. The curve changes can be seen clearly in the sound software.

We found that there is a fuzzy particle in the middle of each sound track. After repeated listening, it can be used as noise to remove. Use the frame selection tool to select the noise.

Analyze sound color
In Audition

Figure.6-7. Au editing step 5 Noise selection
（*Own Source*）

Figure.6-8 Audition editing step 6 Capture noise samples
（*Own Source*）

Figure.6-6 Audition editing step 4 Amplify the audio track through spectrum mode
（*Own Source*）
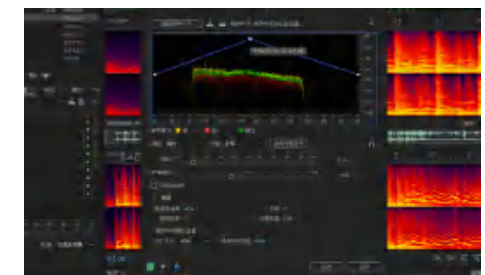
Figure.6-9 Audition editing step 7 Adjust the noise reduction curve
（*Own Source*）

Figure.6-10 Audition editing step 8 edited sound waveform
　(*Own Source*)
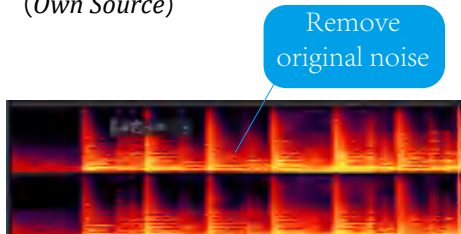
Figure.6-11 Audition editing step 9 Observe the noise of the sound map
　(*Own Source*)

Figure.6-12. Audition editing step 10 Noise reduction again
　(*Own Source*)

Bring up the noise reduction panel and try to adjust the noise sample curve. After the audition, "select the complete file" to adjust the noise range of the entire sound curve, and the curve is compared with the one before adjustment:

The new curve track can be found in two different views, the sound becomes clean and pure.

Then listen to the audio repeatedly, and then use the fixed-point capture method to refine the noise for the second and third times.

Observe the amplified sound track curve. This is a random and beautiful curve change.

The researcher will use the curve change for creation in the seventh chapter.

Compared with the change of the original audio track before editing, the curve of the sound from the picture has become mellow, and a new MP3 sound named YUN1MP3 can be drawn.
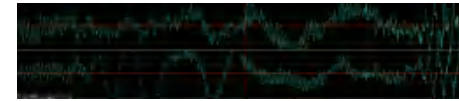
Figure.6-13. Audition editing step 11 Enlarge the track curve（*Own Source*）
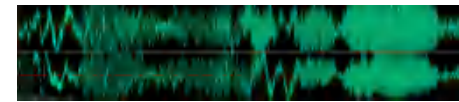
Figure.6-14 Auditon editing step 12 Original wave（*Own Source*）

Figure.6-15 The picture shows the Moon piano, a minority characteristic musical instrument store in Yongren Town
　(*Photo by Author*)

Figure.6-16. The picture shows the researcher taking a performance by a Yi artist at the Yi Musical Instrument Store in Yongren Town.
　(*Photo by Author*)

Figure.6-17. Yi text plaque at the entrance of Yi clothing store
（*Photo by Author*）
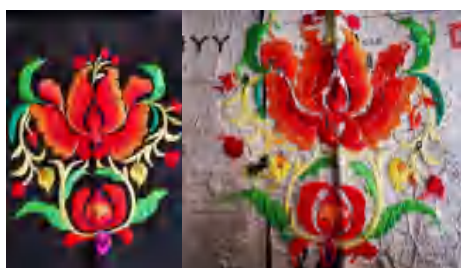
Figure.6-18 The picture shows the Lantana flower embroidery purchased by the researcher from the Yi craftsman
（*Photo by Author*）

The comparison, production method, modeling and pronunciation of the Yi Moon Qin and Silk Road instruments (video)

IMG-5269.MOV video performance

The audio of the Yi nationality's voice transmission is recorded in the sound collection of the later competition festival.

Here is a brief introduction to the Yi nationality's writing and composition method. Pictographic[3] method is the basic method of making characters in Yi language. Pictographic method can also be said to be the method commonly used in various primitive rock paintings all over the world.

The most basic idea is to trace the shape of objects. The primitive rock paintings are also the matrix of writing.

 The primitive tribe hunted a bison and painted or carved the shape of a bison with mineral paint on the rock or wall.

Yi pictographs generally select the most characteristic parts of things to form characters. The pictograph method is roughly exemplified by the following types: 1. Human figure; 2. Animal form; 3. Plant form; 4. Natural form (sun, moon, stars, mountains, rocks and rivers); 5. Pictographic form (tools, buildings). [4]*(Zhu, 2014)*

In the post-industrial era, many embroidery techniques are similar to Yi embroidery, but they have developed to the stage of large-scale mechanized production.

Researchers have also seen similar embroidery techniques in other countries along the Silk Road.

Therefore, the protection and protection of craftsmen in the Yi area of Chuxiong Inheritance is imminent. The researchers used sound as the theme, and the handicraft intangible cultural heritage data in the visited areas were collected and retained by handicraft production.

Yi embroidery is mainly red, yellow and black. Most of the residents in the Yi Autonomous Region of Yongren County live in the mountains, and the resources are relatively scarce. Therefore, it can be seen that the back of the cloth piece uses newspaper as the pattern base, and the pattern in the picture is the traditional Yi pattern of Yi people.

Figure.6-19. The picture shows a picture of horse cherry blossoms in nature
（*The picture comes from https:// www.yuhuagu.com/tupian/ lv/2013/0405/7243.html.2019*）

Horse cherry, Latin name: (Rhododendron delavayi Franch.), also known as Rhododendron, belongs to the genus Rhododendron of the azalea family. Evergreen shrubs to trees; thick bark, gray-brown, flowers clustered on the tops of branches, showing umbel-like racemes, large and beautiful; fleshy corollas are bell-shaped, deep rose red; warm and sand-tolerant Quality soil and dry climate, anti-pollution[5]*.*

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[3]Pictographic come from pictorial characters, but the nature of pictures is weakened, and the nature of symbolism is enhanced. It is the most primitive method of making characters. Its limitations are great, because some physical and abstract things cannot be drawn.
The literature carried out can be consulted on the website: http: //www.baidubake.com

[4]Pictographic come from pictorial characters, but the nature of pictures is weakened, and the nature of symbolism is enhanced. It is the most primitive method of making characters. Its limitations are great, because some physical and abstract things cannot be drawn.
The literature carried out can be consulted on the website: http: //www.baidubake.com
[5]The literature carried out can be consulted on the website: http: //www.baidubake.com

Figure.6-20 Yi nationality's auspicious insole with cross stitch method, by researcher in Yongren
（*Photo by Author*）

Figure.6-21. Embroidered lantana flowers of Yi ethnic group in Yongren Town
（*Photo by Author*）

Yi embroidery machine reprocessing after hand embroidery

🔊 YUNSR004MS How to wear chicken cap and traditional clothing.

Editing process; mixed discussion dialogue.

🔊 YUNSR005MS The leading Yueqin test will begin in about a minute.

Editing process; after 4 minutes and 10 seconds, the piano tone is retained, and it starts to reach 10 minutes and 46 seconds.

The sound is clear like a guitar.

Introduce the Moon piano pattern after 11 minutes and eight seconds.

Figure.6-22 Yi women wearing traditional Yi costumes
（*Photo by Author*）

Figure.6-23. A local artist introduces a picture of the moon piano
（*Photo by Author*）

Figure.6-24. Xichou County Mountains Photos，the researcher's self-photo（Photo by Author）

Figure.6-25. Picture of Naduo Zhaizi Musical Instrument（Photo by Author）

6.1.2 Soundscape of the multi-ethnic integration area in Wenshan Prefecture, Yunnan

Wenshan Zhuang Autonomous Prefecture, Yunnan

2020.6.28 to 2020.7.6

🔊 YUNSR006MS the sound of insects in the mountains of Xichou Town

🔊 YUNSR007MS the sound of cicadas

Sword Dance in Yanshan County, Wenshan Prefecture

🔊 IMG_3347.MOV

Video Knife Dance Performance

🔊 IMG_3350.MOV

6:20pm
Video 3 Zhaizi Musical Instrument playing and dancing

My string strums

When the researchers heard the sounds of various musical instruments of ethnic minorities singing and dancing, they came up with a sound sculpture that could reinterpret the sounds on the Silk Road with modern methods based on the principle of circular cavity.

🔊 IMG_3376.MOV

Puzhehei area

The Puzhehei area is the most prominent area of Qiubei's topography and geomorphology. It has a beautiful environment and beautiful scenery and is a place where many ethnic groups gather.

🔊 Puzhehei.MOV

Figure.6-26. Zhaizi Musical Instrument playing and dancing photos（Photo by Author）
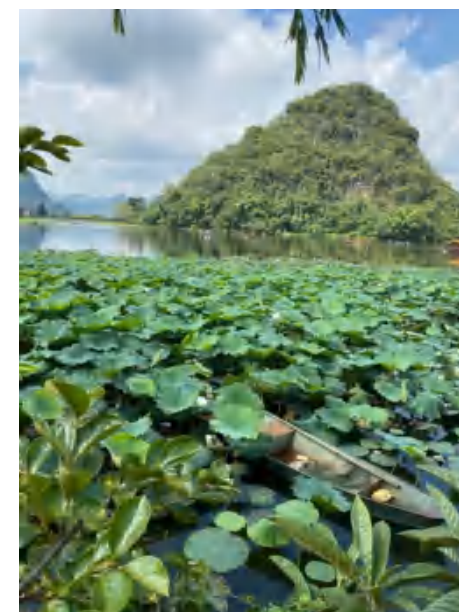
Figure.6-27 Puzhehei Karst geomorphology（Photo by Author）

Figure.6-28. DJI drone takes pictures
（Photo by Author）

The UAV picture of Puzhehei Qingqiu, taken on a cloudy day on January 9, 2021, shows a more obvious karst landform and color distribution map.

Drone video DJI_0075.MP4

🔊 DJI_0080.MP4

🔊 IMG_3555.MOV

Puzhehei Village, Poya Song Book of Zhuang Folk Songs[6]

> *The protection and inheritance of intangible cultural heritage is a common problem faced by all countries in the world. The "Poya Song Book" in the Funing Zhuang area in Yunnan belongs to the most "living fossil" type of intangible cultural heritage[7]*(Dong& Lin,2020, p.9)

Figure.6-29. The shape of a tile cat of the Zhuang nationality in Puzhehei Village
（Photo by Author）

Figure.6-30. Live performance of ethnic minority dance bamboo pole dance in Puzhehei Village （Photo by Author）

Figure.6-31 The picture shows the calligraphy version of Poya Songbook written by the Zhuang teacher of Wenshan College （Photo by Author）

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[6]Poya Song Book is a collection of folk songs that was circulated in the area of the Zhuang nationality in Funing County, Yunnan Province, and recorded the Zhuang nationality folk songs on the local cloth with primitive pictures and texts. The literature carried out can be consulted on the website: http: //www.baidubake.com
[7]Dong Yunchuan & Lin Miaoyu. (2020). Inquiry into the education and inheritance responsibility of intangible cultural heritage——Taking "Poya Song Book" as an example. Educational Science (01), 9-14. doi:CNKI:SUN:JYKO.0.2020-01 -002.

Figure.6-32 Photographs of bronze drums of the Zhuang nationality taken at the Zhuang Local Museum
（*Photo by Author*）

Figure.6-33 Drumming sound wave in Audition
（*Own Source*）

Sound collection, sung by teacher Lu Linfeng from Wenshan College.

The researcher designed by the researcher based on the sound and image data provided by Mr. Lu. The sound label was adapted and produced by the team member Zhang Minghao and added to the researcher's bird song clip, which is 2/39 seconds. The overall rhythm is gentle.

Date: 1ᵗʰ Auguest 2020

Guangnan County Public Area, Museum and Guangnan Copper Drum Sound Collection.

The earliest of the bronze drum cultural relics unearthed in Guangnan County is the Shaguo Drum from the Spring and Autumn Period and Warring States Period. It has a history of more than two thousand years. It is widely spread among the Yi nationality and Zhuang nationality.

West Street Park Weekend Park and Market in Guangnan County.

Folklore in West Street Park.
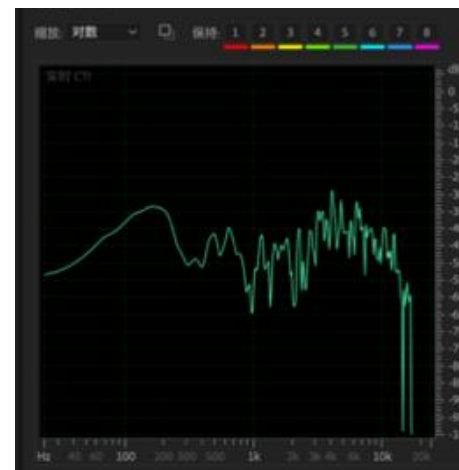
Figure.6-34. Guangnan drum sound curve analysis
（*Own Source*）

Figure.6-36. Totem symbols on the Guangnan bronze drum
（*Photo by Author*）

Figure.6-35 Guangnan County Culture Museum, Museum Bronze Drum Pictures
（*Photo by Author*）

Figure.6-37Seniors performing on weekends in Guangnan Park
（*Photo by Author*）
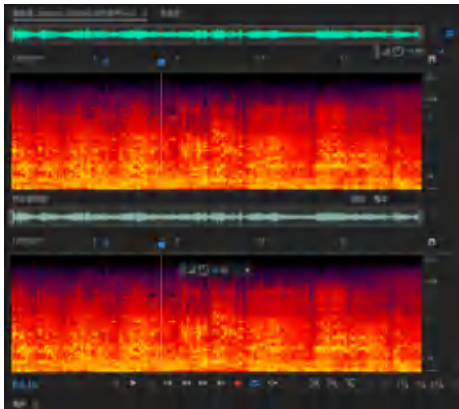
Figure.6-38 Performance of the old man's voice spectrum in Audition
（*Own Source*）

Figure.6-39. Three Birds Totem of Zhuang Nationality
（*Photo by Author*）

Oral Three Birds Interview with Teacher Lu，

Explanation of Zhuang's Three Bird Totem

Popular singing

In the weekend market in the county seat of Guangnan County, you can see the costumes of aunts of ethnic minorities and the voice curves of some local ethnic minorities

Figure.6-40. The singing of three Zhuang aunts in the park and the wave in Auditon
（*Photo by Author*）

Figure.6-41 Display of the tonal tone map
（*Own Source*）

Figure.6-42. Photos of aunt selling vegetables at the weekend market.
（*Photo by Author*）

Figure.6-43. Corresponding sound curve picture
（*Own Source*）

6.2 Soundscape research with folklore as the background

Folklore activities are cultural activities on a spiritual level by people living together in a place after a long period of historical precipitation.

Folklore soundscapes have different effects due to the different activities of each ethnic group. Many ethnic groups and festivals melted on the Silk Road. If all can be collected into the sound media library, it will be very precious historical data.

Researchers have collected the soundscape data of the clothing shows on the Yunnan Yi Nationality Dress Competition Festival and the Yongren County Dress Competition Festival and have been included in the sound media database.

In the process of sound collection, in addition to the soundscape of the local event, the sound of the traditional Yi language was also collected. The contrast with Chinese intonation is completely different.

6.2.1 Inheritance and Protection of Chuxiong Yi Nationality Dress Competition Festival

Chuxiong Yi Autonomous Prefecture is located on the west side of the southern section of the Kangdian axis, spanning 100º43′ ～ 102º30′ east longitude and 24º13′ ～ 26º30′ north latitude

Dress Competition Festival

On Chinese calendar first Moon festival each year，the Yi people living in Zhiju area in Yongren Town and nearby Zhonghe, Osmanthus in Dayao County and other places gather to celebrate the Dress Competition Festival.

The so-called clothing festival is the day of the clothing and apparel competition. This is a festival that fully demonstrates the wisdom, wisdom, diligence and ability of the Yi people, and it is also a festival that loves beauty.

The Dress Competition Festival is one of the most important and characteristic traditional festivals of the Yi people in China.

According to textual research, the clothing competition festival originated in the transition period of the Yi people from hunting and nomadic to settled farming and was related to the sacrifice of the "hutou" handover and the sacrifice of the land god and fire chief.

The costume collection to celebrate the succession of the new boss around the fifteenth of the first lunar month is the embryonic form of the "dress competition festival".

The discovery of Zhiju, sowing grain seeds, and choosing a wife for competitions, the young hunters Chaolinuo brothers, condensed the origins of the Yi people from hunting to farming and the clothing competition festival. Therefore, the costume festival closely integrates the farming ritual and the Bimei costume. [8]（*Zhao，Huang & Pan，2016，p.61*）

Zhizuo Village

Date：19th Feb2019 Zhizuo Village Yi Nationality Dress Competition Festival

The researchers went to the mountain in the morning with the research team. The Yi area of Chuxiong has many mountains and many terraced agricultural fields. Zhizuo Village in Yongren town is a relatively flat village among the circling mountains.

Figure.6-44. The terraces in Chuxiong area, the picture shows the researchers on the way into the mountains （Photo by Author）

Zhizuo is an important post on the Ancient Tea Horse Road along the Belt and Road. It takes about four hours to drive from town to the village of the Dress Festival.

One-third of the mountain roads are dirt roads, no asphalt paving, and the soil is mostly red soil, which is not suitable for vegetation growth, so the soil is relatively loose and rolling stones may slip off at any time.

The Road has not been completely built. There are some dirt roads, and the landslide section can be seen at any time.

Figure.6-45. Mountain road （Photo by Author）

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[8]Zhao Hui, Huang Yanping & Pan Zekai. (2016). The origin and development of the "Clothing Competition Festival" of Chuxiong Yi People. Science and Technology Vision (01), 60+89. doi:10.19694/j.cnki.issn2095-2457.2016.01.046.

entrance of the Dress Festival
（*Photo by Author*）

The enthusiastic Yi people at the entrance of the village spread pine and cypress leaves, holding barley cakes and congratulatory sachets to entertain guests from afar.

The enthusiastic Yi people at the entrance of the village spread pine and cypress leaves, holding barley cakes and congratulatory sachets to entertain guests from afar.

There is a popular saying in Zhizuo area: "When the gourd sheng sounds, the feet will be itchy."

Editing process; the audio is all the performance audio of the Yongren County Dress Competition, divided into short audio and all retained

The fifteenth of the first month of the traditional Chinese calendar is an important festival of the Yi people in Chuxiong, the "Clothing Competition Festival".

It is an important part of the intangible cultural heritage.

After thousands of years of inheritance

and evolution, with Yi embroidery as the theme, the competition is a form of expressing love for girls. .

Accompaniment instruments include suona, lusheng and the "three stomp" dance performed by the costume team, also known as "left foot dance".

The Yi villagers who came from the various cottages in the mountains, regardless of age and gender, all dressed up to participate.

Lantana flowers patterns and tiger patterns can be seen everywhere in his traditional costumes. The color of Ma Yinghua is rose red, and it is a moving rose red landscape coming from the small road in the mountains.

The researchers participated in the Yi nationality festival in February 2019.
🔊 ZHISR003MS Birds in the mountains

🔊 ZHISR004XY handicraft inheritor talks about the history of Jinsha River section, Che Jinshan Road

Figure.6-47. Village Mountain View during the Dress Competition Festival
（*Photo by Author*）

Figure.6-48. The picture shows the Yi nationality girls wearing festive costumes and dancing with their left foot, holding blessing sachets in their hands
（*Photo by Author*）
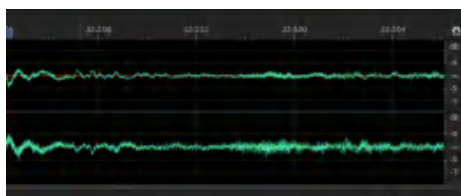
Figure.6-49 The waveform of the left foot dance in Audition
（*Own Source*）

🔊 ZHISR005MS After running all the way, we arrived at the Zhizhu site

Suona minor at the door greeted the distinguished guests, the left foot dance accompanied by the ethnic minority ringtones

Editing process; remove dialogue and flat key

🔊 ZHISR005MS

Activity started

🔊 ZHISR006MS activity started, host introduction, grandpa dancing

Editing process; take the previous paragraph

🔊 ZHISR008MS Yi language!!!

Editing process; remove the dialogue, keep the Yi nationality grandfather's speech, and then the female voice will be translated

🔊 ZHISR009MS Minor in the open mountains

Editing process; shorten

This is a relatively primitive and pure sacrifice activity. I felt the mysterious atmosphere of the local area when collecting sound on the ground.

Because he did not understand the Yi language, he felt the seriousness of praying for the protection of the gods from the act of killing chickens and offering sacrifices.

🔊 ZHISR0010MS Yi language!!!

Editing process; cut out mobile phone ringtones

🔊 ZHISR0011MS Yi language!!! Bimo Killing Chicken Memorial Ceremony

Figure.6-50 Have a meal before the activity, taken by the researcher at the activity site
（*Photo by Author*）

Figure.6-51 The scene of the Yi nationality's Bimo [9] slaying chicken sacrificial activity is a kind of wizard

（*Photo by Author*）

[9]Yi Bimo is a kind of wizard

Figure.6-52 Performing Embroidery Pictures
（*Photo by Author*）

Figure.6-53 The researcher took photos at the scene of the costume festival
（*Photo by Author*）

Figure.6-53 The sound curve of the Yi people's performance
（*Own Source*）

🔊 ZHISR0012MS Introduction to the Dress Festival

🔊 ZHISR0013MS

🔊 ZHISR0014MS

🔊 ZHISR0014MS

The Mandarin female voice introduced the source of the costume festival and the support of the local government to ethnic minority culture.

Editing process; noise reduction

An interception of the dancing tunes of the elderly Yi people in the distance

As can be seen in the figure, the MS sound track is more important than the 360-degree stereo collection of the outdoor sound ring, and the XY sound track is more important than the indoor ninety-degree sound track, so when doing sound post-processing and editing , You can choose different modes according to the different emphasis required for audio export.

🔊 SR0011MS the old Yi Man voice

🔊 SR0014MS，with the female voice
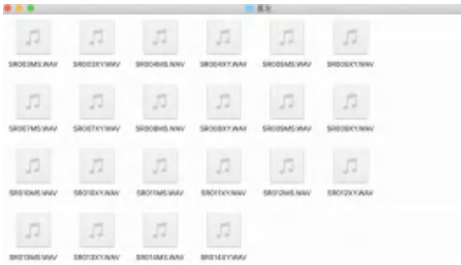
Figure.6-54 ZhiZuo Audio Sound Collection
（*Own Source*）

Figure.6-55 In the original sound of 🔊 *SR0011MS, intercept the sound curve of the Yi old man Bimo at the beginning of the show performance*
（*Own Source*）

Figure.6-56 In the original audio of 🔊 *SR0014MS, the audio curve of a mandarin female voice in the same background environment as the elderly Yi nationality.*
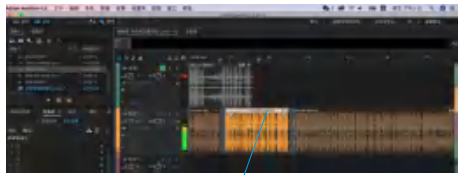
Figure.6-57 Editing in Auditon 1
（*Own Source*）

Yi MAN VOICE

WOMAN VOICE
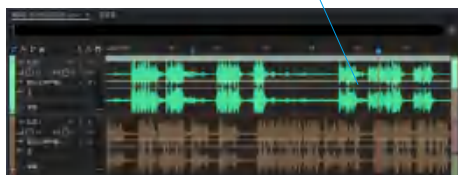
Figure.6-58 Editing in Auditon 2
（*Own Source*）
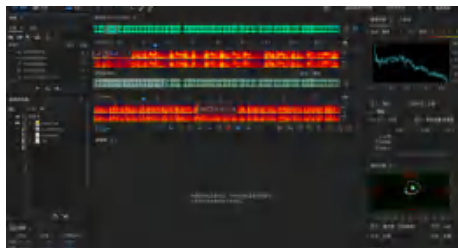
Figure.6-59 Take SR0014MS original audio as an example in Auditon
（*Own Source*）

Create a new multi-track file to import two different audio tracks, and use the cutter tool to cut the sound into two approximate lengths

Comparing and analyzing the sound track after synchronous amplification, the upper sound track is the male Yi nationality old man, the speech speed is gentle, and the frustration is obvious, and the lower is the Han nationality female middle-aged man, the voice is relatively thin, and the speaking speed is faster.

On average, more bytes are spoken per second, so more content is displayed on the curve.

It can be seen that the application of sound media art research to data in the direction of sound dialect research is very effective.

If you select "Advanced Mixing" in the AU workspace, you will get a page with not only audio curves but also sound data analysis.
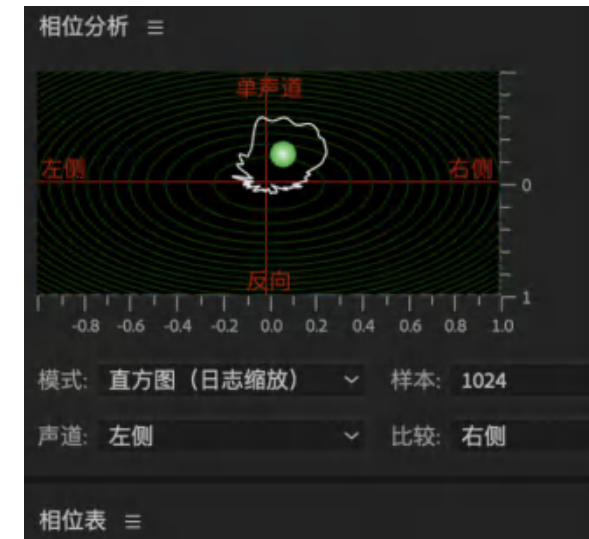
Figure.6-60 Longitudinal observation of sound phase in Audition
（*Own Source*）

And the data analysis of the sound source in the lower right corner. You can see a figure that looks like an egg spread out. The center point is the divergence of the sound source image.

Figure.6-61 Performance scene
（*Photo by Author*）

Figure.6-62 Performance scene 2 singing
（*Photo by Author*）

6.2.2 Yongren town Fashion Show

Date: 18 th Feb.2019

8:30 in the evening, county costume show

Shanghai Arts and Crafts Vocational College School of Fashion Show

🔊 ZHISR0015MS Drums in the wind

Editing process; starting from the fifth second, only drum sounds

🔊 ZHISR0015MS show begins

🔊 ZHISR0016MS show performance process

🔊 ZHISR0016MS Clapping

🔊 ZHISR0018MS

🔊 ZHISR0019MS

Editing process; noise reduction

The overall scale of the costume show in the county costume competition festival is relatively large, and the village performance in the costume competition festival has good acoustics, with a large number of visitors and a wide venue.

Figure.6-63 Performance scene 3 Moon Piano Play
（*Photo by Author*）

6.3 Handicraft Intangible Cultural Heritage

On the ancient Chinese Silk Road, many traditional handicrafts were spread to Europe through the Silk Road; this spread was two-way. Many excellent handicraft production methods were introduced to China from Europe.

This is also a kind of national integration. Mulberry paper made in Xinjiang is an important carrier for the preservation of important cultural relics. Because of its ancient production methods, many paper records of ancient documents have been passed down to this day.

6.3.1 The soundscape of mulberry paper handicraft in Hetian Moyu area, Xinjiang

Xinjiang Hotan Mulberry Paper

17ᵗʰMay 2019

The Urumqi region of Xinjiang is an important part of the Silk Road. Passing through the Dunhuang area and continuing north to reach the Xinjiang area, Urumqi is now the capital of Xinjiang Province.

It is very regional and should be used for multiple audio collections. However, due to the virus in 2020 and policy reasons, the only audio collection is Xinjiang Hotan. Moyu Mulberry Paper Mill.

Follow the sound collection team led by Professor Josep Cerda of the University of Barcelona to Hetian Moyu, Xinjiang, to collect the sound of mulberry paper craftsmanship.

A total of 38 audios were collected, and 28 audios can be used after

being processed and modified by the

researcher.

Xinjiang mulberry paper originated from the Han Dynasty. It is a local traditional handicraft and intangible cultural heritage in Xinjiang. It was discovered in 1908 by the controversial British Stein[10] （Marc Aurel Stein 1862—1943）.

The craftsmanship of mulberry paper has historical and cultural value. The mulberry paper making technique has a history of thousands of years, and it is a relatively ancient crafting technique. The mulberry paper-making technique is actually a symbolic act that carries meaning. It is not a meaningless "signifier", but a combination of "signifier" and "referred" with specific cultural meaning. This symbolic behavior condenses the labor and wisdom of the working people of the Chinese nation a thousand years ago, and it also carries the

splendid papermaking civilization of the Chinese civilization. More

importantly, it is a living fossil that has witnessed the progress of human civilization. Each process of the mulberry paper production process is a behavior symbol, which carries historical and cultural information, and each process is the crystallization of ancient folk wisdom. Therefore, the inheritance and protection of this intangible cultural heritage is of great significance to our country and even human civilization.（Yu& Wang, 2018, p.129）[11]

The mulberry paper-making process first uses mulberry bark as the raw material, and then undergoes nine steps such as soaking, stripping, boiling, pounding, fermentation, filtering, and moulding to finally make mulberry paper.

Put the mulberry bark into a large iron pot filled with water and boil, stir while boiling, until the bark is cooked and soft, then add Populus euphratica.

Figure.6-64 Mulberry paper peeling process 1（Photo by Prof.Josep Cerda）

The mulberry bark is boiled and pounded in an iron pan: Take out the cooked mulberry bark and place it on a thin rectangular slab.

The craftsman kneels in front of the slab, covers his legs with a piece of cloth, and then raises a short head with a handle Smash the mulberry with a long wooden hammer, turning it over while smashing, until the mulberry is smashed into a mud cake.

Audio collection for washing, sizing, and intensive beating：

🔊 **Fabrica de PAPEL1**
🔊 **Fabrica de PAPEL2**
🔊 **Fabrica de PAPEL3**
🔊 **Fabrica de PAPEL4**

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[10]Controversial explorers and archaeologists, without too much explanation

[11]Yu Fuhua & Wang Min. (2018). Xinjiang mulberry paper making process inheritance strategy. Xinjiang Art (Chinese) (03), 127-131. doi:CNKI:SUN:XJYH.0.2018-03-019.

Figure.6-65 Mulberry paper peeling process 2
（*Photo by Prof.Josep Cerda*）
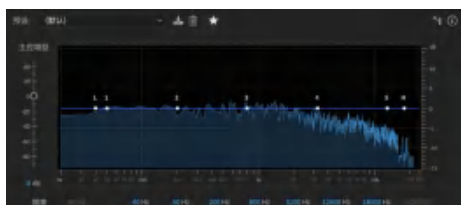
Figure.6-66 intensive beating line in Audition
（*Own Source*）

Figure.6-67 Mulberry paper peeling process 3 pond
（*Photo by Prof. Josep Cerda*）

Put the mulberry bark into a large iron pot filled with water and boil, stir while boiling, until the bark is cooked and soft, then add Populus euphratica.

The mulberry bark is boiled and pounded in an iron pan: Take out the cooked mulberry bark and place it on a thin rectangular stone slab.

The craftsman kneels in front of the slate, covers his legs with a cloth, and then raises a short head with a handle Smash the mulberry with a long wooden hammer, turning it over while smashing, until the mulberry is smashed into a mud cake.

The rhythm of the beating can be seen from the curve

Fermentation into the mold: mix the smashed mud cake with water and put it in a wooden barrel half buried underground for fermentation. After taking it out, pour the pulp into the mold and use the wooden stick with a small cross on the head Stir constantly to spread the pulp evenly on the mold. After the pulp is evenly spread, take the mold out of the small sink with the flat end.

Figure.6-68 Mulberry paper peeling process 5 water wave
（*Own Source*）

Figure.6-69 Mulberry paper peeling process 5 Papermaking
（*Photo by Prof. Josep Cerda*）

Figure.6-70 Mulberry paper peeling process 6 drying
（*Photo by Prof. Josep Cerda*）

Papermaking and drying: Put it in a place where the sun can get enough. After the pulp is dried on the mold, a piece of authentic mulberry paper is torn off

The mulberry paper dried in the courtyard has the characteristics of insect proofing, strong tensile force and not easy to fade.

The mulberry paper produced by traditional technology is yellow, with very fine fibers, fine impurities, good toughness, soft texture, strong tensile force, non-breaking, non-toxic and strong water absorption, writing on it will not soak, if the ink is good It will not fade for a thousand years, will not be infested by insects, and can be stored for a long time.

When the sound collector walked from his residence to the characteristic song and dance restaurant in Xinjiang, he conducted a sound scene collection.
Other sound：
 🔊 Persones del camp parlant i carr-
   icoches
 🔊 Recitat del Coran al camp
 🔊 Venedor ambulant amb moto

All the sounds included the sound of street sweeping. That is to say, in Xinjiang, due to the drought of the region, the sound of water trucks sweeping the street Occurs at multiple times a day.

Therefore, all the soundscapes of Professor Josep Cerda contain the more obvious sound of sweeping the street.

Another regional characteristic sound is the sound of local residents reciting the Quran in the morning. Only in areas where Muslims live.

 🔊 Mercat Nocturn de Xingjiang1
 🔊 Mercat Nocturn de Xingjiang2
 🔊 Mercat Nocturn de Xingjiang3

Observe the overall audio phase and frequency changes of different time nodes in the northern Xinjiang market
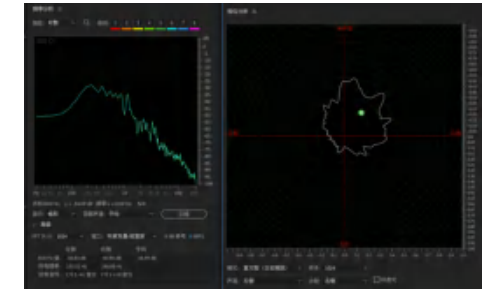
Figure.6-71 audio phase 1 of northern Xinjiang market in Audition
（*Own Source*）

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Using modern sound media art, the skills of local craftsmen and the background sound of the local environment are preserved in the form of sound files. Establish a database of sound intangible cultural heritage to protect and inherit regional cultural heritage.

6.3.2 Soundscape of embroidery handicraft in Yunnan area

Date：28ᵗʰJuly 2020

Xichou Town Dongzheng Street

The embroidery work on Xingjie Street in Xichou County, Wenshan, Yunnan is a traditional national craft with a long history, superb skills and high practical appreciability. It has distinctive local national characteristics.

Introduce the principle of throwing embroidery

The throwing embroidery needle method is special, the front side is embroidered, and the velvet-like effect is drawn on the back side.

The main place of sale is Vietnam. Four workers work on a simple piece of embroidery for two days. The cost is 200 yuan and the price are more than 300 yuan.

🔊 IMG3089.MOV
🔊 IMG3090.MOV

Figure.6-72 Interior photo of the embroidery workshop on Dongzheng Street, Xichou Ctiy（Photo by Author）
Figure.6-73 The picture shows the embroidery workshop of the poverty alleviation workshop in Xichou City（Photo by Author）

It can be seen from the figure that the production of polished embroidery has changed from all manual to partial machine production, some of which can achieve small-scale mass production, and hand-sewn with experienced female embroidery workers.

Mainly sold from Yunnan area to Southeast Asian countries.

Figure.6-74 The picture shows the working photos of female workers in the embroidery workshops（Photo by Author）

Figure.6-75Comparison of machine embroidery and manual embroidery（Photo by Author）

As can be seen in the picture, the embroidery of the Zhuang ethnic group is much more exquisite than that of the Yi ethnic group in Chuxiong, Yunnan.

Yunnan has a large area with sparsely populated people, and many villages have no formal shops.

The liveliest place is the market in accordance with ethnic minority practices, usually on weekends or special festivals. Only at this time can you buy some special supplies.

Before the Internet and express delivery were developed, these embroidery products were difficult to sell and promote on a large scale.

But now with the delivery service, ethnic embroidery products are recognized by more and more people, and some ethnic minority characteristic products are developed and handed over to small local workshops for production, and then distributed to every household, some 70 to 80 years old The elderly are still involved in the production of embroidery.

Date：8th Jan 2021 Cha Mountain，Yunnan

On January 8, 2021, the researchers followed local friends of the Zhuang nationality to visit a weekend market in the Cha Mountain area of the Zhuang nationality, and recorded the unique soundscapes and pictures of the local people. The entire market stalls are all temporarily placed, occupying both sides of the main road.

The entire bazaar did not have the size of the bazaar imagined by the researchers.

The location of a few individual households selling embroidery and ready-made clothing.

The whole road was very muddy because of the heavy rain. In addition to the stalls selling daily necessities, there are also some local vegetables.

In the middle several times, the road was congested and unable to pass because of cars passing by on both sides.

The road is about 1.5 meters wide. It starts at eight in the morning and ends at four in the afternoon.

The researcher went straight to several small stalls selling embroidery from the market room.

🔊 ZOOM0004.WAV Cha Mountain wav

It can be seen from the map that the entire sound environment of Cha Mountain is not high, but there are individual high notes.

That is to say, the sound of car horns sometimes happened before.
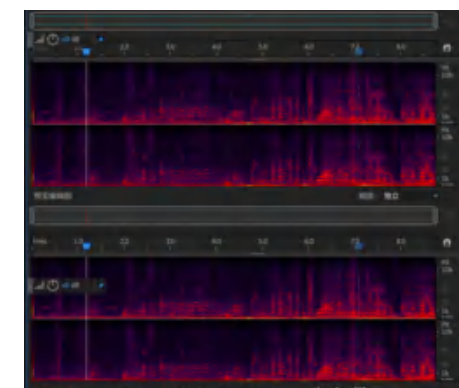
Figure.6-76 Cha Mountain wave in Audition
（Own Source）

Figure.6-77 Thick colored embroidery thread in various colors at the market
（Photo by Author）

Figure.6-78 Half handicraft lace in the Market
（*Photo by Author*）

Figure.6-79 Duck farmed on the roadside in Cha Mountain area
（*Photo by Author*）

It can be seen from the figure that the color of the line is very bright. In the areas where many ethnic minorities live in western China, because they are located in the mountains, they see red soil, green vegetation and some stone mountains every day.

People in these areas like to wear colorful clothes, and they have left China in the heritage of the Silk Road history and culture. Early ethnic minority dressing customs, but some embroidery handicrafts are gradually combined with small modern machines due to complex procedures and long working hours.

Many workshops are half automatic and half manual. However, the prices of handmade works and clothing in the market are much higher than those of semi-mechanized products.

Figure.6-80Exquisite buckle embroidery works of Zhuang nationality in Guangnan City Museum
（Photo by Author）

Figure.6-81 You can see the rhythm of the black birds singing in the Audition（*Own Source*）

Figure.6-82 On the left is a screenshot of the birdsong, and on the right, join the link. Below（*The picture comes from :https://wapiknow.baidu.com/question/265553182.html,2011*）

6.4 Soundscape analysis under unique social environment

6.4.1 Soundscape comparison of ethnic minority settlements

The study of the soundscape of the ecological natural environment of ethnic minority settlements is of great significance to the protection of the unique soundscape of the ethnic group.

The soundscape of natural environment is an important part of regional heritage.

The records of bird song and insect song are records of the ecological environment of a region. In addition to different sounds, different types of bird sounds have different wavelengths in the audio spectrum.

Birdsong in the natural environment can cause resonance with human behavior.

The sound of industrial activity is a negative noise that has an impact on emotions and human life, and the ecological environment in areas where birds and insects are active has a positive impact on the human body.

The ecological environment in the Chuxiong Yi area is relatively good, and the monitoring of bird activities is of great significance to the local environmental protection.

Hieroglyphics are used in many places in minority areas, and many places have their own totems.

For example, the Zhuang people in Guangnan County use "birds" as their totems, and you can see ornaments made of bird patterns everywhere.

A comparison of the Birdsong Atlas and Chinese Xiaozhuan[12]after zooming in You can refer to the "Bird and Beast-shaped Zun"[13]of the Yi nationality in ancient China.

Researchers have found that the text created by the wisdom of ancient Chinese coincides with the audio curve of birdsong.

This is a discovery that no one had done before in this study. Inadvertently discovered when processing audio curves.

Figure.6-83Map of key areas for sound collection in Yunnan（*Own Source*）

[12]A Chinese traditional calligraphy font. The literature carried out can be consulted on the website: http: //www.baidubake.com
[13]Ren Jiaxian. (2021). Reconsideration of the shape of the bird and beast in "Zhou Li". Academic Research (01), 173-176. doi:CNKI:SUN:XSYJ.0.2021-01-020.
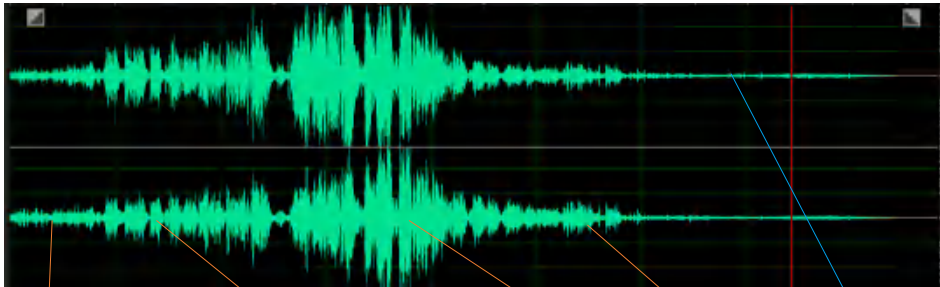
Figure.6-84 Sound in Xinjiang Market
People in Xinjiang talking, vendors hawking 1 vendor hawking 2 singing, background
noise in a static environment（*Own Source*）

In the process of the researcher's overall sound collection, the Yunnan region was used as a sound sample to collect sound from several important places on the Silk Road:
Comprehensive analysis of the ecological landscape environment, humanistic environment and the preferences of ethnic groups in Yunnan minority areas.

The collected multi-point and diversified initial sound types are classified and the soundscape database is established, and the sound media art is used to spread it by constructing an interactive soundscape map.

Commercial activities are underdeveloped in Yunnan and Xinjiang, retaining the traditional temporary market model in the history of the Silk Road.

Minority bazaars are temporary

The cries are the main sound source that appears in the market, and the various dB of cries are also a shapeable soundscape of fireworks and fireworks, coupled with the background music of ethnic singing and dancing with the characteristics of Xinjiang. The voice recognition is very high.

6.4.2 Comparison of folklore soundscape in ethnic minority areas

Record the etiquette, folk musical instruments, costumes, dance rhythms, etc. in traditional festivals of ethnic minorities.

The focus area of this research is the clothing competition festival in the Yi ethnic area of Chuxiong, Yunnan.

The artistic features of the Yi nationality's chicken head hat and lantana flower patterns in its traditional festival costumes and the rhythm of folk dances, etc., have fully recorded and preserved their traditional festival rituals.

Records of activities such as sacrifices and blessings before the beginning of the festival in the Yi people's beliefs.

Taking the study of folklore soundscape as a starting point, the study of cultural activities specific to religious festivals in ethnic minority areas in Yunnan.

Music and dance are a way for ethnic minorities to spread folk culture. In some areas, ethnic groups have even lost their own writing.

Word of mouth has become an important means for the continuation of folk culture. It is also an important carrier of folklore literature.

In addition to the "Clothing Competition Festival" in Yongren, Chuxiong, Yunnan, the traditional festivals such as "Torch Festival" and "Flower Arrangement Festival" as well as unique arts such as Yi folk songs and dances were searched for literature.

Different styles of music in festival assemblies are a way of chatting and expressing emotions in Yi culture or Zhuang culture.

Because of the long distance between the settlements and the rugged mounta-

in roads, in the age when communication was underdeveloped, singing became an important way of narration, expression, and communication in the villages.

When major festivals are held in the settlement, the instantaneous sound pressure value is close to the burst table. Music rhythm is the center of the sound field.

The unique musical instrument performance and the performance of the five steps and work props unique to ethnic minorities have become a primitive and inspiring rhythm.
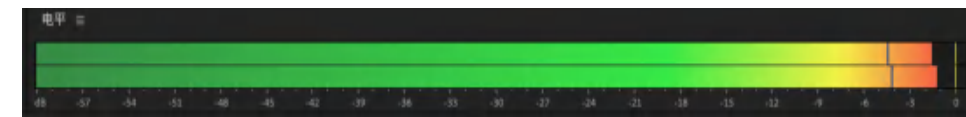
Figure.6-85 The 15th day of the first lunar month of the costume festival is in the straight left soundscape dB
(*Own Source*)

Figure.6-86 Import the video into the audio software to find the stripped audio track
（*Own Source*）
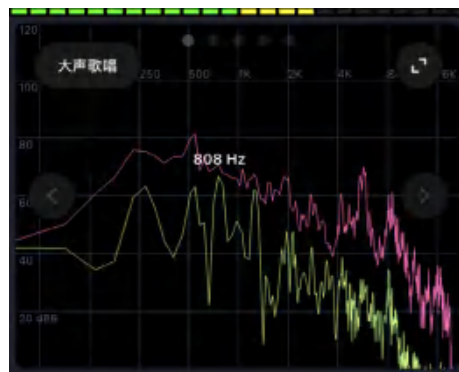
Figure.6-87 String rhythm audio curve value in Sound analysis software
（*Own Source*）
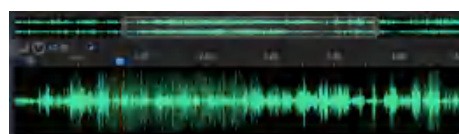
Figure.6-88 The curve change of string rhythm audio curve in Audition software
（*Own Source*）

It can be seen in the figure that the soundscape dB is already 100%

Research on the tone and rhythm of self-made folk instruments;

Comparison of the spectrum between the moon piano and the string:

The overall style is brisk, and the pronunciation is crisp. There is a joyous atmosphere of singing and dancing. It is a way of expressing the daily entertainment of ethnic minorities.

Various forms of performances, singing, male and female duets, and national musical instruments have become an important part of ethnic minority festivals.

Therefore, the researchers' records of their festival activities are the protection and inheritance of ethnic minority folklore festivals.
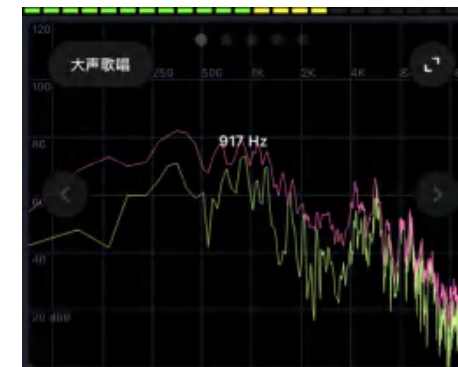
Figure.6-89 Moon piano rhythm curve value in Sound analysis software
（*Own Source*）

Figure.6-91 Gourd Sheng and Bamboo Flute in Yunnan Yi Autonomous Prefecture
（*Own Source*）

Figure.6-90 Changes of Moon Music's Audio Curve in Audition Software
（*Own Source*）

Figure.6-92 Flute rhythm curve in Auditon on the festival
（*Own Source*）

Comparing string instruments, we can see that the rhythm is more obvious

The collection of the sound of the moon piano in the Yongren festival highlights a cheerful festive atmosphere. All repertoires are self-directed and composed and performed by singers and singers.

Singing in folk festivals is an important way for people to express emotions, tell history or pass on national culture. In many places along the Silk Road, the land is vast and sparsely populated.

People face the Gobi Desert or the mountains every day and stretch their broad minds against the background of the vast sound range of nature.

Table 6-2 Comparison of the spectrum of the drum sound in the competition festival

Comparison chart of dB under different Hz of drum sound
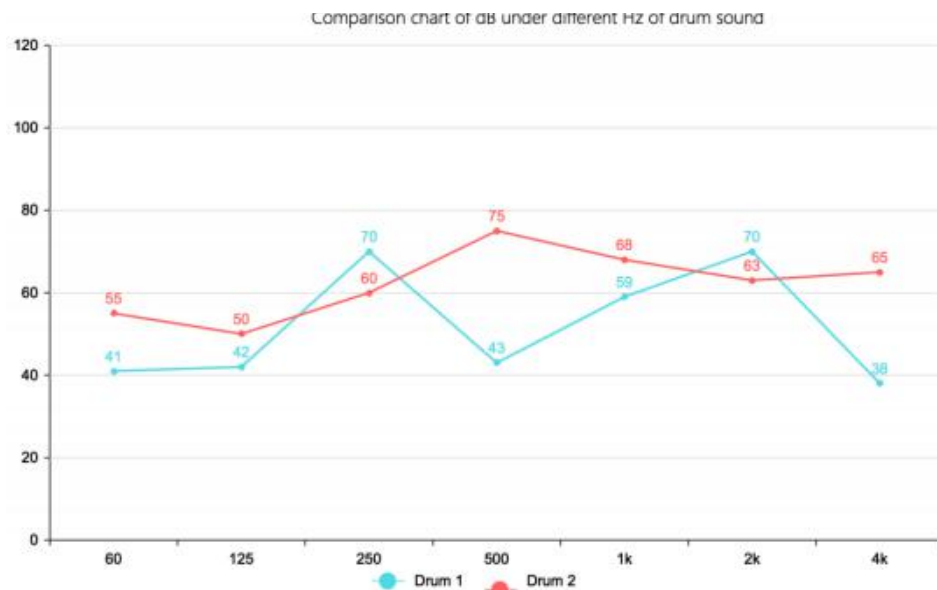
It can be seen from the curve that the rhythm of the drum sound is very obvious

At the same time, it investigates the language history of the Yi and Zhuang people in Yunnan, extracts and summarizes their national cultural elements, and makes oral records of the elders who are proficient in Yi language, so as to keep and file the traditional language and culture of the Yi people.

In the study of the Zhuang nationality, the Poya Songbook, which incorporates poems into 81 graphic characters, has become the focus of this section.

Incorporating the explanations, singing and tones of local Zhuang professors to synthesize the local ecological bird's song, the re-established Silk Road Poya Song Book sings and becomes a new bright spot in reproducing the sound of the Silk Road.

Poya Song Book is an important part of the intangible cultural heritage of the Zhuang nationality. Male voice, female voice, love song duet and other expressions express the life and love of young men and women, reflecting the civilization of the farming era and the wisdom of ethnic minorities.

In October 2020, it will be exhibited in the digital media art section of Shanghai Liu Haisu Art Museum by way of exhibition.

Among them, the sound QR code is a permanent and valid QR code, which can be played with the "scan" function in the mobile phone.

Restore and reproduce the fragments of Poya songbooks sung by ethnic minorities deep in the mountains.

Table 6-3 Poya song sound label

(This is the label format designed by Author)

FolkSongs of POYA Village

September 2020

声音标题：坡芽歌书
声音采集者：张明好
声音描述：坡芽歌书鹧鸪叫
地点：云南文山壮族富宁县
日期：2020年9月
时间：下午
天气：晴天
声音标签：坡芽歌书音频创意
声音采集仪器：ZOOMH2n
关键词：鹧鸪叫

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
• 特有文化声音
声音符号
历史的声音
口述声音

Title: FolkSongs of POYA Village
Sound collector: Zhang Minghao
Voice Description: Poya Song Book Description
Venue: Funing，China
Date: September 2020
Time: afternoon
Weather: Sunny
Voice tag:FolkSongs of POYA Village
Sound acquisition instrument: ZOOMH2n
Key words: Oral voice of Zhegu

图片由文山学院陆林锋老师提供
The image From Lu Linfeng， Wenshang University

Sound type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
• Unique cultural voice
Sound symbol
Historical voice
Oral voice

6.4.3 Comparative analysis of intangible cultural heritage handicraft soundscape

The importance of protecting the voice of regional intangible cultural characteristics

There are many types of intangible cultural heritage products in ethnic minority areas, but most traditional handicrafts have gradually been replaced by industrial production.

From the history to the present, many handicraft varieties have the risk of cultural loss.

Research on the intangible cultural heritage of Yunnan ethnic minority areas, excavate and sort out the inheritance of characteristic handicrafts, with Yi embroidery, lacquer making and silver jewelry making as key voice records.

Interviews with inheritors of handicrafts were conducted to gain in-depth understanding of their handicraft sources, production techniques, etc.

Figure.6-93 Observation of the sound track of the Huahua embroidery factory
（*Own Source*）

Figure.6-94 Sound Atlas of Traditional Handicraft Paper Mills in Xinjiang
（*Own Source*）

The rhythmic sound of pulp beating from Xinjiang Paper Mill. It can be seen from the figure that the craftsmen have an even rhythm and a smooth and balanced voice. Is a very skilled craftsman.

The spread of handicraft intangible cultural heritage requires a kind of ingenuity. The researcher's recording of his voice,

The overall soundscape of the paper mill is relatively quiet. Only the audio is collected from every process of papermaking in the factory. Occasionally, some Xinjiang tunes are broadcast on the radio.

It can be seen that the production process of the entire handicraft factory workers is a kind of tradition, and not only the slow movements show the traditional handicraft production process.

In the protection and inheritance of intangible cultural heritage, because the life of the ancients was very slow, all the processes were completed one by one. Unlike today's industrialization all win with speed.

These craftsmen enjoy their production process. The researcher's recording of his voice is also a kind of protection.

The steps of beating are in line with the principle of making mulberry paper.

When a new apprentice enters the door, you can first listen to the rhythm of the sound to judge the number and rhythm of the mallet falling. At the same time, this primitive skill can evoke a memory of the lives of the predecessors.

The Yunnan Embroidery Factory has developed into a small craft workshop, so the overall sound curve is more complicated, and many human voices and machine sounds are mixed together.

After researchers record, analyze, and study the sound of the intangible cultural heritage of handicrafts, the sound is included in the sound media library, and the simplest way of spreading by two-dimensional code, the sound can be spread all over the world.

 It is not only the voice of Silk Road craftsmen, but also the spread of spirit. Perhaps in a traditional paper-making workshop in a certain corner of Europe, similar skills are repeating the production and sales of traditional handmade paper day after day.

And what Xinjiang Hetian Moyu Mulberry Paper Factory brings may be an order or a reflection of a traditional technique, or a visit to the Museum of Contemporary History.

6.5 Result

From the entire field survey that the researchers went to Yunnan three times in total. The spread of handicraft intangible cultural heritage requires a kind of ingenuity.

The overall soundscape of the paper mill is relatively quiet. Only the audio is collected from every process of papermaking in the factory. Occasionally, Xinjiang tunes were recorded when the production process of the entire handicraft factory workers is a kind of tradition, and not only the slow movements show the traditional handicraft production process. In the protection and inheritance of intangible cultural heritage, because the ancients' lives were very slow, all the processes were completed one by one. Unlike today's industrialization, all win with speed.

These craftsmen enjoy their production process. The researcher's recording of his voice is also a kind of protection. The steps of beating are in line with the principle of making mulberry paper. When a new apprentice enters the door, you can first listen to the rhythm of the sound to judge the number and rhythm of the mallet falling. At the same time, this primitive skill can evoke a memory of the lives of the predecessors.

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By the end of this chapter, all the research and practice parts of this doctoral thesis have been completed. This chapter mainly focuses on the protection of intangible cultural heritage on the Silk Road. Through early observations and focus group discussions, to festivals, ethnic languages, and their unique embroidery, the areas where ethnic minorities gather in Yunnan also contain a lot of music, dances, and characters composed of graphics. It is worth continuing to study and discuss.

The papermaking method of Xinjiang Mulberry Paper Mill has been preserved from ancient China to the present day.

The team by Professor Josep Cerda of the University of Barcelona to collect sound. We believed that its influence in the world is more significant than we expected. Therefore, the research goal proposed in this doctoral dissertation is innovative through sound recording of "the protection of the intangible cultural heritage of the Silk Road". And can achieve the expected hypothesis. In chapter, VIII will discuss the research conclusions in general.

Chapter VII
Innovative Application of the
Silk Road Soundscape

7.1 Construction of sound media library

The research objective of this chapter is to make innovative applications of sound-scape in multiple dimensions after the completion of sound collection and investigation in key research areas on the Silk Road. The whole research idea extends from natural soundscapes, cultural icon soundscapes, and unique social and cultural soundscapes to multiple dimensions, exploring the possibilities of various artistic innovations.

Based on the theoretical research foundation of the previous chapters, this chapter is using as the expanded creative part of practical research, and the creative is divid into four parts：

Table 7-1 Four-step Creation Idea

Research the ideas and steps of creative overall design

In creating the sound media library, the focus is on recording and researching the soundscape of the ecological environment, historical relics, and the direction of ethnic minority festivals; combining scientific and logical working methods with artistic expressions to make the sound design system practical and beautiful.

According to the musical instruments on the Silk Road,

the sculptures and paintings of the Yulin Grottoes and Mogao Grottoes,

The sound sculpture design was carried out; in terms of interactive multimedia art, the sound data included in the sound media library was activated to become visible and visible.

I am listening to, searchable sound map. In terms of sound museum applications, combined with online APP and offline exhibitions, the sound museum is designed with virtual and interactive multimedia. The voices on the Silk Road are presented to people in diversified forms.

Table 7-2 How to build a sound media library

	Establishment of the Silk Road Media Library	
Author	Name of the author of the sound collection	Wang Linlin
Title	Sound collection location or event naming	Catedral de Barcelona
Record length	This includes minutes or seconds	1'10
Equipment name	Professional sound collection equipment	Zoom H2n
Location	Try to describe in detail the general situation of the sound collection location, such as the name of the location, population, street, whether it is the center of the city or an important scenic spot.	41.384447, 2.176759
Coordinate	GPS coordinates or GOOGLE map coordinates	41.384447, 2.176759
Latitude Longitude	Google Maps Latitude and Longitude	41°23'04.0"N 2°10'36.3"E
Time and date node	Record in a fixed pattern, such as: 26/08/ 2016, 21:08.	1/09/2016
Sound collection type	City Sound for example	City center
Label	In order to help establish the search	Gothic Revival architecture
Soundscape conditions	Information to help build a sound media library	Morning, sunny
description	Use concise language to describe the environment, phenomenon, etc. to help understand the sound file.	There are many tourists, there is a second-hand antique market in front of the door, and beggars. And a lot of jugglers
Data record	The type and model of the instrument used for sound collection and recording	.WAV format file/.MP3 format file
Sound quality	Grading the audio collection from 1-10	Noisy sounds need to be recorded more than recorded, and the internal sound capacity frequency is used to record the sound level into 5 levels.

See the construction details from the table

Applying the research methodology and research model of Chapters 1 and 3, as well as four-year visits and research reports in Chapters 4, 5 and 6, more than 300 audio clips, several video clips, and images and pictures were obtained.

These sounds are original, first research samples without any processing.

The application of modern digital media technology to the first scene of the researcher's voice collection leaves a certain time node in the history.

A torrential rain before and after the investigation of the Longmen Grottoes in Luoyang recorded the changes before and after the rain, which areas in the Longmen Grottoes of Luoyang had water leaks after the rain, which had been repaired and which were repaired in China in the 1990s but reappeared in modern times. The cave of the problem.

All sound collection materials must be completely rearranged before they can be included in the sound media library.

The researcher did not know some accidental sounds that broke into the sound collector during the sound collection process.

For example, sudden sneezing, sudden chatting. Sounds such as frogs croaking in a certain natural environment landscape recorded by accident.

After recording hundreds of sounds, the researchers concluded a complete "sound media library" construction plan:

a) Before preparing for sound collection, you must bring enough batteries and SD card. Many historical districts, villages and towns are sold without batteries. When traveling, you can collect sounds that can be collected, even if you don't have a sound collection device, you can use your mobile phone or ask a companion to help

you collect the sound.

The more prepared, the more valuable the sound collection data

b) The sound editing software edits the sound and performs the overall editing on a local basis. Many sound fragments appear in the previous audio and may continue to appear in the next audio.

A complete audio needs to be spliced up and down and then edited. The spectrum analysis in the AU software can quickly find the place with the brightest color is the place with the highest dB and the densest sound, which can save a lot of unnecessary time to listen to the entire recording.

It is good to use this method when you forget to turn off the sound acquisition instrument and produce a recording of 80 minutes.

c) The establishment of the sound media library is a process of gradual accumulation. Therefore, all necessary content must be filled in at the beginning of the establishment, including what modifications have been made to the original audio.

As shown in the figure below, taking the Longmen Grottoes in Luoyang as an example, the sound collection time, location, number, sound type, sound content, and coordinate information are recorded.

The original collected sound code is reset, for example, the original audio is SR0026.WAV, After sorting out, "LUO" is added to distinguish the first syllable of the place. Change to "LUOSR0026.WAV" or "LUOSR0026.MP3" and convert the format according to audio needs.

 In many streaming media software or APPs, the requirements for the sound itself are not high, and the speed requirements are high, so the MP3 format is used to accelerate the speed of sound uploading or downloading.

Table 7-3 Luoyang Longmen Sound Media List

It can be seen from the chart that a total of 15 sounds were collected, and 14 final audios were obtained after editing and merging.

Sound label design

The sound label is designed to facilitate the sorting and display of each sound recorded in the sound media library.

This research establishes a complete sound media art creative practice system through research and practice on the Silk Road, summarizes the types of sound media art collection, collection equipment methods and sound label establishment. And use digital media art methods to artisticize the collected sounds; and combine the design of installation art to design sound media art installations.

For the sound types mentioned in Chapter III, every label must have sound, sound type, collector, collection location, and the photo at the time, and have a sound tag number.

Researchers divide the labels according to regions when designing sound labels. It is not classified according to the sound category, which is convenient to show the sound richness of a certain place.

The researcher visited according to the location when conducting sound collection. But in the previous chapters IV, V and VI of the analysis and comparison, they were distinguished by the type of sound. In the entire research process, a certain amount of accumulation is required from recording sound to learning to compare and analyze. Only after studying sound clips of several locations,

After accumulating and editing, it was analyzed that the wind noise was more obvious in some places, the bazaars in some places were similar, and in some places, there were more birdsongs.

According to the researcher's main research directions and methods, the "reproduction", "Silk Road" and "sound media art" are still the research focus, so the sound label distinguishes the region by color.

This method can be used to find the fastest way to find out how many sounds "Xi'an" has and how the whole city's ecological environment is.

Table 7-4 The sound label design of Yulin Cave Ruins, Yulin Cave is located in the desert, choose the color closer to the geography:

Yulin Cave Ruins
20 July 2018

Title: YULINSR0014MS
Sound collector: Linlin Wang
Sound description: Buddha oxidation black
Location: Yulin Cave Ruins
Date: 20.7.2018
Time: Afternoon
The weather: Sunny day
Sound tag: Yulin Cave Ruins
Sound collection instrument: ZOOM H2n
Key words: Guided tour

No.107

Different layouts of sound labels designed by researchers, highlighting information such as pictures, sound names, collectors.

Table 7-5 Factory of Paper Sound

Chapter VI explains and edits the sound collection and protection of Xinjiang handicraft intangible cultural heritage. Scan the QR code to hear the sound of water from the factory.

The title of each sound should have a paragraph, and the sound collector recorded the environmental time and sound content at that time in Mandarin.

There are all sound tag numbers and an overview in the attachment.

These are two different types of sound labels. The first one has more Chinese design characteristics, and the second one is more in line with international standards.

Therefore, in all the following sound labels, the second type is used as the template. Because the sound labels are prepared for participating in the sound museum exhibition, all labels have Chinese and English sound labels, so some pictures in the later typesetting are relatively small.

All sound Lable check：

Chapter X SUMMARY
Sound label summary

7.2 Soundscape map based on sound media library

After the Silk Road sound was collected and incorporated into the sound media library, the mapping of sound became an innovative and important application of this research.

The sound map was originally designed to radiate the surrounding core area sound with the collected location as the center as the initial 1.0 simple version of the sound media library map.

Table 7-6 Map of Dunhuang area map design ideas
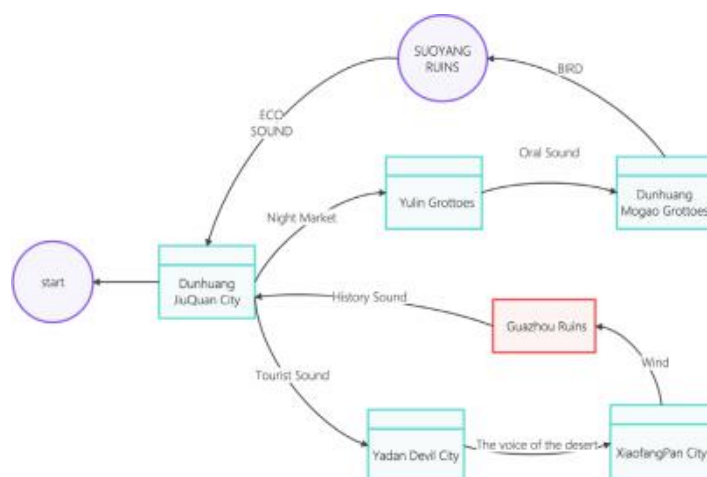
Take the researcher's voice collection route map as the division area point

7.2.1 Sound map design

In the research process, after the previous practical chapters are classified according to the sound type, they become natural sound landscapes, urban cultural symbols, and unique sounds are distinguished by sound types.

Therefore, the researchers created several sound maps for different design categories and uses as follows:

Table 7-7 Map of the desert area:
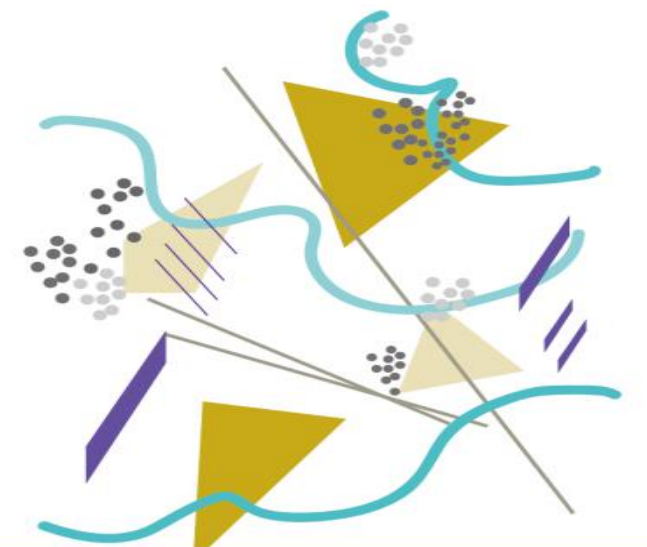
Evolution 2.0 version of the abstract
Express the sound distribution in the desert area with an abstract graphic and color Imitating of Spanish artist Joan Miró[1]

This is an abstract map representing the ecological sound landscape of the desert.

---

[1] Spanish surrealist painter，Retrieved from：https://www.moma.org/artists/4016

The purple oblique quadrilateral represents the wind, the thin actual line represents the occasional whistle sound, the dotted image represents the sound of birds, and the pink-blue curve represents the sound source of the water, which can be a river or it. The sound of rain.

The triangular yellow area represents the yellow soil in the desert

Figure. 7-1 Inspired by the old embroidery piece "Tin Embroidery"
in Wenshan Prefecture
(Photo by Author)

Table 7-8 Handicraft sound map design
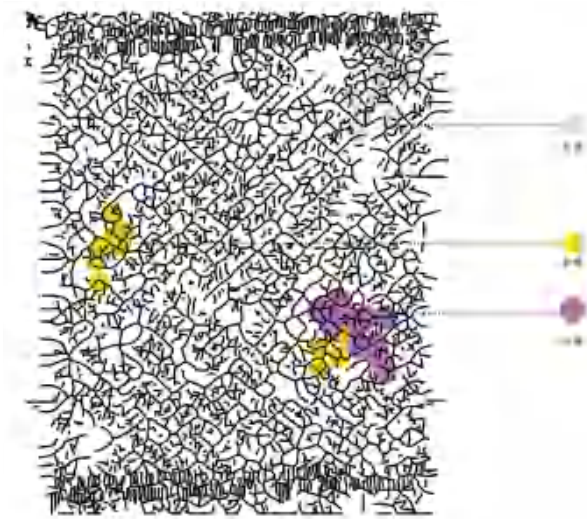
The abstracted texture pictures resemble the mountains of Yunnan that the researchers visited, and more like the fission surface in the desert. The handicraft intangible cultural heritage on the Silk Road is very scattered.

The khaki area on the map represents the paper mill, and the pink-purple area represents the handicraft embroidery factory.

Table 7-9 Ecological environment map in Xi'an Xiaoyan Pagoda Park area

This is a virtual cartoon soundscape map suitable for tourist attractions with two-dimensional code soundscapes

Many Silk Road areas are open to young people and children. This simple and neat design is used to attract young people to listen.

The above several different types of maps are more creative and suitable for applications in more abstract fields such as sound map creative design, derivative design, and Silk Road Sound Media Art Exhibition.

7.2.2 Soundscape map program code design

This research is conducted in the form of field investigation, combining theory with applied practice. Therefore, the more traditional map design method is adopted in the end, combined with the sound and design sense of the icon creative design.

Based on the establishment of the Silk Road sound media database, several important soundscapes in the "desert areas" Dunhuang, Yulin Grottoes, Dunhuang Mogao Grottoes, Yadan and Guazhou Ancient City, and Suoyang City were selected for soundscape map design and production.

In the Yuan Dynasty in Chinese history, this area was an important checkpoint and key research area on the Silk Road:

The picture Figure. 7-2 is the base map of the Northwest Desert Region in the stand-alone version of the Sound Media Library. All the legends are redesigned and defined.

Figure. 7-2 Dunhuang base map，designed by Author
(*Own Souce*)

Figure. 7-3 Audible sign
(*Own Souce*)

Figure. 7-4 Cropped picture of the Ta'er Temple at the site of Suoyang Ruins
(*Own Souce*)
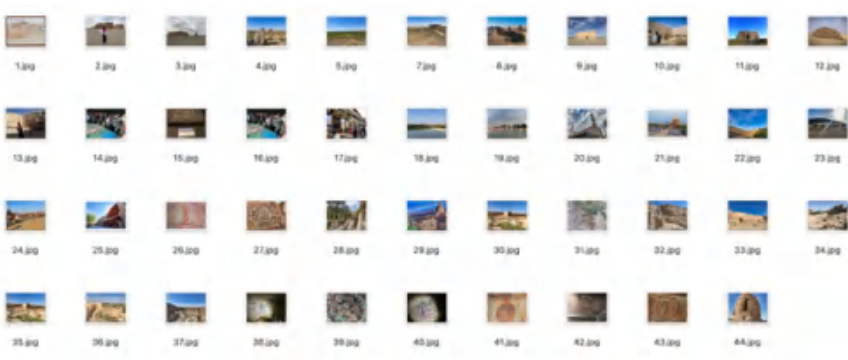
Figure. 7-5 List of the pictures involved in the map
(*Own Souce*)

Figure. 7-6 List of the export of the sound QR code used in the map
（*Own Souce*）

Sort out the sound file QR code and picture file to be used. The sound QR code is paid by "Baidu" and "Grass QR code" to generate a permanent QR code, so that all sounds are uploaded to the "caoliao" cloud platform to generate sound two With Dimension Code, there is no need to import larger .WAV or .MP3 files in web inter-active design.

Point map Demo（***Part***）

If you need to change the sound or picture in the map, just change the picture name or sound name in the reference code

Such as:
audioName: "YADANSR003MS",
        audioUrl: "videos/YADANSR003MS.WAV",
        vscode: "codeImgs/YADANSR003MS.png"

Demo example: (see the attachment for the demo of the entire map)
//data

cities = [
  {
      photo: "images/1.jpg",
      title: "Yadan National Geological Park",
        description: "There was a light rain around. The weather was changed due to the launch of Chinese rockets around it. The sound of nature, the sound of wind, was a 12-level gale. The picture shows the guide map and audio commentary QR code of Yadan Geopark Scenic Area.",
      audioName: "YADANSR003MS",
      audioUrl: "videos/YADANSR003MS.WAV",
      vscode: "codeImgs/YADANSR003MS.png"
  },
  {
      photo: "images/2.jpg",
      title: "Yadan National Geological Park",
      description: "Visitors from the next beach have a sound of tourists, because of the vast area, the sound echoes, and the distance is relatively long. The sound of a bus running in the distance over the sand.",
audioName: "YADANSR004MS",
      audioUrl: "videos/YADANSR004MS.WAV",
      vscode: "codeImgs/YADANSR004MS.png"
  },
  {

Coordinate attributes
All map coordinates are created based on Gaode maps. Due to certain policy restric-tions, google maps and baidu maps are not internationalized enough. Therefore, the researcher chooses the Gaode map as the coordinates of the sound map.

Finally generate soundscape map pointmap point map project file：

Click index
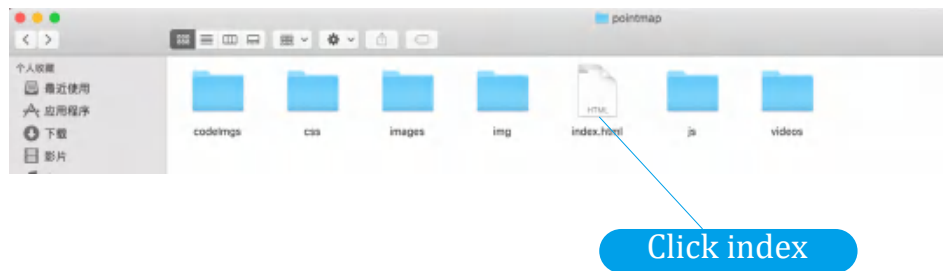
The online version of the webpage requires payment and continuous payment before it can be used continuously. Therefore, the researcher designed it as a stand-alone version. Copy the above-mentioned "pointmap" folder to any computer under the windows system and click "index" to open it and use the sound View map.

Move the mouse, click on the points on the map to directly display sounds and pictures, the page is as follows:
The original document is in the anne：.

Figure. 7-7 Dunhuang area sound map main page，designed by Author
（*Own Souce*）
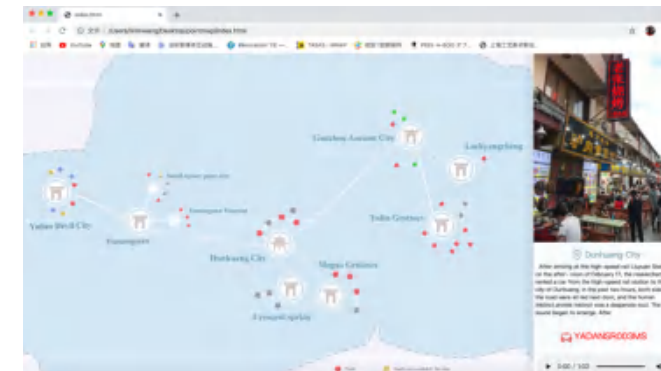
Figure. 7-8 Dunhuang area sound map with QR code，designed by Author
（*Own Souce*）

7.3 Sound event design based on the soundscape of the Silk Road

With the enrichment of spiritual and material life, public art space has gradually become an important part of the indispensable environmental space for people living in cities and towns. Sound sculpture is a special profession that combines sound and sculpture. The focus is not on visual or tactile feelings, but on the sound, experience produced by materials.

Sound sculptures can be used for performing arts and music at the same time, while musical instruments are exclusively for experts who have been training for a long time.

The sound sculpture can be interpreted by anyone interested. Without the participation of performers or evaluation scores, everyone can express their ideas without the need for professionally trained musical skills.

Therefore, the demand for revitalizing the beautiful countryside, the Land Art Festival, and the public interactive space will be higher in the future. In addition to simply expressing artistic and humanistic creativity, it also adds sound attributes, and the interestingness it brings will arouse the interest of participants.

Use different objects or expressions to try to discover new sounds. Different from the traditionally understood sound in musicology and music science, sound media art has become a means of expression by contemporary artists.

Sound is regarded as a tool and medium for the expression of ideas and is related to people's living environment and society. State, cultural roots and digital media technology are all closely linked.

Based on the importance of the preservation and spread of sound media art and intangible heritage on the Silk Road, the creative design of sound sculptures was carried out in conjunction with the "features of the soundscape of Yadan Devil City".

7.3.1 Sound sculpture design-Sound of Wind

Sound sculpture is an important part of sound media art research.

Baschet[2] Sound Sculpture (called acoustic structure at the beginning) is located at the border between musical instruments and sculture, opening up the possibility of active involvement of the audience or visitors.

Sculptures can start having fun from this moment (French translation, English translation, while performing games and Musical interpretation), while musical instruments are exclusively for experts who have trained for a long time.

The sound sculptures can be interpreted by anyone who is interested. Without the participation of performers or scores, everyone can express harmless thoughts without pre-ordering. Music code. Baschet sculptures can be adjusted, so they are also musical instruments, but the purpose of these sculptures is not to explain traditional music, but to experiment to discover sounds that cannot be produced or heard until that moment. Traditional musical instrument.(CERDA ,2015, P.6)

Figure. 7-9 Baschet Sound Sculptures
(Retrieved from image：https://cn.juno.co.uk/products/bernard-baschet-michel-4-espaces-sonores-remastered/679692-01/2018)

[2]Les Sculptures Sonores-the Sound Sculptures of Bernard and François Baschet by François Baschet. Soundworld Publishers, 1999. 153 pp. includes CD. ISBN: 1-902440-02-1.

When visiting the Devil City of Yadan, due to various reasons such as weathering, this place is only a desert and no man's land. Without vegetation and life, the only sound is the sound of strong wind and noisy tourists, as well as the background environment near Yumen Pass.

Released by the museum. Researchers have been thinking about how to enrich the sounds in the desert. In the desert, because the wind and noise are very loud, all tour guides use traditional "speakers", which is what we often call speakers, as the main way of explanation.

In the desert, the most distinctive mark is red, so the researchers drew a sound sculpture sketch based on this design concept:

This is also the innovative content of this research. Open the voice of history on the Silk Road in the desert.

The horn shape can collect the sound of the wind and can also transmit the sound to each other through the hollow pipe.
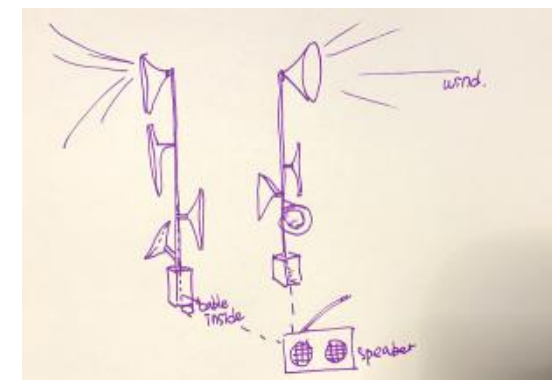
Figure. 7-10 Design Sketch of Wind Sound
(Design por Author)
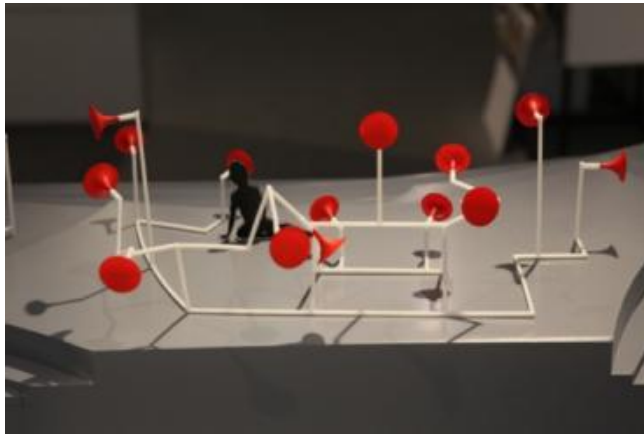
Figure. 7-11 The splicing model of Wind Sound, Small Model by Huang Geng of Dong-hua University to complete the production
（*Own Souce*）

Other design ideas
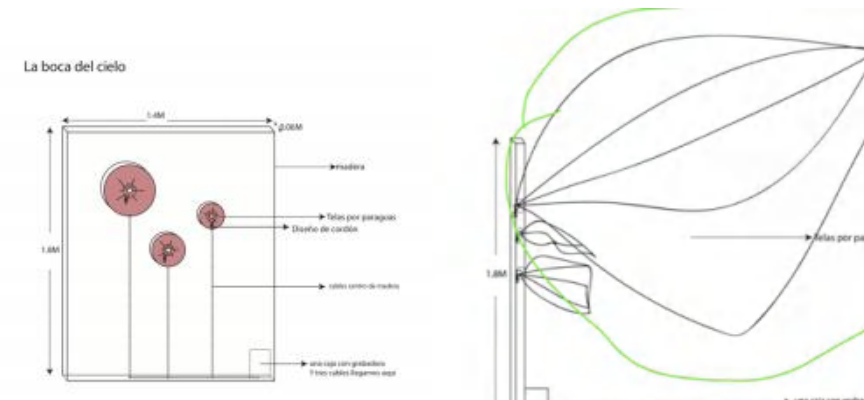
Figure. 7-13/14 This design was modified and exhibited at valldoreix in 2018
（*Own Souce*）

Figure. 7-12 The shape of collecting wind in Yadan Devil City
（*Own Souce*）
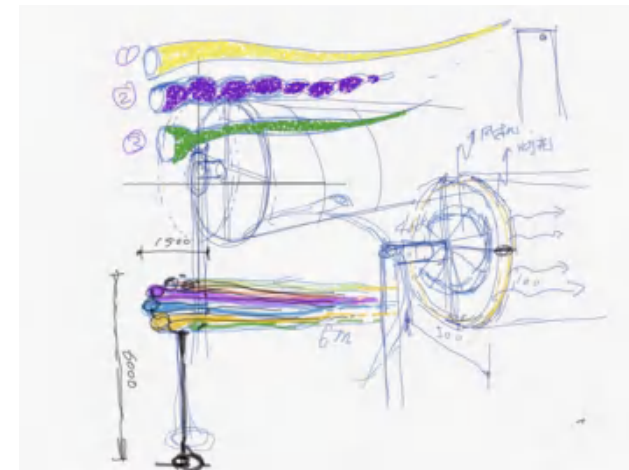
Figure. 7-15 A kite design that can catch the sound of the wind
（*Own Souce*

7.3.2 Sound sculpture design-Sound of History

During the visits to several different collection points along the Silk Road, the researchers discovered that the generating chambers of several stringed instruments are all shaped like arcs.
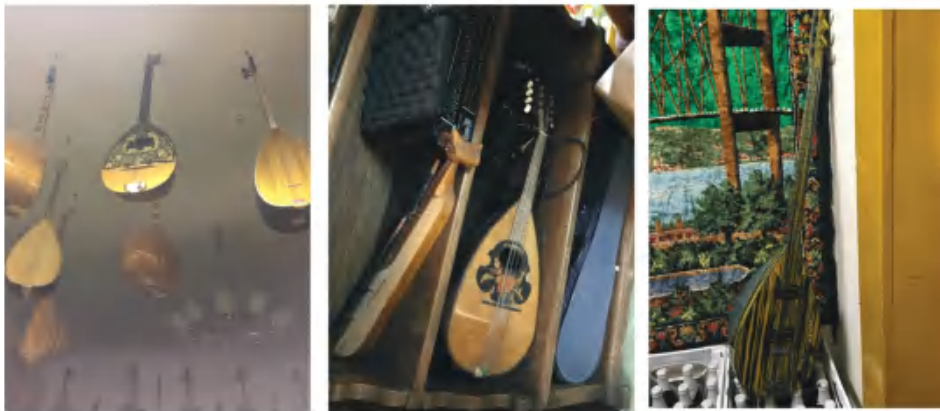
Figure. 7-16 At a Turkish shop in Berlin in 2015，Laud in different style
（*Own Souce*）

When visiting Cave 3 of Yulin Grottoes, the lotus pattern on the roof of the cave showed the wisdom of ancient Chinese artists.

Therefore, the researcher made the lotus petal shape design based on the circle shape based on the picture. Sounds of different temperaments are produced by percussion:

Figure. 7-17 Plucking the Pipa: Yulin Grottoes Cave 15，Song dynasty
(Retrieved from：https://www.sohu.com/a/226403657_493897，2020)

As you can see in the picture, the Laud musical instrument appeared in many countries along the Silk Road, and its shape and shape have evolved over thousands of years.

At the same time, when the researchers walked to the Yulin Grottoes, they saw the lotus pattern on the roof of the cave, and produced a round, striking sound sculpture.

The simplest and most applicable materials in China are clay and metals. While the sound of wind was designed in the previous section, the researchers hope to design another metal sound. After the clay is fired at high temperature, its sound is clear and crisp.

It can also be understood as the sound of metal.

Figure. 7-18 Top of one Cave in Yulin Grottoes
(Photo by Author)
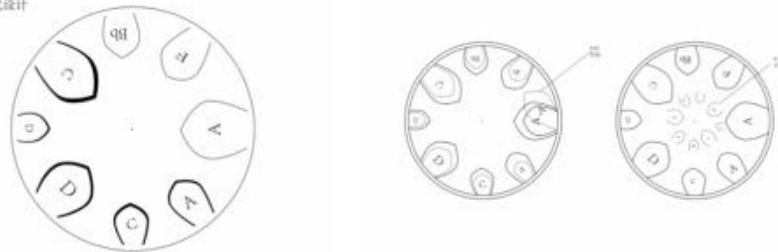
Figure. 7-19 Design por Sound Sculpture
（*Own Souce*）

According to the principle of lotus shape and tambourine shape, more than 20 different sound variations are designed.

Researchers try to design sound sculpture experiments with porcelain and copper pieces
Eight-tone experiment; gold, wood and earth acoustic sculpture works:
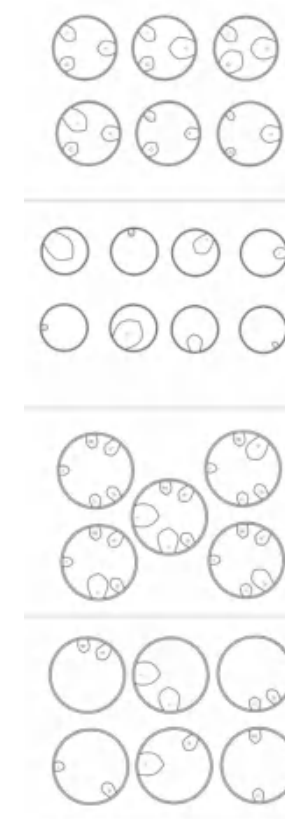
Figure. 7-20 Variety of design drawings
of Sound Sculpture
（*Own Souce*）

Figure. 7-21 Porcelain slab pattern, cut by the cutter factory
（*Photo by Author*）

Figure. 7-22 The final display under the light
（*Photo by Author*）

Figure. 7-23 Sound sculpture modeling design, using
copper pieces for modeling production
（*Photo by Author*）

Figure. 7-24 The lotus shape sound sculpture design is completed
by a copper engraving machine
（*Photo by Author*）

What the researcher wants to express is a kind of experimental design that can be changed and hit, based on the difference in loudness and Hz of the sound produced by the size and opening and closing angle of different lotus petals.

7.4 Sound Museum Design

After the establishment of the sound media library, sound label design, and silk road sound sculpture design in the previous chapters, the researcher planned a sound exhibition and designed the Yadan Devil City Sound Museum

7.4.1 Exhibition of Sound Media Art on the Silk Road

Take the voice of Shang Yu, that is, the voice of Metal and
water. Sound media art reproduces the Sound of the Silk Road.
The author has collected sounds, analyzed and summarized them
Through many important places on the Silk Road after five
years. More than 300 sounds have obtained.

The researchers will conduct the first sound media art exhibition in the BOX4 space of the University of Barcelona in February 2020，Poster and space display design plan.

Figure. 7-25 The original display design, with a speaker above each picture.
（*Design by Author*）

The pictures are all key areas or representative pictures taken by researchers during the survey on the Silk Road.

However, due to limited exhibition equipment, in practice, it became a physical printable sound exhibition sign, a projector to display a sound map, and a number of small sound sculptures.

Live exhibition poster photos and exhibition set-up photos

Figure. 7-26 Exhibition poster at the entrance of the Faculty of Fine Arts of the University of Barcelona
(*Photo by Author*)
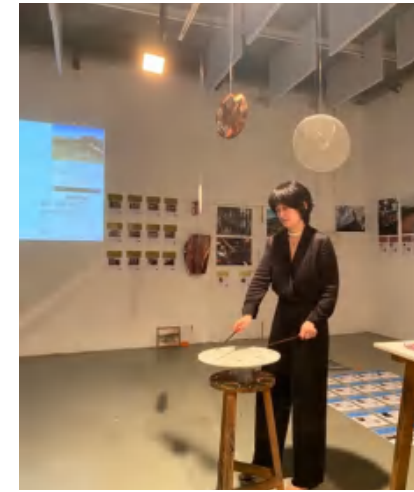
Figure. 7-28 Researcher demonstrates the use of sound sculpture experimental works to make sound
(*Photo by others*)

Figure. 7-27 Researchers set up the exhibition site in box4
(*Photo by others*)

Figure. 7-29 Exhibition opening ceremony
(*Photo by others*)

7.4.2 Sound Museum Design

After the first sound media art exhibition, researchers began to think about how to design a sound art museum that can interact with the audience and be displayed at a certain point on the Silk Road.

The researcher was invited to participate in the Manresa Town Light Art Festival on February 20th, 2020. The light art works of artist TOM Carr. (Professor at the Escola Massana His works retrieved from http://www.tomcarr-studio.com/tom_carr/Tom_Carr_A_D.html.2020)

Figure. 7-30 Tom Carr artwork in Manresa
(*Photo by Author*)

After editing more than 100 works through the computer, the artist used projection lights to create a gem shape.

The gem polyhedron undergoes a magical change under the change of light.

Inspired by the design of Professor TOM CARR, the author started to conduct digital sound media art experiments through Touch Design interactive multimedia software and Arduino touch experiment polyhedron:

Arduino sends data to Touch designer software through serial connection. First use the touch switch to light up the experiment

Figure. 7-31 Arduino APP
(*Photo by Author*)
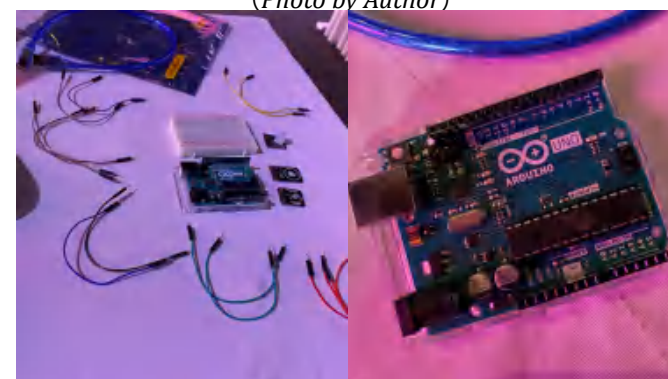
Figure. 7-32 The researcher prepares the equipment during the experiment.
(*Photo by Author*)
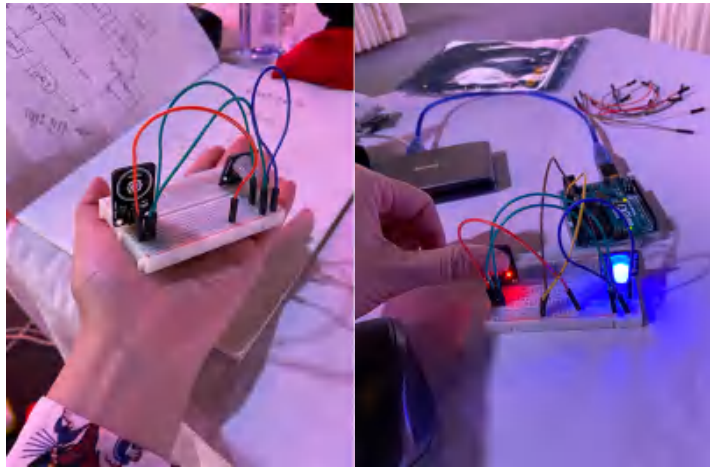
Figure. 7-33 Prepare UNO board, Dupont cable, sensor and light
(*Photo by Author*)

In the picture, you can see that the light is on after the circuit board is correctly connected

TouchDesign is a node visual creation software that can realize human-computer interaction, large-scale lighting stage performances, and 3D real-time rendering programming software. The researcher hopes to realize the sound and light interaction experiment of the Silk Road sound media art through this software.
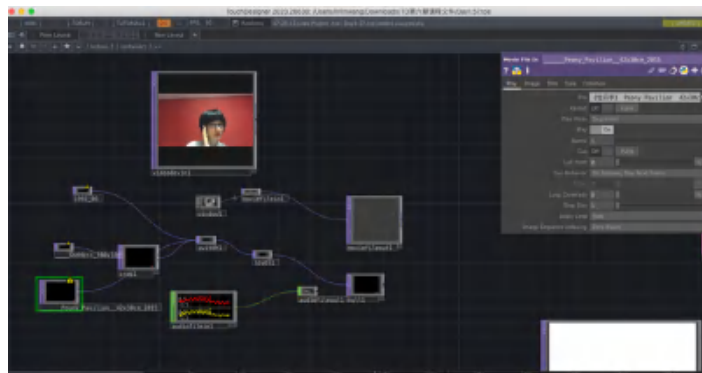
Figure. 7-34 TouchDesign software test screenshot 1
(*design by Author*)

After the simple node program is set, the front-view camera is turned on for human-computer interaction experiments. Observed data value changes
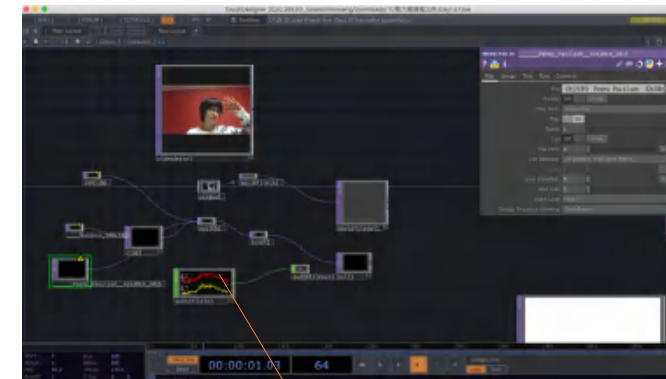
Observe the change of the curve value when the researcher's hand and head change

Figure. 7-35 TouchDesign software test screenshot 2
(*design by Author*)
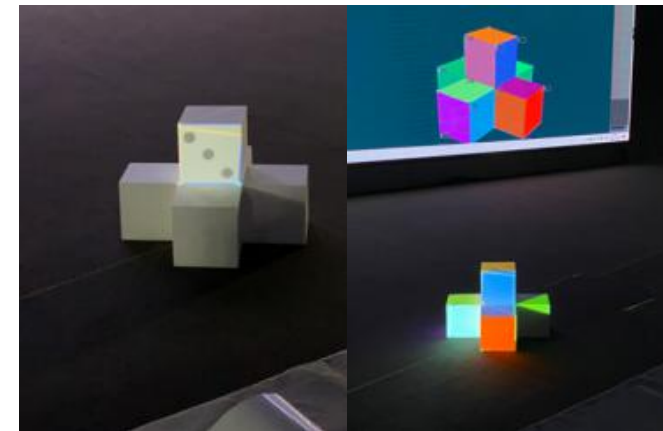
Figure. 7-36 Take the polyhedron as the experiment and cast the color and sound on the polyhedron experiment
(*design by Author*)
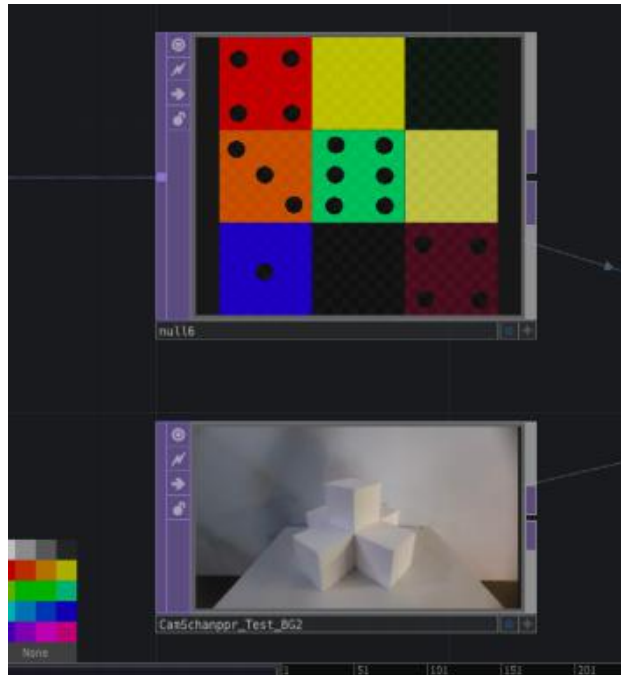
Figure. 7-37 Point positioning in the virtual scene
(*design by Author*)

*Figure. 7-38 Import a picture of the bounced pipa from
the Dunhuang mural in Photoshop and cut it into a square picture*
(*design by Author*)

The image is projected to the polyhedron according to the shape of the polyhedron, and the image can be changed according to the frequency of the imported audio.

The purpose of the experience is to realize an interactive experience through the design of a sound museum, and to bring the sound landscape of the Silk Road to the audience immersive experience through projection and other methods:

*Figure. 7-39 Then import this picture into the Touch design software
for program setting*（*design by Author*）
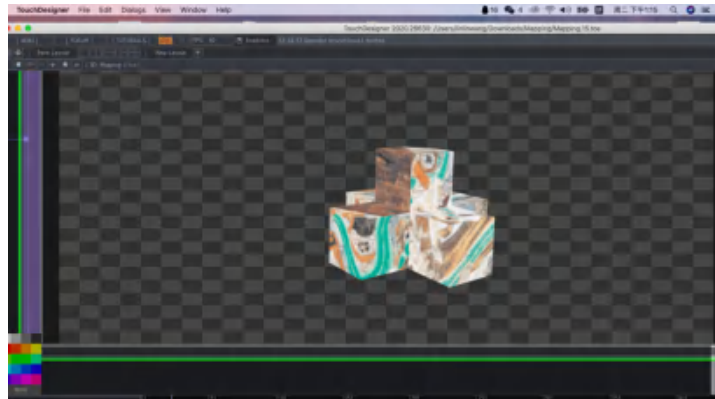
Figure. 7-40 It can be seen that a flat picture of Dunhuang was transformed and pro-
jected onto the cube through a program
(*design by Author*)

Figure. 7-41 Then replace and test multiple times according to the bird's song audio
picture and sound waveform
(*design by Author*)
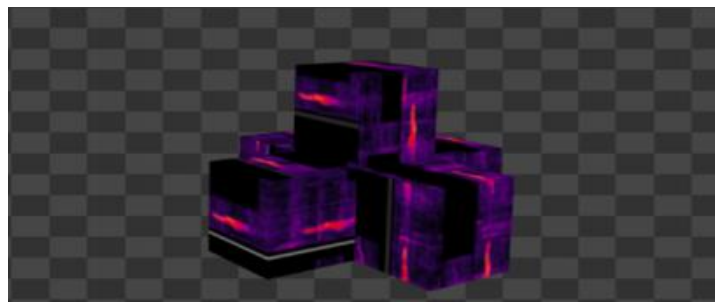
Figure. 7-42 Screenshot of interaction between audio and cube on the Silk Road
(*design by Author*)
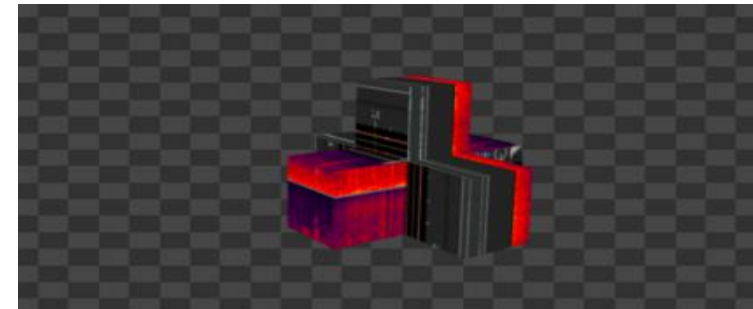
Figure. 7-43 Silk Road Water Sound Spectrum Audio
(*design by Author*)

Figure. 7-44 Project file overview picture
(*design by Author*)

Through the Touch design software, the sound files on the Silk Road can be combined with the picture files, and the sound amplitude can be used to realize the picture interaction or the frequency source of the picture switching screen.

Therefore, in the "birdsong" graphic, if you use different audio combination files of calls, you can switch the birdsong from the desert lone boat to the shore of Erhai Lake and Qinghai Lake, and the background image can be changed at the same time.

The digital display application of "Sound Media Art Reproduces the Voice of the Silk Road" has been realized.

Figure. 7-45 Virtual interaction on the
Gobi Desert. Sound media art on the Silk Road.
(*design by Author*)

Nausicaa Sound Museum, inspired by various shapes in the desert, made of transparent acrylic material can be easily transported and disassembled.
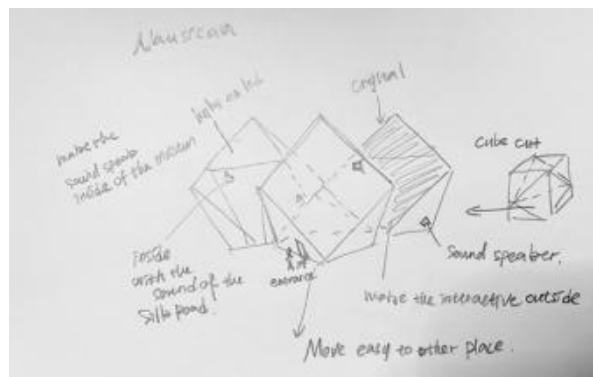
Figure. 7-46 Nausicaa Sound Museum sketch
(*design by Author*)
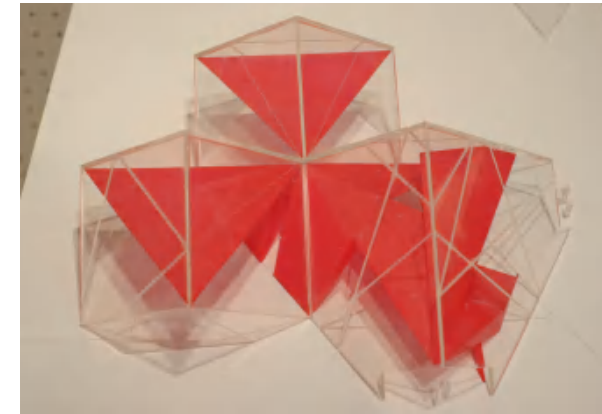
Figure. 7-47 Top view of Nausicaa Sound Museum
The acrylic sample design was assisted by Huang Geng of Donghua University
(*Photo by Author*)
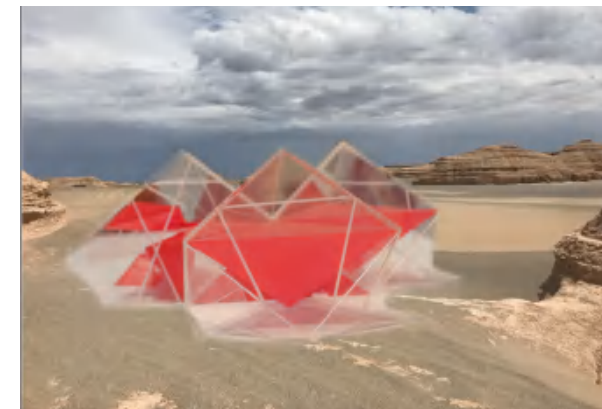
Figure. 7-48 Nausicaa side view and scale sample map in the desert
(*design by Author*)
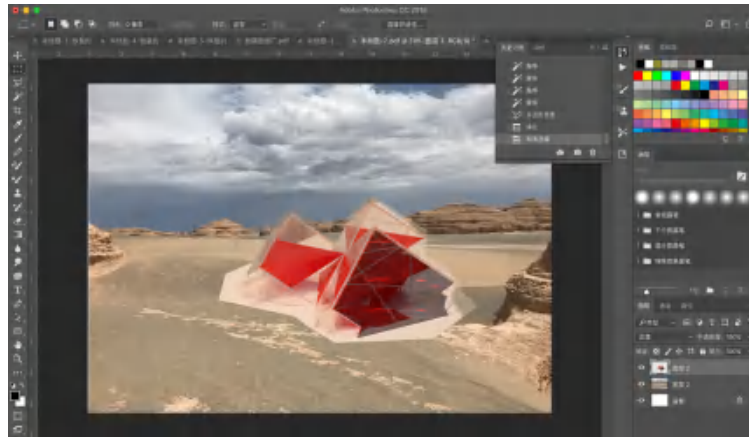
Figure. 7-49 Edit space design in photoshop software
(*design by Author*)
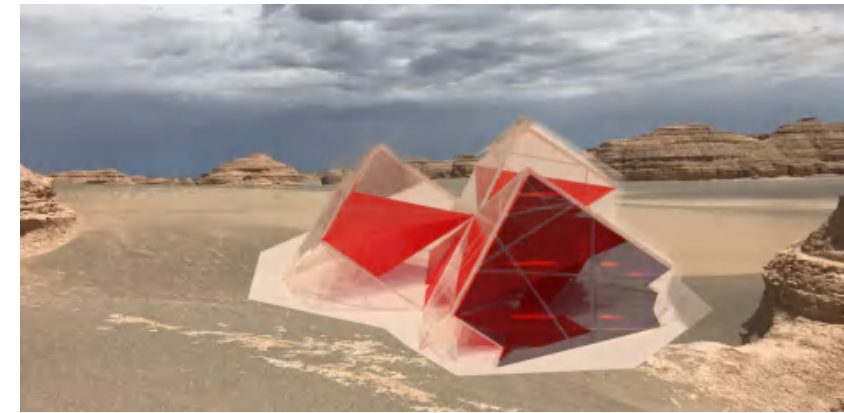
Figure. 7-50 Nausicaa Sound Museum during the day
(*design by Author*)
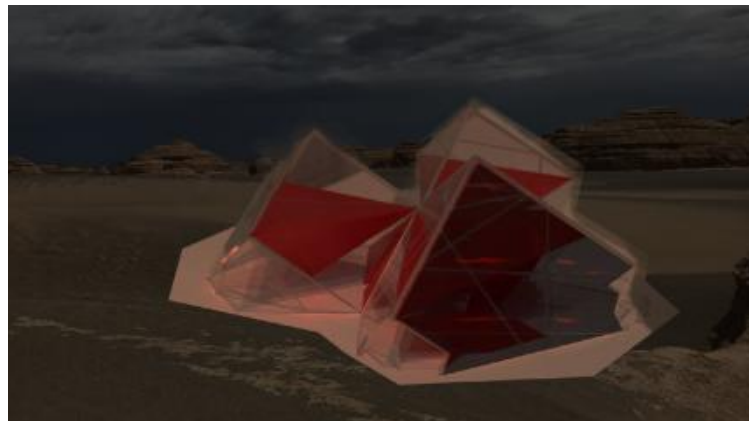
Figure. 7-49 Nausicaa Sound Museum at Night
(*design by Author*)

Researchers have brought the sound of the Silk Road to every corner of the world through the establishment of the sound database on the Silk Road, the design of sound labels, the research of sound maps, the innovation of sound sculpture, and the design of the Digital Sound Media Art Museum. While protecting and inheriting the sound media art on the Silk Road,

Use sound as an element of the contemporary art design. Use scientific methodology and systematic research methods to create contemporary art.

Part III General Conclusion

Chapter VIII Conclusion

8.1 Conclusion

The purpose of this artistic research is to carry out fieldwork to record the soundscape of the Silk Road as it passes through China, for the preservation of sounds by making a sound file based on the guidelines issued. by the Convention for the Safeguarding of the Intangible Cultural Heritage of UNESCO and the installation of sounds through a sound map for its dissemination, both physical and virtual.

The method through field recordings in the geographical space on the route of the Silk Road in China represents a remarkable contribution in the studies of the soundscape since it establishes its study methodology based on the contributions in this field of sound art established by R. Murray Shafer at Simon Fraser University in Vancouver, Canada. The applied methodology and fieldwork in a practically forbidden place for foreign researchers, make this thesis a document for the preservation of these sounds for the future. On the other hand, the compilation of documentary sources written in the Mandarin language makes this topic very difficult to access for non-Chinese researchers, so access to the sources has been essential for the development of this thesis. We consider that this thesis offers a novel and interesting research work for soundscape studies.

The recording of sounds is a kind of cross-lingual cultural research. People in any country or region can hear the sounds of the intangible cultural heritage on the Silk Road, the voices of handicrafts and paper mills, even if they don't understand the Chinese language. Are the sounds of national festivals and the croaking of swallows in the desert areas of China's Silk Road pleasant?

The starting point hypothesis is established in the relationship between the soundscape and the territory. The Soundscape is understood as the dynamic and temporal expression of the soundscape concerning culture. The soundscape is mutable and ephemeral element in time; it is the expression of the different social relationships of the people who inhabit it, of its cultural context, and of its diffusion, all in interrelation with the natural environment that surrounds it. The exposition of the multiple variables that are established in a cultural context such as that of the various regions that have been carried out by recording the sounds of the Silk Road aims to reveal a common denominator between geography and its inhabitants with an active element in the process of change such as sound.

The field recordings clearly show the differences of each of the geographical places and their modifications, due to social events typical of Chinese society, aspects that denote the ethnic and cultural differences of each region. The hypothesis of this thesis, in terms of revealing these variables that make each sound different and frame it in a close relationship with the geographical environment, has been demonstrated throughout the sound studies carried out that show the social complexity of a place. At the same time throughout history it has had multiple influences going and back on this route that was established between east and west.

This relationship between sound, individual, and environment is from which the general hypothesis of this thesis is established, and from which the conclusions are established. In this trilogy, formed by sound with its physical variables and the information it provides to human perception; the individual who confers on him a past meaning through the sieve of his thoughts, feelings, and memory; the environment with its differential aspects of climate, geography, and physical elements, are those that are ultimately reflected in the recorded sounds.

This relationship between sound, individual, and environment as the central point of the research has been the backbone structural element of the thesis, establishing a correlation between the theoretical aspects and the collection of bibliographic data and the practical procedures of fieldwork and dissemination exhibition design.

Through sound cartography, they have taken into account artistic references from sound art and other more technical areas of study concerning the applications of infographic knowledge and construction skills, both sculptural and electronic components.

However, the attitude of active listening has been the fundamental one to develop the investigation that ultimately is an artistic work in the field of sound art. For this purpose, a series of processes and methodologies of multiple origins have been configured in the different phases of the work.

Research objective and hypotheses Conclusions

General objective
The general objective of this doctoral thesis is to establish the parameters of a field study of the sounds of the soundscape of the Silk Road in its journey in China from what is established by the Convention for the Safeguarding of the Intangible Cultural Heritage of the UNESCO.

The geographic scope of the study is The geographic scope of the study covers six key research areas in the Chinese part of the Silk Road from Xi'an to Urumqi, Henan Province, Shaanxi Province, Gansu Province, Qinghai Province, Yunnan Province, Xinjiang Province, and two secondly key research areas Jiangxi Province and Hubei Province. They are regions of China that still maintain a strong tradition and influence of traditional and popular cultures. The purpose of the study, which is carried out through field recordings, is to establish a sound archive for its preservation, cataloging, study, and dissemination of the cultural and natural aspects that are manifested through sound as a primary element.

RESULTS:

In the first part of theoretical research, it is concluded that:
The research work highlights the importance of the concepts of Soundscape and Acoustic Ecology, concepts that, although they have been the subject of study in the consulted bibliography, are concepts not yet studied in Chinese academic fields, all articles by Chinese authors that we have studied, in their entirety written in the Mandarin language, even have difficulty in defining these concepts, since there are still no words that define them clearly, and never in the same way in which they are defined in sound art studies in the East. . We want to emphasize that this lack of definition is not typical of Chinese academic studies, it should be remembered that the term Sound Art has been used for just over 30 years, the word sound art as we currently understand it was defined by William Hellerman who was curator of the first sound art exhibition The Sound Art Show at The Sculpture Center in New York, in 1983. And the term soundscape, Soundscapes was not coined until the 1970s from the studies of R. Murray Shafer.

As a relatively avant-garde art form in today's world, sound art has not developed in China, and the public's knowledge of sound art is also insufficient, if not non-existent. However, anyone who knows a little about Chinese literature and history knows that since ancient China, Chinese have had a great deal of philosophical writing and scientific knowledge about sound and the relationship between sound and art.

In the development of this thesis, the objective has been to explore this relationship between plastic arts and musical arts to establish a future development of sound art in contemporary China. Throughout the thesis there are references to the philosophical thoughts related to sound art in ancient China and the creative attempts of contemporary Chinese artists related to sound art. Let's give some examples:

1. "Song Book" (Shi Jing), is the beginning of Chinese poetry
Ancient, is the beginning of Chinese ancient poetry, the first collection of poems, which contains ancient Chinese poetry from the 11th century BC to the 6th century BC. quoted by Confucius. And that refers to the sound components of poetry, an element widely studied in the West in the relationship between phonetic poetry and sound poetry in the avant-gardes of the twentieth century.

2. "Yue Ji" is China's oldest music theory work with a relatively complete system. Its rich aesthetic has had a profound impact on the development of classical Chinese music for more than two thousand years. It occupies an important position in the history of the thought of world music. In this treatise, some aspects recall the birth of acousmatic music in contemporary European art. The materiality of sound provided by Pierre Schaeffer's studies is an essential element in establishing a bridge between the sound concepts of ancient and traditional Chinese treatises and the European historical avant-gardes of the 20th century.

3. "Zhuangzi" mainly reflects the critical philosophy, art, and aesthetics of Zhuangzi, the representative figure of Taoism in ancient China. Its content is rich, broad, and deep, and it involves philosophy, life, politics, society, art, cosmogenesis, and many other aspects. "Zhuangzi" is not only a philosophical masterpiece but also a masterpiece of fables in literature and aesthetics. It has an inseparable and profound influence on the development of Chinese literature and aesthetics. In this work there are constant references between sound and the plastic arts, basically painting.

"Kao Gong Ji"[1] As early as the pre-Qin period, China put forward the "four basic principles" on how to evaluate the quality of design works:

> "There are times in the sky, the earth is strong, the materials are beautiful, and the workmanship is coincidental. If you combine these four, then you can be good."

（http://www.chinaknowledge.de/Literature/Classics/kaogongji.html.2017）

Putting this ancient Chinese philosophy into the research of this doctoral dissertation can be understood as,it depends on whether the value of research is placed in a specific environment because the unique attributes, timeliness, and fluidity of sound coincide with the "day time" mentioned here. In contrast to Hegel's philosophical theory, "It is impossible for a person to step into the same river twice at the same time." It is the same truth. In other words, the date, sound, and image records made by the researcher on the first day of the field investigation

are reasonable and unique.

The earth is an aura, and it is about space. Apart from the factor of time, the geographical significance of sound collection cannot be ignored. This doctoral dissertation studies the sound of the red-headed gulls for food collected at Dianchi Lake in Kunming, Yunnan in January 2021, which happens to be the season when the red-headed gulls migrate to Yunnan for the winter. If some scholars propose that the temperature in Kunming, Yunnan, is the lowest in the ten years in January due to climate change in 2021, the migration of red-headed gulls will be affected; the voice data of the researchers provide strong research evidence. At the point of sound recording, there are indeed red-headed gulls appearing within this geographic area.

The material is beautiful, which means that the material is used properly. You can use your materials to the extreme. In this research, the sound media art is used to record the sound collection of the key research areas on the Silk Road in China, and to archive the natural, humanistic, historical, and intangible cultural sounds on the Silk Road in the form of a sound media library. It is an innovative application that uses "sound" as a material to maximize its effectiveness.

The last one is about "working with skill", that is to say, applying the Eastern philosophy of creation, how to express and convey this application perfectly. This is the sound label designed in this study. The QR code is used to enable the originally huge sound data that are not easy to carry. It can be opened by "scanning" anytime, anywhere, with pictures, dates, descriptions, and sound maps. The soundscape on the Silk Road is transmitted to all corners of the world conveniently. This is the contribution to society as an art scholar and educator - integrating art, sound, and technology to protect the intangible cultural heritage of the Silk Road.

The "soundscape" concept is fundamental in the thesis because it extends the sound perception towards space, both architecturally and in the landscape. Subsequently, with the concepts emanating from sound ecology, concepts that we can define with an ethical dimension in listening to natural and social landscapes will be added. Soundscape studies refer to the need to study sound environments through

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[1] "Kao gong ji" is a part of "Zhou Li". "Zhou Li" was originally called "Zhou Guan", composed of six chapters: "Heaven Official", "Di Guan", "Chun Guan", "Xia Guan", "Autumn Guan" and "Winter Guan". In the Western Han Dynasty, the "Dongguan" chapter was missing, and Liu De, the king of Hejian Xian, took "Kao gong ji" and added it.

scientific rigor, it is for this reason that methodologies typical of ethnographic field studies are included, which lead to define the sound identity of places, and above all in defining what are the different elements that can define sound communities. As we have seen throughout the thesis, the sound environment of a place is a changing element over time and above all ephemeral, undoubtedly modified by cultural transformations, as demonstrated by R. Murray-Shafer. But it is due to Barry Truax, disciple and follower of Shafer's teachings, who developed such important concepts as acoustic design and the idea that the soundscape could be understood as a musical work, leaving the Composition of Soundscapes out of this vision.

SPECIFIC OBJECTIVES
The three specific objectives of the research that has been developed in this thesis are mentioned below:

FIRST SPECIFIC OBJECTIVE
The first objective is to carry out a sound study of the geographical areas of the Silk Road, by recording the soundscape as an identifying and differential element through fieldwork in situ. In the Sound Landscape recording project, data has been collected on the different typologies, basically sound, natural, and cultural environments; industrial and trade sounds; sound events and popular festivals; public, urban, and rural sounds; and cultural sounds of the diversity of cultures in today's Chinese society.

In the thesis, systematic recordings of the sounds of the natural and cultural environment of the studied regions have been made; the thesis identifies their components to configure a sound material so that it is preserved and disseminated. The fieldwork has been developed in the same study place and the data collection aims to reflect the sound identity of each place and establish a record that, as a sound description of an environment, is a document that helps to analyze and preserve the differential aspects each place. It should be noted that it is the first time that a sound research work of this nature has been carried out in China, therefore, the contribution will have an impact on a cultural and academic level. Technically the research work has been carried out by means of conventional stereo

recordings and recordings using the binaural technique, which establishes the sounds in three dimensions. The edition will be carried out using editing programs and spectral analysis of the recorded sounds.

RESULTS:
At the beginning of this study, the researchers studied the typical sound landscapes on the Silk Road from Xi'an to Urumqi and finally completed them. They not only investigated the northwestern area on the Silk Road but also conducted key research in the Yunnan area on the southern line of the Silk Road and eventually form the " The sounds on the Silk Road from Xi'an to Urumqi—— Soundscape, recording and exposition of the sounds ". This doctoral dissertation is divided into two parts. The first part of theoretical research puts forward the issue of "Inheritance and protection of the Silk Road sound media art" from Chapter 1, and after the determination of the three research objectives and the feasibility analysis of the research hypothesis, It is concluded that this is a research work on the protection of the natural, cultural, intangible cultural heritage, and historical heritage of the Silk Road by applying sound. At the same time, the research hypothesis for the lack of sound art design in China's current higher education is given. In the future, scientific and technological means will be used to design sound maps, combined with sound and art to create sound museums and propose overall research goals and social influence.

In the second chapter, it is found out the methodological literature and research guiding ideology of sound media art and sound landscape research in European and American countries. At the same time, it is found out the more successful and socially influential research projects in sound art design and soundscape in China. And the application of sound in social practice is a more successful case analysis, to find the theoretical research foundation and literature review of this research. It is concluded that by the end of the research of this doctoral dissertation, there has been no research on "The sounds on the Silk Road from Xi'an to Urumqi—— Soundscape, recording and exposition of the sounds ", which is an innovative research.

The Chapter III focuses on how to study the methodology of sound media art on the Silk Road, and finally adopts the ethnographic research method in the research of human sociology. Through observation and discussion, focus groups, and field investigations, the key research areas of this research practice were found out, the foundation for the research methodology of this research was laid, and at the same time the laboratory data analysis, questionnaires, and other auxiliary methods to comprehensively evaluate the "sounds on the Silk Road" were applied.

The Chapter III completed the research plan, route planning, equipment application, fieldwork site testing, research questionnaire handing out and research factor analysis.

The second part is the practical research part. Chapters IV, V and VI are the in-depth study of the natural soundscape, cultural symbolic soundscape and soundscape under specific social environment. Applying the research objectives and research hypotheses of Chapter I as the fieldwork objectives of the second part, integrating with the ethnographic methodology mentioned in Chapter III, also including dates, picture taking, sound collecting, interviewing and analyzing sound data, the second part completed the recording of the soundscapes under the three major categories on the Silk Road, and completed the fieldwork of the six key areas plus one less significant area as well.

At the beginning of writing this doctoral dissertation, the chapters were organized based on the geographical locations where the sounds were collected, however, as the research stepped further, it was found that each type of sounds from one location stands alone and it's thus inconvenient to have them compared in a cross-region way. Therefore, in the middle and late stages of the research of this doctoral dissertation, after the fieldwork of all the key research regions mentioned in Chapter III was completed, the researcher identified the comparable regions and created chapter sections for them. In Chapter IV where the natural soundscape on the Silk Road is studied, the research focus is on the soundscapes of mountains, water bodies and animals with emphasis on birds, insects and cicadas.

Chapter V takes urban culture and local customs as the background and takes the sounds of historical relics and cultural heritage as the main research content. By comparing the soundscapes of bazaars and public areas in the urban culture

background, we can find the key research areas on the Silk Road. In the process of urbanization, sounds are affected or changed by various industries. The protection and analysis of the current soundscape of world cultural heritage and historical relics helps us find out the practical application of the sound media art in these areas, in order to change the ecological status of the dessert parts of the Silk Road. At the same time, in designing the sound museum, the protection and inheritance of the sounds of the world cultural heritage are promoted, and the sound map is used to spread and promote these sounds on the Silk Road.

Chapter VI focuses on recording and collecting the sounds of the intangible cultural heritage on the Silk Road. Yunnan Province of China is a multi-ethnic region. Due to its unique geography and geomorphology, the economy of Yunnan is not well developed; furthermore, many ethnic minorities live in Yunnan, all these factors make Yunnan a great place that has maintained a large amount of intangible cultural heritage in festivals, languages, customs, and handicrafts. In Xinjiang Province, another important region on the Silk Road in China, its hand-made mulberry paper has been an important record carrier of ancient documents about Dunhuang Mogao Grottoes. The craftsmanship for making the hand-made mulberry paper has been preserved for over a thousand years. By collecting the sounds, designing the labels of relevant intangible cultural heritage, the researcher is able to present the original sound records to the world in the form of contemporary art exhibitions. In the meantime, these sounds can be promoted to the world through the dissemination of "sound media art", and the local travel experience can be enhanced in the way of "design changes your life".

Chapter VII uses the preliminary research data and research results, based on the sound collection data, establishes a sound media library, designs sound maps and sound sculptures and eventually designs a museum of sounds. The "Sound Media Art Library on the Silk Road", "Sound Labels on the Silk Road" and "Soundscape Map on the Silk Road" have forward-looking constructive significance for online and offline museum exhibitions. Digital media technology is used to create online and offline sound experience platforms, background programs, APPs, etc., which can be applied to analyze users' behaviors and the audience's demographic information.

Chapter VIII is the summary of this research and its social influence, and it ends the research of this doctoral dissertation.

The thesis has focused on the investigation of the sound perception of public spaces and the different ways of establishing listening to a sound environment determined by mobility and change. It is for this reason that we have introduced acoustic studies of the place, that is, we have taken into account the physical aspects of each place, which are what ultimately establish the measurable relationship of sound perception. In most of the recordings, we attach the study of sound waves through spectrographic analysis, which is the objective element that allows us to see the timbre characteristics of each place. The timbre in music is the differential element of each sound, the element that gives it its personality, the same musical note emitted by a wind instrument or by another string instrument, is the same note, but what differs is its timbre. In sound art, materials and forms are studied and experimented on. Each material has a specific sound expression and a distinctive, discernible sound and personality; this quality of sound is what is called timbre.

In the fieldwork, parameters of sound perception, coming from psychoacoustics, have also been established. Ways of listening have been explored since it is inactive listening that resides, where the complex relationships that occur when we listen, that is, when we interpret a sound. The sound experience is a basic concept in all expressions of sound art and soundscape; it will be extended to the perception that goes from personal sensory perception to sociological and cultural aspects of listening. The technological elements of field recording are also important, in our studio a specialized recorder has been used for field recording, appropriate microphones, from stereo microphones to binaural microphones that capture the spatiality of the place establishing three-dimensional recordings. Likewise, the sound editing programs that we have used are important, basically, Adobe Audition, which is the most specialized program in the market for this type of sound editing with the possibility of establishing spectrographic analysis of sounds.

All these technological resources have been made available to analyze the transformations of the environment, which we have been able to verify in the recordings and which made happen the multiple effects of social changes and the irruption of new information technologies in today's Chinese society. We have developed our field study methodologies with the sound records; in the inventory of the field records, we have also established categories and typologies, and differential elements have been defined throughout this study. The purpose has been to establish strategies to give value and raise awareness about the preservation of the cultural soundscape, through attentive listening procedures and the cataloging of the relationship between sounds and their territories.

In the methodological research of Chapter III, by applying the observation method of ethnographic research, firstly, the researcher identified which voices on the Silk Road have research value and need to be recorded and protected.
The key research areas of sound research, as identified by the focus group analysis method, include the starting point in the history of the Silk Road and the important capital of ancient Chinese history, Xi'an. The research is about the evolution of ancient Chinese cities in the process of industrialization, and the sounds that have appeared so far. To compare the Xi'an "Muslim Street" market, the Lanzhou night market, and the Dunhuang Jiuquan night market were analyzed. Secondly, the Dunhuang Mogao Grottoes and Longmen Grottoes, which are among the world cultural heritage sites, appear as treasures of Chinese grottoes. Through the comparative study of Yulin Grottoes and Taer Monastery in Xining, a secondary Chinese national protection key area, and through the study of Yumen Pass and the Yadan Devil City nearby, an important checkpoint on the Silk Road in Chinese history, the researcher found out the current status of historical relics and how to use sound media art to help improve it.

Finally, for the research and recording of the intangible cultural heritage on the Silk Road, Yunnan and Xinjiang provinces of China were selected. These regional ethnographic recording methods and field investigation methods are embodied in Chapters IV, V and VI, which are the fieldwork part of this research. After five years of research, the conclusion of this research is that "The sounds on the Silk Road from Xi'an to Urumqi—— Soundscape, recording and exposition of the sounds" is an innovative and unprecedented research; it created sound archives for the

protection of the soundscape on the Silk Road from Xi'an to Urumqi in China. The researcher had finally collected more than 400 sound pieces, which were analyzed and edited by the sound laboratory, and finally formed 272 sound labels in the research appendix of this doctoral dissertation. These data will serve as important data for the establishment of the Silk Road Sound Media Library.

SECOND SPECIFIC OBJECTIVE

The purpose of this work has been to establish a sound archive, which collects the Intangible Cultural Heritage through sound records cataloged scientifically. It has also been important to establish dissemination of this material with the design of a web page open to the contributions of people or groups that have newly created or historically sound documents concerning sound culture. The material has been organized with sound maps with the sounds geolocated using GPS, field files containing a description of the sound environment, some reference images, the day, place with latitude-longitude, time, and environmental circumstances in which they have been recorded. the sounds.

Likewise, the thesis has established the need to create a study and documentation center to preserve the material recorded in fieldwork for its future protection, cataloging, and dissemination. Currently, both Donghua University and the Shanghai Arts Design Academy have offered to be a study and documentation center to establish and apply design criteria to be a starting point for other environments in China where it is necessary to carry out this type of soundscape studies. Furthermore, this thesis is to establish parameters emanating from the UNESCO convention that is a representative for the management of cultural heritage and of culture itself. This thesis is also to establish parameters for the participation of local communities to continue the study in the future.

It is planned to create documentation and archive centers for fieldwork at Donghua University and the Shanghai Art Design and Academy, this archive will contain computerized fieldwork carried out through sound recording and a content sheet for each referenced sound. Each sound piece consists of not only the sound file itself but also documents that give detailed information about the sound, so as to best promote and disseminate the knowledge.

Soundscape projects are developed as a systematic work of collecting sound data to identify its components. Because all sounds collected in a certain place were stored in one file, it helps to analyze the different aspects of each environment in a convenient way. The field recordings made in the environment record the environmental sounds and give a sound image of the fleeting moment in which they have been captured.

RESULTS

The sound media library established established by the researcher during this doctoral dissertation is the is the second research goal of promoting China to the world.

The researcher is a professional teacher of interactive media art in Shanghai Arts & Design Academy, and also teaches hanghai Visual School of Art and Shanghai Donghua University; Mr. Feng Xinqun, the deputy dean of the School of Fashion of Donghua University, as the second tutor of this doctoral dissertation, Mr. Feng gave great support to establishing the sound sculptor studio in Donghua University as well.

The researcher's own major has only offered the course of "digital sound effects" for nearly ten years. Most educational teaching plans are limited to assisting in the multimedia art post-processing of movies and television programs, such as dubbing and basic editing of animation audios. There has been no real "sound designing" involved. In year 2018, the researcher set up the Masters' Creative Studio for Sound Media Art at the Shanghai Arts & Design Academy, and invited Professor Josep Cerda from the University of Barcelona as the visiting professor, who came with a researcher in sound sculpture designing.

Through the training of sound media designer talents, when Shanghai is the host city of the World Skills Competition, the sound media art creativity is applied to my country's original cultural industry to assist in perfecting the global animation and game industry. "Sound media" is also used to interpret the Silk Road culture, and to

preserve and disseminate oral history, oral legends, mythological stories and other unique Chinese cultural features in the form of sound records.

Among the existing disciplines in China, the sub-level disciplines of art design include architectural design, environmental art design, media art design, game animation art design, interactive media art design, and other professional design directions, but there has been no proposal for art design of sound media to become an independent professional direction. However, in practical applications, sound media art design is involved with many professional directions.

For instance, soundscape creation in architectural design; functional design of sound amplification and noise reduction in interior design; selection of social background sound in media art design; characters' voice setting in game animation art design; sound preference selection in setting computer-generated sounds in interactive media art design, and so on. Under the general direction of the world's technological modernization, the demand for personalization, personal customization, or personal preferences has become stronger gradually. In other design fields, earlier development and customization systems have been implemented, but their sound media design is not sufficient.

During the research period of this doctoral dissertation, the researcher started with the design of the "digital sound effects" course in 2019 and changed the simple content of the previous course that merely covered games and animation dubbing. Instead, the methodology proposed in this doctoral dissertation was applied to teaching, guiding students to find out the most impressive sounds around them through observation, and after focus group discussion, through the sound collection, sound recording and sound data analysis, to finally design a sound map in the form of art expression. In May 2020, while the entire world was taking classes online, the researcher used this set of sound landscape research methodology to explain to students, and obtained from different regions of China cricket tweets, market peddling dialects and sounds of morning traffic, which were then used to work out soundscape maps of various regions in China after editing and testing in the Audition software and other APPs.

At the same time, the researcher shared the sound data obtained on the Silk Road with students staying in various places in China through QR codes, and everyone had a media library with more than 200 sounds stored. Through the fieldwork conducted by the students, more sound data can be collected and analyzed.

The research team used the Market cries in Mianzhu, Sichuan as an example to analyze the collected audio data:
Sound by Li Yuru，student of SADA
The vocabulary of Sichuan dialect is mainly composed of three parts: the vocabulary of Bashu language inherited from the middle and ancient times, the vocabulary of immigrant language brought by immigrants in the Ming and Qing Dynasty, and the vocabulary of ancient Chinese.

> *In recent years, a large number of foreign words from Mandarin, English, and other languages have entered Sichuan dialect, as well as new Sichuan dialect vocabulary such as "Xiongqi", "Blend", "Fake", "Baibai" and "Bubuoer". Produced in big cities such as Chengdu and Chongqing, and quickly passed through Sichuan. The vocabulary of the Sichuan dialect has distinctive regional characteristics, reflecting the unique folk culture and customs of the Bashu area.* （*Li，2019*）

Now the Sichuan dialect is a Sichuan accent that is partial to Mandarin... Some special dialect vocabulary will not be discussed. The rest is the flat tongue, ing/in, eng/en, basically the nose there is also a change between three tones and four tones. For example, if there are three tones in Mandarin, the Sichuan dialect becomes four tones, and the Sichuan dialect has three tones.

Like a scream in Sichuan, the tone adjustment is very high. The undulations of the sound are also great, such as steep ridges and obvious changes in the curve. Many words and sentences in the cries are located in the high-frequency band between 80Hz and 60Hz. Individual relatively low audio frequency comes from the wind noise in the environment and the pause period of selling sound.

The sound landscape and intangible cultural heritage on the Silk Road are of great significance. The Shanghai Education Commission attaches great importance to "The sounds on the Silk Road from Xi'an to Urumqi—— Soundscape, recording and exposition of the sounds" and grants scholarships. Continue to conduct research, Shanghai Arts & Design Academy, set up a special fund for researchers to write "The sounds on the Silk Road from Xi'an to Urumqi—— Soundscape, recording and exposition of the sounds" monographs, to turn this research into an important document that can be used for Chinese sound art design, sound landscape research, and Silk Road sound landscape research.

THIRD SPECIFIC OBJECTIVE
The purpose of the thesis is to establish a program of diffusion and knowledge of the soundscape through the design of an exhibition space where interactive sound maps are established and a web page that shows the different soundscapes of the Silk Road in its journey in China. It is important to establish the dissemination of this material with the design of a Web page open to the contributions of people or groups that have newly created or historically sound documents with the sound culture of the Silk Road.

The material will be organized with sound maps geolocated by GPS, which will contain the content and description of the recording and environmental circumstances in which the sounds have been recorded. In developing this objective, we have established technological processes and artistic procedures to design a technological space to establish an immersive sensory sound experience in the space. The cartographic representation of sound is carried out utilizing different technological elements and sensors that amplify the perception of sound.

RESULTS:
The researcher's creative work during this doctoral dissertation is mainly reflected in Chapter 7. After the researcher passes the first part of the theoretical research, to the second part of the practical part, the researcher summarizes the previous methodology and mid-term research laboratory data analysis. In Chapter 7, the researcher summarizes the sound label design method, based on the ethnographic

methodology Under research, following the basic design of aesthetics, add the sound survey place name, sound title, sound recorder, location, date, specific time, weather, sound collection instrument and sound label content description; sound type; and cooperate with these in the sound label design. The data is recorded by the picture and the sound two-dimensional code. The sound two-dimensional code record here is the sound obtained after the researcher applied the sound editing software in the sound media laboratory of Shanghai Arts & Design Academy. A total of 272 sound tags were obtained.

These voices, as a sound database, are used as effective electronic data in Shanghai Art and Design Academy，will be included in the important research materials of the "Art Archives" of Shanghai Arts & Design Academy, which will be completed in 2021.

Under the research goal of establishing the "Silk Road Sound Map", the researchers also used the focus group discussion method in ethnography to find the most important area in the protection of the Silk Road sound landscape, the Dunhuang Mogao Grottoes in Gansu Province. , As a world cultural heritage, as the first sound map area to be established.

By organizing a focus group discussion, it is concluded that this area has 8 key sound collection locations and 2 secondary sound collection locations in the study of Chapter 5, with a total of 43 sounds and 43 pictures. The website code is designed in the form of POINT MAP. Because of the Chinese government's regulations on Internet use, its map is stored in the attached U disk file in the form of a stand-alone document with the research of this doctoral dissertation. The research on the soundscape map of the Silk Road is supported by a scholarship from the China Scholarship Council (CSC).

After the design of this map is completed, the researcher will serve as the Spanish cultural ambassador hosted by the Spanish consulate in Shanghai in 2020.

Using this soundscape map, the researcher will share the results of his studies in

Spain with more than 300 people.
 (https://www.sohu.com/a/407840456_117509.20
2020)
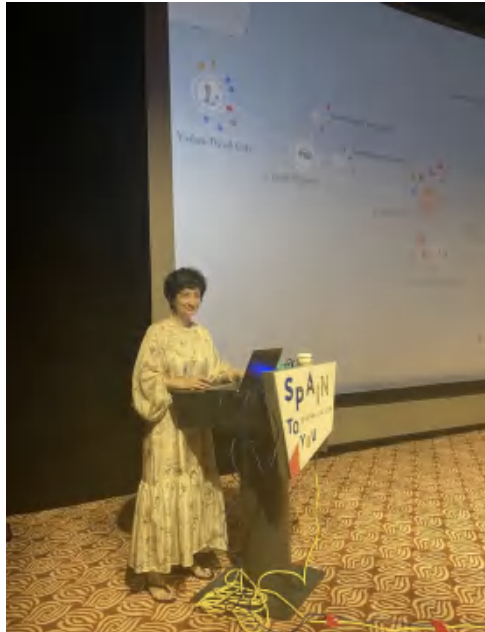
Figure. 8-1 The researcher explained the sound map of
the Silk Road during the Spanish Week in Shanghai，2020
（*Photo by Student Lai*）

In the application of interactive media art methods for Silk Road media art innovation, researchers visited the Yadan Devil City and Xiaofangpan City ruins in 2018 and found that this area except for the voices of tourists and tour guides that appear during summer or peak tourist seasons.

Apart from the sound and wind, there is no sound. How to apply modern science and technology for eco in this barren desert. In the final stage of this thesis, the researcher had an academic discussion with Associate Professor Huang Geng,

majoring in environmental landscape art and design at Donghua University in Shanghai, and concluded that the sound museum should be designed in such a place, using Touch design software, applying the latest interactive media technology, and Researchers recorded the sounds and visualized pictures of the Silk Road over the past five years and projected them to the "Dunhuang Sound Art Museum" or the "Multimedia Art Festival" in the multimedia art application of Barcelona, and projected these sounds and pictures interactively. On the "city wall" of Yadan landform, this quiet "devil city" due to the weathering of the natural environment is socialized, and its world profile is increased. It uses human activities to gradually improve the status quo of its desert ecology and natural environment, bringing impressiveness to the audience. At the same time, using the Internet to spread the sound experience, so that audiences from all parts of the world can enter the "Sound Media Art Exhibition on the Silk Road" at any time.

This research is also supported by the Qiubei county-level government in the Puzhehei region of Yunnan. The research of this doctoral dissertation is brought into the Puzhehei karst landforms, and its five-A scenic spot is improved to improve the tourist experience. The researcher has led a student team and used Html5 software. The Puzhehei tourist soundscape map was developed to express the local festivals, customs, and food characteristics through sound.
QR code

8.2 Social influence

The characteristic of sound lies in its timeliness and fluidity. No man ever steps in the same river twice The Greek philosopher Heraclitus used the philosophy of "change" to point out that people cannot step into the same river twice. The uniqueness of sound and its unique temporality are inherently irreversible. Everyone's voice is unique. Even if the same object makes the same sound, there are subject differences in a different time, space, and other environments.

The first impact of this research is that the Silk Road has its important status and academic research value in Chinese history. Modern scientific and technological means can be used to record, preserve, classify, and recreate the sound to restore its historical sound and establish the sound media library provided by the future generations laid a theoretical research foundation for the mainline of research on the Silk Road.

The second impact is that the current lack of sound media art education in China is that in China's megacities and even large cities, many students and even teachers are limited in hearing the sounds of nature. After encountering the "noise" of social life in the natural soundscape, a lot of traffic noise is mixed in urban cities like Xi'an. Therefore, as long as these design students have the sound requirements of games or animation scenes, they can copy and paste some sounds on the Internet to complete their sound design. It ignores the creativeness of sound as a subject that can mold a very strong subject. The sound archives established by this research system after investigating multiple cities and natural landscapes on the Silk Road just made up for the lack of current education in China and stimulated students' imagination for sound art design and creation. Through these sounds, we can see that the dialects in the city are diverse, and the sounds and tones of the regional characteristics of each place are very different. Enriched the diversity of his career after graduation.

The third influence is that many key research areas that have experienced five thousand years in China still retain historically similar human and ecological environments. With the development of human industrialization, many traditional handicrafts and production methods are changing or even disappearing. The sound collection method is used to record these endangered sounds, and re-number them, and archive them in the cloud, which is important for protecting the material culture and immateriality of the Silk Road. Cultural heritage plays an important role. It provides a theoretical basis for the research on the soundscape of the Silk Road.

With the rapid advancement of modern industrial technology and human civilization, "noise" has begun to invade our lives continuously. In the final writing stage of this doctoral research, the researcher tried to find a "quiet" place to write and was disturbed by various information and noises every day, and finally had to wear noise-reducing headphones and cover the surrounding with music and singing Voice, to achieve a relatively quiet writing atmosphere.

In the important research areas derived from the ethnographic methodology of this article, some ethnic minorities live in concentrated communities. Although the economy is relatively backward, their villages have a relatively good natural ecological environment, traditional cultural festivals are less impacted by industrialization, and handicrafts, and other intangible cultures.

The heritage preservation is relatively complete, but the problems faced are also more serious: traditional handicrafts are faced with problems such as uninherited, lack of traditional materials, and historical and cultural monuments encounter problems such as weathering in the natural environment. Through this research, these voices that people cannot hear are brought to the audience through the museum's sound media art exhibition. The use of interactive sound media art methods allows the world to recognize the problems of these areas while protecting and preserving traditional culture. , To promote local economic development through cultural tourism.

FUTURE IMPLICATIONS OF THE RESEARCH WORK.

1. Provide practical and theoretical reference value for exhibitions such as Future Sound Museum, Multimedia Art Museum, Digital Sound Cloud Museum, and museum education. The validity and effectiveness of sound data have their characteristics of the times and research value. Researchers are in the period from 2016 to 2021. In China, sound media art has gradually moved from visual art assistance to the protagonist, especially in 2020, the world will be closed. During the process, sound media art projects such as Cloud Audiovisual, Cloud Conference, and Cloud View Exhibition have moved to major museums.

In the future, the digitized sound can be designed into the IP of the key research area on the Silk Road, as a city-labeled sound, which can be loaded into sound editing software or analysis software to generate different wavelengths, rhythm, and rhythm maps. The map can be used in the design of urban IP, intangible cultural heritage IP, and geographical feature IP design. Provide research directions for the application of "cultural" design derivatives in future extension design.

2. In 2018, the NACG Digital Art Competition International Exhibition, supported by the National Education Commission of China, was held on the main campus of the University of Barcelona as the main curator during the doctoral research period of the University of Barcelona.

Web search:
The "Voice of Xi'an" provided by the researcher attracted the attention of the competition organizer during the exhibition. In 2018, the 6th Digital Art Competition held in Shanghai invited Ms. Gema campo from the Faculty of Fine Arts of the University of Barcelona and the president of Shanghai Arts & Design Academy and Crafts. As the initiator of the competition and supported by the United Nations Institute for Training and Research, (web linkhttps://www.sohu.com/a/215379335_100044676,2018）

In 2020, the student work "Cat Voice Map" guided by the researcher won the second prize of the competition. In 2021, the NACG Digital Art Competition will cooperate with the Shanghai Conservatory of Music, Shanghai Arts & Design Academy, and other universities to set up training courses for "Digital Audio Designer".
(Link: https://www.yiihuu.com/courses/11648. 2021)

For the first time, "Digital Audio" was proposed in the NACG Digital Art Competition as an independent entry project. Students from more than 400 universities in China will participate in the competition. At the same time, in 2021, researchers will exhibit all the participating sound artworks in the form of "sound labels" at the headquarters of the European-Chinese Times in Austria, Europe. This is also the biggest social contribution of this doctoral dissertation to the research of sound media art.

8.3 General Conclusion

By exploring the sound media art on the Silk Road, you can see the Silk Road culture and intangible cultural heritage that has lasted for thousands of years. Due to the unique climate and geological characteristics of the desert area, it has been keeping until today.For example, the Cao family in the Yulin Grottoes was the first place at that time. Its portraits, costumes, and attendants represented the highest level of painters at that time. The lines, skin tones, and costumes of the paintings found in the Yulin Grottoes all come from our research on the Tang and Yuan dynasties.

Today, in the form of sound recording, the author writes the records made under certain weather conditions on a particular year, specific day, specific time, and specific time in the time section into the sound media library,put it into the sound map node and attaches a picture to the text in the form of a QR code.

Comprehensively show the artistic conception of the time and carry out literary creation. As a scholar obsessed with sound to a sound media artist who studies in-depth, after five years, starting from Shanghai, China, the researchers walked through the Chinese part of the Silk Road and visited many famous historical and cultural villages in Asia and Europe.

During the five years, the researcher's sound media art-related works have been exhibited in many exhibitions at the University of Barcelona, the Croatian Museum, and other places, and related papers were published in the CSSCI journal in April 2017 and awarded by the China Scholarship Council and Shanghai Municipal Government. Academic and project support from the government and Shanghai Art and Design Academy. The research of this doctoral dissertation has completed the research goals, research hypotheses, and research methodology set up in the early stage. According to the methodology, the Fieldwork and practice was complete at the beginning of 2021.

At the same time, the research is carried out step by step and is related to the sound media art on the Silk Road. Art creation and exhibition. Although the study of this doctoral dissertation has been completed, the researcher's exploration of sound media art on the Silk Road will not end there. The research and protection of the soundscape of the Chinese section of the Silk Road and other regions across Eurasia will continue to apply the methodology and practical methods of this research and continue to improve the coverage of the soundscape map of the Silk Road. The old Chinese saying, "read thousands of books and travel thousands of miles." The destination is also the starting point of the next journey.

ANNEX

Annex 1: Bibliography

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Annex 2: Sound label summary

Yummengguan Museum
1.DUNSR0016MS
2.DUNSROO22MS
3.DUNSR0026XY

Xiaofangpan City Ruins
1.FANGSR001MS
2.FANGSR002MS
3.FANGSR0013MS
4.FANGSR0014MS

LanZhou
1.LANSROO52MS
2.LANSR0053MS

Liangzi Lake
1.LIANGSR006MS
2.LIANGSR007MS
3.LIANGSR011MS

Longmen Grottoes in
1.LOUSR0027XY
2.LUOSR0031MS
3.LUOSR0033MS

Dunhuang Mogao Grottoes
1.MOSR009MS
2.MOSR0014MS

Qinghai Lake
1.QINGSSR0016MS
2.QINGSSR0017MS
3.QINGSSR0018XY

4.QINGSSR0019MS
5.QINGSSR0020MS
6.QINGSSR0021MS

Sun Moon Mountain
1.RIYUESR0013MS
2.RIYUESR0014MS
3.RIYUESR0015MS

Urumqi
1.Aeroport de Sanya
2.Camps de xingjiang
3.Dos Carricoches
4.escombrant i remor 2
5.escombrant i remor 3
6.escombrant i remor 4
7.escombrant i soroll
8.FABRICA DE PAPER
9.Gall de Xingjiang sons i silen
10.Juerga Nocturna a Xingjiang
11.Mercat Nocturn de Xingjiang
12.Mercat Nocturn de Xingjiang

Taer temple
1.TASRoo1XY
2.TASRoo2XY
3.TASRoo4XY
4.TASRoo7MS
5.TASRoo9MS
6.TASRo10XY
7.TASRo10XY

XI'AN
1. XIANSR002
2. XIANSR009
3. XIANSR010

4. XIANSR011
5. XIANSR012
6. XIANSR014
7. XIANSR015
8. XIANSR019
9. XIANSR020
10. XIANSR021
11. XIANSR031
12. XIANSR033
13. XIANSR034
14. XIANSR036
15. XIANSR039
16. XIANSR041
17. XIANSR042
18. XIANSR056
19. XIANSR059
20. XIANTSR002
21. XIANTSR003
22. XIANTSR004
23. XIANTSR005
24. XIANZLSR003
25. XIANZLSR004

Dunhuang Yadan Geopark
1. YADANSR003MS
2. YADANSR004MS
3. YADANSR005MS
4. YADANSR006MS
5. YADANSR007
6. YADANSR008MS
7. YADANSR009MS
8. YADANSR010MS

Guazhou Anciient City Ruins
1. YULINR003XY
2. YULINR004MS
3. YULINR005MS
4. YULINR006MS
5. YULINR007MS
6. YULINR0024MS
7. YULINSR001MS
8. YULINSR002XY

Yulin Cave Ruins
1. YULINSR008MS
2. YULINSR009MS
3. YULINSR009XY
4. YULINSR0011XY
5. YULINSR0012XY
6. YULINSR0013XY
7. YULINSR0013XY
8. YULINSR0014MS
9. YULINSR0015MS
10. YULINSR0016MS
11. YULINSR0018MS
12. YULINSR0019MS
13. YULINSR0020MS
14. YULINSR002MS
15. YULINSR0022M
16. YULINSR0023M

Yongren County Yunnan
1. YUMENSR0011MS
2. YUNSR003MS
3. YUNSR004MS
4. YUNSR005MS

5. YUNSR006MS
6. YUNSR007MS
7. YUNSR008MS
8. YUNSR009MS
9. YUNSR0010MS
10. YUNSR0011MS

Zhizuo Village
1. ZHISR003MS
2. ZHISR004XY
3. ZHISR005MS
4. ZHISR007MS
5. ZHISR008MS
6. ZHISR009MS
7. ZHISR0010MS
8. ZHISR0012MS
9. ZHISR0013MS
10. ZHISR0014MS
11. ZHISR0015MS
12. ZHISR0016MS
13. ZHISR0017MS
14. ZHISR0018MS
15. ZHISR0019MS

Erhai
1. ZHISR0020MS
2. ZHISR0021MS
3. ZHISR0022MS
4. ZHISR0023MS
5. ZHISR0024MS
6. ZHISR0025MS
7. ZHISR0026MS
8. ZHISR0028MS
9. ZHISR0030MS

Shuanglang Autonomous Prefecture
1. ZHISR0038MS
2. ZHISR0039MS

Annex 3: Summary of sound modification files

NO.	DATE	SOUND NAME	The Longmen Grottoes
	13.07.2018		
1		LUOSR026XY	
2		LUOSR027XY1	
3		LUOSR027XY2	
4		LUOSR031XY	
5		LUOSR032XY	
6		LUOSR033XY	
7		LUOSR034XY	
8		LUOSR035XY	
9		LUOSR036XY	
10		LUOSR040XY	
11		LUOSR041XY	
12		LUOSR042XY	
13		LUOSR043XY	
14		LUOSR044XY	
15		LUOSR045XY	
	14.7.2018	Lanzhou	
15		SR48XY	
16		SR51XY	
17		SR53XY	
	18.7.2018	Dunhuang Night Market	
18		SR028AXY	
19		SR028BXY	
20		SR029AXY	
21		SR029BXY	

22	SR030XY	
23	SR032XY	
20.7.2018	YULIN SR008XY	Yulin Cave
24	YULIN SR009XY	
25	YULIN SR010XY	
26	YULIN SR011XY	
27	YULIN SR012XY	
28	YULIN SR013XY	
29	YULIN SR014XY	
30	YULIN SR015XY	
31	YULIN SR019XY	
32	YULIN SR020XY	
33	YULIN SR021XY	
34	YULIN SR023XY	
35	SR022MS1	
36	SR022MS2	
37	SR022MS3	
143	SR022MS1	
144	SR022MS2	
145	SR022MS3	
146	SR022MS4	
147	SR022MS5	
21.7.2018	Dunhuang Mogao Grottoes	
39	SR0016MS2	
40	SR0022MS	
41	SR0026MS	
42	MOGAO SR001XY	
43	MOGAO SR002XY	
44	MOGAO SR003XY	
45	MOGAO SR004XY	
46	MOGAO SR005XY	
47	MOGAO SR006XY	

48	MOGAO SR0011XY	
49	MOGAO SR0013XY	
16.7.2018	Xining Thar Temple	
50	SR001XY	
51	SR002XY	
52	SR004XY	
53	SR006XY	
54	SR007XY	
55	SR008XY	
56	SR009XY	
57	SR0010XY	
58	SR0011XY	
59	SR0012XY	
21.1.2019	DaliBai Town	
60	SR031XY	
61	SR032XY	
62	SR033XY	
63	SR034XY	
20.1.2019	Dali Shuanglang Ancient Town	
64	SR039XY	
65	SR040XY	
66	SR041XY	
22.1.2019	Xizhou Ancient Town	
67	SR035XY	
68	SR036XY	
69	SR037XY	
22.1.2019	Dali Gantong Temple	
70	SR001XY	
71	SR002XY	
72	SR003XY	
73	SR004XY	
74	SR005XY	

75	SR006XY
76	SR007XY
77	SR008XY
78	SR009XY
79	SR010XY
80	SR011XY
81	SR012XY
	Xi'an
82	180116-094514 Nanjing nan station
83	180116-110208 Xuzhou
84	180116-140556 Sound of train
85	180116-140556 Sound of train
87	180116-170358 Drum tower square
88	180116-170021 Drum tower
89	180116-172743 Huimin street
90	180116-183104 Drum tower night
91	HUIMIN STREET Strike iron
92	180117-102128 TITLE
93	Plaza in front of the city hall
94	180117-104816MS Sound of street
95	180117-105250 Wolong Temple
96	Forest of Steles
97	Forest of Steles☐bird☐ dog
98	Wenchang Gate
99	Huimin street day1
100	Huimin street day2
101	Dapiyuan Mosque
103	Silverware sound
105	Snow sound
106	Dayan Pagoda North Square1
107	Dayan Pagoda North Square2
108	Dayan Pagoda North Square3
109	Dayan Pagoda North Square bird song
110	Dayan Pagoda bells

111	bird song
112	bells
113	Snows
114	Footsteps on Big Wild Goose Pagoda
115	Little Wild Goose Pagoda bird song1
116	Little Wild Goose Pagoda snow sound in the lake
117	Little Wild Goose Pagoda bird song 2
118	Little Wild Goose Pagoda bells
119	Gulou Musical Instruments Market
120	Taxi story
	29.6.2018 Liangzi Lake Lotus Pond
121	SR005MS
122	SR006MS
123	SR007MS
124	SR008MS
125	SR0011XY1
126	SR011XY2
	30.6.2018 Dayuwan Town
127	SR012MS
128	SR014MS
129	SR015MS
130	SR018MS
131	SR019XY
132	SR021XY
133	SR022MS
134	SR023MS
135	SR024MS
	19.7.2018 Guazhou Ancient City
136	SR001MS
137	SR002XY
138	SR003XY
139	SR004MS
140	SR005MS
141	SR006MS

142	SR007MS
	DaLi Erhai
148	SR020MS1
149	SR021MS1
150	SR021MS2
151	SR022MS
152	SR023MS
153	SR024MS
154	SR025MS
155	SR026MS
156	SR028MS
157	SR029MS
158	SR030MS

19.2.2019　　　　　ZHIZUO

159	SR003MS
160	SR004XY
161	SR005MS
162	SR007MS
163	SR008MS
164	SR009MS
165	SR010MS
166	SR011MS1
167	SR011MS2
168	SR011MS3
169	SR011MS4
170	SR012MS

18.2.2019　　　　　YONGREN

171	SR013MS
172	SR014MS
173	SR015MS2
174	SR015MS3
175	SR015MS4

176	SR015MS5
177	SR015MS6
178	SR016MS1
179	SR016MS2
180	SR017MS1
181	SR017MS2
182	SR017MS3
183	SR018MS1
184	SR018MS2
185	SR018MS3
186	SR019MS1
187	SR019MS2
188	SR019MS3
189	SR019MS4
190	SR019MS5

17.7.2018　　　　　RIYUE MOUNTAIN

191	RIYUESR013MS
192	RIYUESR014MS
193	RIYUESR016MS

17.7.2018　　　　　QINGHAI LAKE

194	SR017MS
195	SR018XY
196	SR019MS
197	SR020MS
198	SR022MS
199	SR024MS
200	SR025MS

17.7.2018　　　　　QINGHAI LAKE.DANGEER

201	SR027MS
202	SR031XY
	XIAOFANGPAN CITY
203	FangSR0012MS

204	FangSR0013MS	
205	FangSR0014MS	
206	FangSR0015MS	
	18.7.2018	YANDAN DEVIL CITY
207	SR003XY	
208	SR004XY	
209	SR006XY	
210	SR007XY	
211	SR009XY	
212	SR010XY	
	19.7.2018	Museum of GANSU
213	SR015XY	
214	SR016MS	
215	SR017XY	
216	SR018MS	
217	SR021MS	
218	SR024MS	
219	SR026MS	
220	SR030MS	
	5.2019	URUMUQI
221	aeroport de sanya	
222	campus de xinjiang01	
223	Dos carrichoches	
224	escombrant I remor 2	
225	escombrant I remor 3	
226	escombrant I remor 4	
227	Fabrica de PAPEL1	
228	Fabrica de PAPEL2	
229	Fabrica de PAPEL3	
230	Fabrica de PAPEL4	
231	Gall de Xingjiang sons i silencis nocturns-01	
232	Juerga Nocturna a Xingjiang	
233	Mercat Nocturn de Xingjiang1	

234	Mercat Nocturn de Xingjiang2	
235	Mercat Nocturn de Xingjiang3	
236	Persones del camp parlant i carricoches	
237	Recitat del Coran al camp	
238	Salmodia al carrer4	
239	Venedor ambulant amb moto	
	21.7.2018	Museum of GANSU
240	MISR007XY	
241	MISR008XY	
242	MISR009XY	
243	MISR010XY	
244	MISR014XY	
	28/31.7.2020	YUNNAN
245	20200728 123154flower embroidery.m4a	
246	20200728 155049XICHOU Bugs.mp3	
247	20200728 202017MALIPO Bugs1.mp3	
248	20200728 202353 MALIPO Bugs2.mp3	
249	20200730 153419 Zhuang folk song1.mp3	
250	200731 230800 Zhuang folk song2.mp3	
251	20200801 163529Guangnan Drum.mp3	
252	0200802 100629Park Song.mp3	
253	20200802 100858 Three Bird Totem.mp3	
254	20200802 104506Market guangnan.mp3	
255	20210107 172426 Red-headed gull.mp3	
256	20210107 172948 gull grabs food.mp3	

Papers and exhibitions published during the PHD study

- Paper:

  09/2019"Ant community": Community complex sustainable design based on design bionics—Case study of the Can Batlló community in Barcelona
  2019 3rd International Conference on Water Conservancy, Hydropower and Building Engineering (WCHBE 2019)September 20-22, 2019 Dalian, China Liang Xu[1], Qipeng Liao[3], Yuqi Liu[3], Miquel Planas Rossello[1]and Linlin Wang[2]

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- 04/2017 Wang Linlin. (2017). Research on the method of exploring the sound of the Silk Road based on sound media art. Decoration (04), 140-141. doi:10.16272/j.cnki.cn11-1392/j.2017.04.044. CSSCI

- 06/2017 "Application of melt deposition technology in freeze-frame animation design" published in 2017 in the provincial journal "Art Section-June". Its academic value lies in the combination of new materials and traditional freeze-frame animation.P.88.89

- 01/2017 Wang Linlin. (2017). Wang Linlin's watercolor works. Journal of China University of Geosciences (Social Science Edition) (01), 2. doi:10.16493/j.cnki.42-1627/c.2017.01.001. CSSCI

Exhibition:

- 10/2020 Intangible cultural heritage sound label，Liu Haisu Art Museum，　Shanghai，Multiplayer exhibition

- 02/2020 The Media Art on the Silk Road ArtBox 4 University of Barcelona

- 　　　　Personal exhibition

- 05/2020 Wind and rain in the Same Boat Watercolour Exhibition in May，

- 　　Huashan Art Museum，Shanghai,Multiplayer exhibition

- 09/2019 Manyan Watercolor Exhibition，　Meibo Art Museum,shanghai，Multiplayer exhibition

- 03/2018La boca de cieclo, exhibited at valldoreix in 2018

- 02/2018 works"Sound of XI'AN"on the 2rd NACG international digital Expo in the University of Barcelona

- 07/2017 works "listening to the ink China" in July 2017 to September at the National Archaeological Museum of Croatia exhibition, digital paintings.

- Project and Awards :

- 09/2020-08/2021 China Scholarship Senior Visiting Scholar Program of Young University of Shanghai Education Commission

- 09/2019-08/2020 Silk Road Sound Sculpture Project, Suport by Shanghai Art & Craft Acadamy

- 07/2017-07/2018 University of Barcelona Outstanding Student Scholarship

-

Important articles and exhibitions certificate:
Articles:

2019 3rd International Conference on Water Conservancy, Hydropower and Building Engineering (WCHBE 2019)

September 20-22, 2019   Dalian, China

Certificate of Participation

Manuscript Number: AJ2667

Author(s): Liang Xu, Qipeng Liao, Yuqi Liu, Miquel Planas Rosselló and Linlin Wang

Title: "Ant community": Community complex sustainable design based on design

bionics—Case study of the Can Batlló community in Barcelona

This is to certify that the authors of the paper have participated in the 2019 3rd International Conference on Water Conservancy, Hydropower and Building Engineering (WCHBE 2019) and made the oral presentation on September 21, 2019.

The Committee of WCHBE 2019

AEIC Academic Exchange Information Center

September 21, 2019

基于声音媒体艺术探索丝路之声的方法研究

Study on the Method of Exploration on Sounds of the Silk Road Based on Acoustic Media Arts

王林林　Wang Linlin

内容摘要：丝绸之路推动着文化融合，运用声音媒体的方法记录丝路之声是极具价值的。本文通过模拟研究古乐器造型法、虚拟现实交替法及声音媒体库建立法，探索丝绸之路上的声音，建立型音档案库系统，把声学装置艺术化地组织起来，带给现代人可感知的艺术体验。

关键词：丝路之路、声音艺术、丝路之声、声音媒体、声学装置

从古至今，丝绸之路在增强沿路各国文化的交流与融合上都起着重要作用，丝绸之路也蕴含了丰富的、尚未发掘的声音艺术。声音媒体艺术是结合音乐与造型艺术的创新研究，为挖掘、保护与传承丝路之声的有效方式。为了达到艺术创作的目的，更为了建立有价值的声音媒体库，应该将一些正在流失的非物质文化遗产以声音档案的方式保存下来。

一、丝绸之路上的声音艺术

丝绸之路之所以改变了历史，很大程度上因为丝路上穿行的人们沿线传播着各自的文化。目前，国内很多博物馆引入 4D 多媒体方式，展示历史上某些传统手工艺的制作方式，或者还原再现一些已经消失了的历史场景。例如，上海自然历史博物馆组织专业人员制作的《回到白垩纪》系列教育片，曾引起广大青少年参观者的兴趣。本项研究尝试结合丝绸之路出土的乐器及敦煌壁画遗留下来的历史绘画素材育后人，把电子出版物引入博物馆教育系列，使人能在一种轻松愉悦的环境中感受历史。

把声音媒体艺术和应用科学结合起来是一个新兴的研究方向，国外的研究学者主要将

其运用于应用科学，如比利时根特大学教授马克·勒芒（Marc Leman）综合物理、心理学和音乐学研究结果表明：人类的肢体语言受音乐，确切说是声音的变化，经过脑波神经反射，产生有律律肢体变化。比如欧弗斯的人的表演者，其头、肩、腿的节奏变化随着演奏音乐的变化呈平风琴式的扭动。根据此项研究理论，实验室成功应用此项研究治愈了帕金森症患者中途路失衡的病人；又有一种特殊声音下，根据脑波反射到肢体，成功治愈脑神经损伤病患走路时朝一个倾斜的问题。当然还需要配合物理治疗。

纵观丝绸之路上很多地方，其文化根源共性导致艺术表现形式的多样性及相似性。如弗拉明戈就是从西班牙民间走向国际大舞台的一种综合性艺术表演形式，融舞蹈、音乐、歌唱于一体，一切艺术皆由生活而来，今天的"新疆舞"及乐曲就是通过丝绸之路流传到中国古代西域的，之后张骞两次出使西域，又把这种结合了异域文明的多元化艺术传过中原，推动了我国南朝时期歌舞、乐器等卫生的发展。因此，这些从声学媒体角度，在出土的乐器及敦煌壁画遗留下来的历史绘画素材国家和地区研究丝路之声，具有特殊的研究价值。

二、模拟乐器造型

丝绸之路上很多乐器是经阿拉伯商旅由欧洲传入东方的，根据中国古典乐器造型，可以创作出声音装置乐器造型，把声音媒体艺术装置由设备揭再线的仪器简化到一些单弦的，可以敲打的，或者 3D 输出打印的几何形体。

笔者与巴塞罗那大学教授约瑟普·塞尔达（Josep Cerdà）在巴塞罗那大学声学媒体实验室共同研究的声学雕型项目，其核心手段是运用艺术设计的方法，对丝绸之路上的地域性乐器特征进行提炼，设计出最合原有语义的声音装置艺术作品。塞尔达教授与笔者以中国古代铜镜的造型为基础，根据不同高低音造型后，根据镜的演奏方式，实验出不同的造型并编组演奏，如图 1、2，其特点是不仅有古代青铜镜的影子，还融入了当代几何造型，赋予其鲜明欢快的色彩，在演奏时，可根据演奏者融击频率变化，得到如古代镜一般响亮的声音效果，或敲奏，图 3、4 为塞尔达教授与巴塞罗那大学声学声媒体实验室成员共同研究出的声音雕塑造型" baschet "系列作品，其创意在于结合了丝绸之路上铜与铊铸的造型，设计出不仅可以敲打，还可以弹奏的声音装置作品。设计团队根据两种不同乐器的演奏和发音规律综

室共同研究的声学雕型项目，其核心手段是运用艺术设计的方法，对丝绸之路上的地域性乐器特征进行提炼，设计出最合原有语义的声音装置艺术作品。

在材质与声效上，为了追求声学品质，综合运用软、硬木或不同材质（如石材、金属、玻璃等），可以找到最佳设备材料。运用力学原理，根据长度选择力学作用点，敲打声音装置作品时，随位置的不同，产生不同的声学效果，同时，选择整体长度的几个特定比例位置，定义声学装置作品的不同音调，设计出更为和谐悦耳的共鸣音，图 3、4 为塞尔达教授与巴塞罗那大学声学声媒体实验室成员共同研究出的声音雕塑造型" baschet "系列作品，其创意在于结合了丝绸之路上铜与铊铸的造型，设计出不仅可以敲打，还可以弹奏的声音装置作品。设计团队根据两种不同乐器的演奏和发音规律综合设计，并利用扩音喇叭原理将不同方式表现出来的声音传播出去，前面设计的红色 喇叭花"是为了聚合演奏时发出的声音，作品支架的造型，设计全部都为消音设计，这样听众听到的声音便全部来自红色扩音部分。(图 5)

另一组名为" Timbre "的模拟造型艺术作品，是典型的利用石材制作的声音装置设备，根据中国古代罄"和"铍"的发音原理，运用现代技术手法加工制作，该作品于笔者于 2014

年在巴塞罗那大学声音多媒体实验室。当代艺术石材创意工作室与赛尔达教授及另外两名研究员共同设计制作而成。

设计过程据如图 6 所示，其尺寸高 56 厘米，宽 40 厘米，整体都是随石材天然造型有所变化，最起始厚度约为顶端厚度的三倍。发音板设计的薄厚变化直接影响打击声音乐器的声音变化，如曾悦艺器由上编钟有一种瀑响渡渥。面积过厚过通过通过声音都有不同影响。因此，经过多次推敲实验后，模仿中国古代罄，两面有厚薄之分，中间有孔。正好对应声学出不同音色。Timbre 的造型设计也成为上面的弧弯，下面较薄的造型。

"金石之声"中的"金"就是指编钟，"石"指编磬。沈括在《梦溪笔谈》中有如有论述："石种随即闻钟、扁闻闻钟、声短耐厚，节短处声即相越、不成音律。"因此，我们规则纵向三等分后，镜向重各分割比例造标键位置内部，中间这间隔、而编乐分的两根声音标接一直继续调锅振下方、这样设计的是因是某种物体单有自己的"声音属性"、以最打一根棒状物体为例，如果手持一根棒状物体，可以越金属速体水下、可以中空或者实心、一手执后木不问生点，当另一手用一些越打金属棒调打，得出的声音频率是不一样的，每个物体都有属性。人及同则的最来"声音"乘我们手执打击越的位置不同，在声长度的 1/3 位置时，得出的声音最低低。

根据古代丝绸之路上乐器造型及其发声原理，加上当代声学艺术创意，制作造型朗的声学装置，用声调拍敲软件与计算机媒体技术相结合、请把它是最后的声音采样与声学装置同时演奏之后，再把这种经过演奏和处理过过给声音一条条根据入声，并其他比观之源相对国家博物馆过行展试，就可以这番声音的独特性。把"丝绸之路"的故事传播给后人。尽管乐器本身并不具待动感发，但是可以通过这击或摩擦来发声，无论是在城市还是乡村村落中末端，世界各个地方都充满越声音并命的材料、只有有物越去形，才可以顺畅无致记忆。激发出我们的想象力，并成为声音艺术创作上的新尝试。

最后，在音域响上利用建立、分割的思想提起一块石板"分裂"或高低音区。敲击器代替特征方制粗类顶固用的乐器，中心低敲、两片相击击敲声、笔者在欣赏作品的造型设计时，用考其设计美越的同时、深入越究了老子的哲学思想，结合"阴"与"阳"和八扑图中的圆形图图，寓意合音音管，在中国设计了圆孔锭分结构，正面同阴的地方即为反馈的凸出点设计。在 Timbre 的特频凝时时，围绕中国圆形越进行出越发短的声音。

设见之，声音设计跟越越设计一样重要，与之不同的越越，呈视跨界众价的一段升精，可以再利不的的艺术演法和应用价值：把声学艺术和另门学科领域结合起来。创作声音媒体艺术是本研究的重点内容。此项研究结合了对丝绸之路文化的研究，只有在于通过实践越越这一项媒之路文化的研究。中国上下五千年历史文化研究中有诸多值待发现的声音，都可以结合本研究方式形式成越热。

结论

声音媒体艺术是结合音乐与造型艺术的创新研究。通过对声音的采集与创作，例如越热、人文环境、节日、工业越行业声音等，不仅仅是一种艺术创越研究，而且是一门实用科学。例如应用在心理问题的病人身上的声音治疗方法、儿童早期音越越型设计音量、公共空间越成越等方面。

声音艺术越在数字媒体艺术、动画和越戏越设计等专业中不可或缺，但相关研究甚王，很多越戏越创作都越意注在人物、场景等设置上，越越忽越笔的声音越大多越未越过专业、系统的学术性

王林林　上海工艺美术职业学院

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王林林水彩作品

硕果 水彩 42*30cm 2016

博弈 水彩 21*29cm 2015

绽放 水彩 42*30cm 2016

张力 水彩 42*60cm 2015

王林林/上海工艺美术职业学院，讲师，巴塞罗那大学博士研究生，主要从事动画，与声学雕塑方向的教学与研究。

Exhibitions：
Liu Haisu Art MUSEUM

刘海粟美术馆

大美工艺 匠心育人——百年海派工艺美术教育文献展

策展团队人员名单

主办单位：

上海工艺美术职业学院、刘海粟美术馆

特别鸣谢（以姓氏笔画排序）：

丁乙、万华、王守中、王林林、朱方秋、汤毛基、汤哲明、陈友汉、陈宁、张救涛、张进贤、李宁白、汪家民、沈国亚、沈成娟、伴凡、姜鸣、阿惠平、吴觌士、新晴、班蔡、苏天赐、潘鸿籍

展览总策展人：许菁、宫平：

项目执行策展人：萧世亮、覃育俊：

学术顾问专家：

朱青青、王敏、刘中华、湖怀景、周向、张磊
《六十年、六十人》口述史采访项目策展人：邵纳娴、于洋、王彩嘉、阿觐滋
《六十年、六十人》口述史记忆剪辑策展人：陈定、吴戎、陈玥、裤客、沈沁和、邝忱盈

学术顾问策展人：

杨韵、彭光武、王波、皋延张、李玫、葛方群、盛佼蕊、金润、陈信滋、李刚、林州、陈文强、胡娥

展览衍生品策划策展人：王林林、黄俊贤司徒：

项目执行团队人员：

柯怡、曹鸣、保作、吴宏、李棉、徐慧、宫屺菜、荣玥、李路瑶、金莱范、李元帝
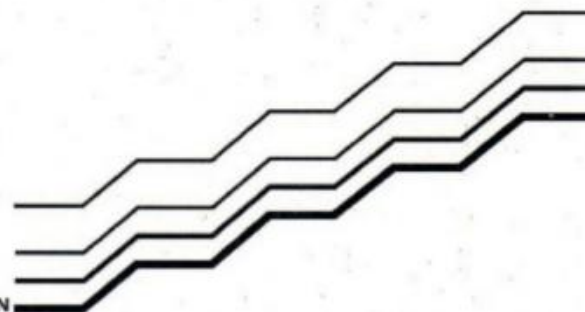
CERTIFICATE OF PARTICIPATION

The University of Barcelona in España hereby certifies that Wang linlin Partipated as an artist on an Exhibition: The sound Art of SilkRoad, held on the University of Barcelona, from February 10st to February 20st, 2020.
The exhibition was organized by the University of Barcelona, Shanghai Art & Design Academy

Dr. Manuel Aramendia
Vicedeganat de Cultura Facultat de Belles Artes
February 18st, 2020.

UNIVERSITAT DE
BARCELONA
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Vicedeganat de Cultura

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Project and Awards:

中国国家留学基金管理委员会
CHINA SCHOLARSHIP COUNCIL

May 31, 2016

To whom it may concern,

This is to certify that Ms. WANG LINLIN （File No. 201608310071, Date of Birth:1980-12-04） has been awarded a scholarship under the State Scholarship Fund to pursue study in Spain as a visiting scholar. The awardee was selected through a rigid academia evaluation process organized by the China Scholarship Council (CSC) in 2016. The scholarship covers the international airfare and the living stipend. The stipend is EUR 1,100 per month for a period of 12 months. The Education Section of the Chinese Embassy or the Chinese Consulate General in your country is entrusted by CSC to look after the welfare of the awardee and make the payment to the awardee.

CSC is a non-profit institution affiliated with the Ministry of Education of the P.R.China. It is entrusted by the Chinese Government with the responsibilities of managing the State Scholarship Fund and other related affairs. It sponsors Chinese citizens to pursue study abroad and international students to study in China.

In accordance with the laws and regulations and related policies, the awardee has signed with CSC an "Agreement for Study Abroad for CSC Sponsored Chinese Citizens". In this notarized Agreement, the awardee promises to return to China upon completion of planned study within the set time in your country.

This document is valid on condition that the awardee arrives in Spain no later than May 31, 2017.

CHINA SCHOLARSHIP COUNCIL

Add:Level 13,Building A3, No.9 Chegongzhuang Avenue, Beijing 100044, P.R.China
TEL:86-10-66093900 83393619 FAX:86-10-88393620 http://www.csc.edu.cn

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UNIVERSITAT de BARCELONA

Beques de Col·laboració
Beques i Ajuts a l'Estudiant

Convocatòria de beques de col·laboració amb la Universitat de Barcelona 2017.3, de 10 d'abril de 2017

Beques de col·laboració amb el Vicerectorat de Docència (Web i Multimèdia)

VR-PD.1

D'acord amb la base VII de la convocatòria s'estén la present

CREDENCIAL DE BECARI / BECÀRIA

a favor de *LINLIN WANG* amb el NIF/NIE núm *Y3817691G*

El període de col·laboració s'inicia en data 15 de setembre de 2017 i es preveu que finalitzi en data 15 de juliol de 2018.

La vicerectora d'Estudiants i Política Lingüística

Alba Ambròs Pallarès

Barcelona, 18 de juliol de 2017

B:KC

2018 NCDA Awards
6th National College Digital Art&Design Awards
第六届全国高校数字艺术设计大赛

一 等 奖

参赛组别: 教师组
作品类别: 互动媒体设计
作者姓名: 王林林
作品名称: 造型声觉
参赛院校: 上海工艺美术职业学院
指导老师:

2018年7月

荣誉证书

王林林老师（上海工艺美术职业学院）：

在第八届全国高校数字艺术设计大赛中，指导学生获得

三等奖 ·项

成绩斐然，荣获优秀指导教师奖，特发此证，以资鼓励！

大赛官网：www.ncda.org.cn

证书编号：RYNCDA202010001528

RY 00A0003430

All Sound Label

Yumenguan Museum
19 July 2018

声音标题：DUNSR0016MS
声音采集者：王林林
声音描述：导游介绍敦煌
地点：玉门关博物馆
日期：2018.7.19
时间：下午
天气：室内
声音标签：玉门关博物馆
声音采集仪器：ZOOM H2n
关键词：导游介绍声音

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Image Yumenguan Museum

Title：DUNSR0016MS
Sound collector：Linlin Wang
Sound description：Tour guide introduces Dunhuang
Location：Yumenguan Museum
Date:19.7.2018
Time：Afternoon
The weather：Indoor
Sound tag：Yumenguan Museum
Sound collection instrument：ZOOM H2n
Key words：Tour guide introduces sound

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
● Oral voice

No.15

Yumenguan Museum
19 July 2018

声音标题：DUNSR0022MS
声音采集者：王林林
声音描述：导游讲敦煌壁画
地点：玉门关博物馆
日期：2018.7.19
时间：下午
天气：室内
声音标签：玉门关博物馆
声音采集仪器：ZOOM H2n
关键词：导游介绍声音

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Image Yumenguan Museum

Title：DUNSR0022MS
Sound collector：Linlin Wang
Sound description：Guided tour about Dunhuang frescoes
Location：Yumenguan Museum
Date:19.7.2018
Time：Afternoon
The weather：Indoor
Sound tag：Yumenguan Museum
Sound collection instrument：ZOOM H2n
Key words：Tour guide introduces sound

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
● Oral voice

No.16

Yumenguan Museum
19 July 2018

声音标题：DUNSR0026XY
声音采集者：王林林
声音描述：导游讲王道士的故事
地点：玉门关博物馆
日期：2018.7.19
时间：下午
天气：室内
声音标签：玉门关博物馆
声音采集仪器：ZOOM H2n
关键词：导游介绍声音

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：DUNSR0026XY
Sound collector：Linlin Wang
Sound description：Tour guide tells story of Wangdaoshi
Location：Yumenguan Museum
Date:19.7.2018
Time：Afternoon
The weather：Indoor
Sound tag：Yumenguan Museum
Sound collection instrument：ZOOM H2n
Key words：Tour guide introduces sound

Image Yumenguan Museum

Sound Type
Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
● Oral voice

No.17

483

Xiaofangpan City
Ruins
19 July 2018

声音标题：FANGSR001MS
声音采集者：王林林
声音描述：沙漠在古城的废墟中蚀刻
地点：小方盘城遗址
日期：2018.7.19
时间：下午
天气：阴天
声音标签：小方盘城遗址
声音采集仪器：ZOOM H2n
关键词：沙漠的声音

声音类型

● 自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：FANGSR001MS
Sound collector：Linlin Wang
Sound description：Desert etched in ruins of ancient city
Location：Xiaofangpan City Ruins
Date:19.7.2018
Time：Afternoon
The weather：cloudy day
Sound tag：Xiaofangpan City Ruins
Sound collection instrument：ZOOM H2n
Key words：Desert sound

Image Xiaofangpancheng Ruins

Sound Type ● Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.18

484

Xiaofangpan City Ruins
19 July 2018

声音标题：FANGSR002MS
声音采集者：王林林
声音描述：参观者声音
地点：四方城遗址
日期：2018.7.19
时间：下午
天气：太阳直射很高
声音标签：小方盘城遗址
声音采集仪器：ZOOM H2n
关键词：参观者声音

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：FANGSR002MS
Sound collector：Linlin Wang
Sound description：Visitor voice
Location：Sifang City Ruins
Date:19.7.2018
Time：Afternoon
The weather：High direct sunlight
Sound tag：Xiaofangpan City Ruins
Sound collection instrument：ZOOM H2n
Key words：Visitor voice

Image Xiaofangpancheng Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　● Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.19

485

Xiaofangpan City Ruins
19 July 2018

声音标题：FANGSR0013MS
声音采集者：王林林
声音描述：游客声
地点：四方城前方绿洲
日期：2018.7.19
时间：下午
天气：阴天
声音标签：小方盘城遗址
声音采集仪器：ZOOM H2n
关键词：游客声

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：FANGSR0013MS
Sound collector：Linlin Wang
Sound description：Tourists
Location：Oasis in front of the Sifang city
Date:19.7.2018
Time：Afternoon
The weather：cloudy day
Sound tag：Xiaofangpan City Ruins
Sound collection instrument：ZOOM H2n
Key words：Tourists

Image Xiaofangpancheng Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　● Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.21

486

Xiaofangpan City Ruins
19 July 2018

声音标题：FANGSR0014MS
声音采集者：王林林
声音描述：参观者讲历史
地点：小方盘城遗址
日期：2018.7.19
时间：下午
天气：太阳直射很高
声音标签：小方盘城遗址
声音采集仪器：ZOOM H2n
关键词：参观者声音

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
● 历史的声音
口述声音

Title：FANGSR0014MS
Sound collector：Linlin Wang
Sound description：Visitors tell history
Location：Xiaofangpan City Ruins
Date:19.7.2018
Time：Afternoon
The weather：High direct sunlight
Sound tag：Xiaofangpan City Ruins
Sound collection instrument：ZOOM H2n
Key words：Visitor voice

Image Xiaofangpancheng Ruins

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
● Historical voice
Oral voice

No.22

Lanzhou
18 July 2018

声音标题：LANSR0052MS
声音采集者：王林林
声音描述：黄河边水声风声
地点：黄河边
日期：2018.7.18
时间：下午
天气：多云
声音标签：兰州
声音采集仪器：ZOOM H2n
关键词：水声风声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：LANSR0052MS
Sound collector：Linlin Wang
Sound description：Water sound wind sound
Location：By the Yellow River
Date:18.7.2018
Time：Afternoon
The weather：Cloudy
Sound tag：Lanzhou
Sound collection instrument：ZOOM H2n
Key words：Water

Image By the Yellow River

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.29

Lanzhou
18 July 2018

声音标题：LANSR0053MS
声音采集者：王林林
声音描述：纳凉者自弹自唱民俗小曲
地点：黄河边
日期：2018.7.18
时间：下午
天气：多云
声音标签：兰州
声音采集仪器：ZOOM H2n
关键词：民俗小曲

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
●特有文化声音
声音符号
历史的声音
口述声音

Title：LANSR0053MS
Sound collector：Linlin Wang
Sound description：The cool ones play and sing folk songs
Location：By the Yellow River
Date:18.7.2018
Time：Afternoon
The weather：Cloudy
Sound tag：Lanzhou
Sound collection instrument：ZOOM H2n
Key words：Folklore

Image By the Yellow River

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
●Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.30

Liangzi Lake
29 June 2018

声音标题：LIANGSR006MS
声音采集者：王林林
声音描述：虫草鸣声
地点：荷花池
日期：2018.6.29
时间：傍晚
天气：晴天
声音标签：梁子湖
声音采集仪器：ZOOM H2n
关键词：虫草鸣声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：LIANGSR006MS
Sound collector：Linlin Wang
Sound description：Cordyceps
Location：Lotus Pond
Date:29.7.2018
Time：Evening
The weather：Sunny Day
Sound tag：Liangzi Lake
Sound collection instrument：ZOOM H2n
Key words：Cordyceps

Image Liangzi Lake

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
●Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.31

Liangzi Lake
29 June 2018

声音标题：LIANGSR007MS
声音采集者：王林林
声音描述：夏日蝉鸣
地点：荷花池
日期：2018.6.29
时间：傍晚
天气：下午
声音标签：梁子湖
声音采集仪器：ZOOM H2n
关键词：蝉

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：LIANGSR007MS
Sound collector：Linlin Wang
Sound description：Summer cicadas
Location：Lotus Pond
Date:29.6.2018
Time：Afternoon
The weather：Sunny Day
Sound tag：Liangzi Lake
Sound collection instrument：ZOOM H2n
Key words：Cicadas

Image Liangzi Lake

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
●Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.32

491

Liangzi Lake
29 June 2018

声音标题：LIANGSR0011MS
声音采集者：王林林
声音描述：夏日的虫和鸟鸣特点
地点：荷花池
日期：2018.6.29
时间：傍晚
天气：下午
声音标签：梁子湖
声音采集仪器：ZOOM H2n
关键词：夏日

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：LIANGSR0011MS
Sound collector：Linlin Wang
Sound description：Summer bird song characteristics
Location：Lotus Pond
Date:29.6.2018
Time：Afternoon
The weather：Sunny Day
Sound tag：Liangzi Lake
Sound collection instrument：ZOOM H2n
Key words：Summer

Image Liangzi Lake

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
●Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.33

492

Longmen Grottoes in
Luoyang, Henan
Province
13 July 2018

声音标题：LUOSR0027XY
声音采集者：王林林
声音描述：雨后石窟里虫鸣声震耳
地点：龙门石窟
日期：2018.7.13
时间：下午
天气：暴雨
声音标签：洛阳龙门石窟
声音采集仪器：ZOOM H2n
关键词：虫鸣

声音类型

● 自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Longmen Grottoes

Title：LUOSR0027XY
Sound collector：Linlin Wang
Sound description：Insects tremble in the grotto after the rain
Location：Longmen Grottoes
Date:13.7.2018
Time：Afternoon
The weather：rainstorm
Sound tag：Luoyang Longmen Grottoes
Sound collection instrument：ZOOM H2n
Key words：Worm

Sound Type ● Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.35

Longmen Grottoes in
Luoyang, Henan
Province
13 July 2018

声音标题：LUOSR0031MS
声音采集者：王林林
声音描述：游客声
地点：第一尊佛
日期：2018.7.13
时间：下午
天气：阴天
声音标签：洛阳龙门石窟
声音采集仪器：ZOOM H2n
关键词：游客声

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Longmen Grottoes

Title：LUOSR0031MS
Sound collector：Linlin Wang
Sound description：Tourists
Location：First Buddha
Date:13.7.2018
Time：Afternoon
The weather：Cloudy day
Sound tag：Luoyang Longmen Grottoes
Sound collection instrument：ZOOM H2n
Key words：Tourists

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.37

Longmen Grottoes in Luoyang, Henan Province 13 July 2018

声音标题：LUOSR0033MS
声音采集者：王林林
声音描述：导游介绍佛洞
地点：龙门石窟
日期：2018.7.13
时间：下午
天气：晴天
声音标签：洛阳龙门石窟
声音采集仪器：ZOOM H2n
关键词：导游介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Image Longmen Grottoes

Title：LUOSR0033MS
Sound collector：Linlin Wang
Sound description：Tour guide introduces Buddha Cave
Location：Longmen Grottoes
Date:13.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Luoyang Longmen Grottoes
Sound collection instrument：ZOOM H2n
Key words：Tour guide introduction

Sound Type
Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
● Oral voice

No.39

495

Dunhuang Mogao Grottoes 21 July 2018

声音标题：MOSR009MS
声音采集者：王林林
声音描述：鸣沙山滑翔机声音
地点：鸣沙山
日期：2018.7.21
时间：下午
天气：晴天
声音标签：敦煌莫高窟
声音采集仪器：ZOOM H2n
关键词：滑翔机

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Crescent Lake

Title：MOSR009MS
Sound collector：Linlin Wang
Sound description：Mingsha Mountain Glider Sound
Location：Mingsha Mountain
Date:21.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Dunhuang Mogao Grottoes
Sound collection instrument：ZOOM H2n
Key words：Glider

Sound Type
Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.47

496

Dunhuang
Mogao Grottoes
21 July 2018

声音标题：MOSR0014MS
声音采集者：王林林
声音描述：鸣沙山滑翔机声音
地点：鸣沙山
日期：2018.7.21
时间：下午
天气：晴天
声音标签：敦煌莫高窟
声音采集仪器：ZOOM H2n
关键词：滑翔机

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Mingsha Mountain

Title：MOSR0014MS
Sound collector：Linlin Wang
Sound description：Mingsha Mountain Glider Sound
Location：Mingsha Mountain
Date:21.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Dunhuang Mogao Grottoes
Sound collection instrument：ZOOM H2n
Key words：Glider

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.49

Sun Moon Mountain
17 July 2018

声音标题：QINGSR0016MS
声音采集者：王林林
声音描述：强烈风声
地点：日月山
日期：2018.7.17
时间：下午
天气：晴天
声音标签：日月山青海湖
声音采集仪器：ZOOM H2n
关键词：风声

声音类型

● 自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Sun Moon Mountain

Title：QINGSR0016MS
Sound collector：Linlin Wang
Sound description：Strong wind
Location：Sun Moon Mountain
Date:17.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Sun Moon Mountain
Sound collection instrument：ZOOM H2n
Key words：Wind

Sound Type ● Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.50

Qinghai Lake
17 July 2018

声音标题：QINGSSR0017MS
声音采集者：王林林
声音描述：鸟叫
地点：青海湖
日期：2018.7.17
时间：下午
天气：阴天，雨欲来
声音标签：青海湖
声音采集仪器：ZOOM H2n
关键词：鸟叫

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Qinghai Lake

Title：QINGSSR0017MS
Sound collector：Linlin Wang
Sound description：Bird call
Location：Qinghai Lake
Date:17.7.2018
Time：Afternoon
The weather：Cloudy, rain is coming
Sound tag：Qinghai Lake
Sound collection instrument：ZOOM H2n
Key words：Bird call

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.51

Qinghai Lake
17 July 2018

声音标题：QINGSSR0018XY
声音采集者：王林林
声音描述：湖边水声
地点：青海湖
日期：2018.7.17
时间：下午
天气：阴天，雨欲来
声音标签：日月山青海湖
声音采集仪器：ZOOM H2n
关键词：水声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Qinghai Lake

Title：QINGSSR0018XY
Sound collector：Linlin Wang
Sound description：Sound of lake water
Location：Qinghai Lake
Date:17.7.2018
Time：Afternoon
The weather：Cloudy, rain is coming
Sound tag：Qinghai Lake
Sound collection instrument：ZOOM H2n
Key words：Water sound

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.52

Qinghai Lake
17 July 2018

声音标题：QINGSSR0019MS
声音采集者：王林林
声音描述：青海湖边鸟鸣
地点：青海湖
日期：2018.7.17
时间：下午
天气：阴天，雨欲来
声音标签：日月山青海湖
声音采集仪器：ZOOM H2n
关键词：鸟鸣

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Qinghai Lake

Title：QINGSSR0019MS
Sound collector：Linlin Wang
Sound description：Qinghai Lake Bird Song
Location：Qinghai Lake
Date:17.7.2018
Time：Afternoon
The weather：Cloudy, rain is coming
Sound tag：Qinghai Lake
Sound collection instrument：ZOOM H2n
Key words：Birdsong

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.53

Qinghai Lake
17 July 2018

声音标题：QINGSSR0020MS
声音采集者：王林林
声音描述：湖边水声
地点：青海湖
日期：2018.7.17
时间：下午
天气：阴天，雨欲来
声音标签：日月山青海湖
声音采集仪器：ZOOM H2n
关键词：水声

声音类型

● 自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Qinghai Lake

Title：QINGSSR0020MS
Sound collector：Linlin Wang
Sound description：Sound of lake water
Location：Qinghai Lake
Date:17.7.2018
Time：Afternoon
The weather：Cloudy, rain is coming
Sound tag：Sun Moon Mountain Qinghai Lake
Sound collection instrument：ZOOM H2n
Key words：Water sound

Sound Type ● Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.54

Qinghai Lake
17 July 2018

声音标题：QINGSSR0021MS
声音采集者：王林林
声音描述：青海湖广域环境下摩托声
地点：青海湖
日期：2018.7.17
时间：下午
天气：阴天，雨欲来
声音标签：青海湖
声音采集仪器：ZOOM H2n
关键词：摩托

声音类型

自然的声音环境
文化的声音环境
● 工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：QINGSSR0021MS
Sound collector：Linlin Wang
Sound description：Qinghai Lake Motorcycle Sound
Location：Qinghai Lake
Date:17.7.2018
Time：Afternoon
The weather：Cloudy, rain is coming
Sound tag：Qinghai Lake
Sound collection instrument：ZOOM H2n
Key words：Motorcycle

Image Qinghai Lake

Sound Type   Natural sound environment
              Cultural sound environment
            ● Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
              Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.55

Sun Moon Mountain
17 July 2018

声音标题：RIYUESR0013MS
声音采集者：王林林
声音描述：号角声，藏民说话
地点：日月山
日期：2018.7.17
时间：下午
天气：晴天
声音标签：日月山青海湖
声音采集仪器：ZOOM H2n
关键词：号角声，藏民说话

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
● 声音符号
历史的声音
口述声音

Title：RIYUESR0013MSvvvv
Sound collector：Linlin Wang
Sound description：Trumpets, Tibetans talking, Yak's bells
Location：Sun Moon Mountain
Date:17.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Sun Moon Mountain
Sound collection instrument：ZOOM H2n
Key words：Trumpets, Tibetans talking, Yak's bells

Image Sun Moon Mountain

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
              Unique cultural voice
            ● Sound symbol
              Historical voice
              Oral voice

No.57

Sun Moon Mountain
17 July 2018

声音标题：RIYUESR0014MS
声音采集者：王林林
声音描述：公路上的车声
地点：日月山
日期：2018.7.17
时间：下午
天气：晴天
声音标签：日月山
声音采集仪器：ZOOM H2n
关键词：公路

声音类型

自然的声音环境
文化的声音环境
● 工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：RIYUESR0014MS
Sound collector：Linlin Wang
Sound description：Car sounds on the highway
Location：Sun Moon Mountain
Date:17.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Sun Moon Mountain
Sound collection instrument：ZOOM H2n
Key words：Highway

Image Sun Moon Mountain

Sound Type　Natural sound environment
Cultural sound environment
● Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.58

505

Sun Moon Mountain
17 July 2018

声音标题：RIYUESR0015MS
声音采集者：王林林
声音描述：风声与草的声音混杂
地点：日月山
日期：2018.7.17
时间：下午
天气：晴天
声音标签：日月山
声音采集仪器：ZOOM H2n
关键词：风声与草

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：RIYUESR0015MS
Sound collector：Linlin Wang
Sound description：The sound of wind and grass is mixed
Location：Sun Moon Mountain
Date:17.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Sun Moon Mountain
Sound collection instrument：ZOOM H2n
Key words：Wind and grass

Image Sun Moon Mountain

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.59

506

Urumqi

声音标题：Aeroport de Sanya
声音采集者：Josep Cerda
声音描述：三亚机场
地点：三亚
日期：2019
天气：室内
声音标签：乌鲁木齐
关键词：旅客声音

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Title：Aeroport de Sanya
Sound collector：Josep Cerda
Sound description：Sanya Airport
Location：Sanya
Date:2019
Sound tag：Urumqi
Key words：Passenger voice

Urumqi

声音标题：Camps de Xingjiang
声音采集者：Josep Cerda
声音描述：鸟鸣
地点：新疆
日期：2019
天气：晴天
声音标签：乌鲁木齐
关键词：鸟鸣

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Title：Camps de Xingjiang
Sound collector：Josep Cerda
Sound description：Birdsong
Location：Xingjiang
Date:2019
Weather:Sunny
Sound tag：Urumqi
Key words：Birdsong

Urumqi

声音标题: Dos Carricoches
声音采集者: Josep Cerda
声音描述: 马车的声音
地点: 新疆
日期: 2019
天气: 晴天
声音标签: 乌鲁木齐
关键词: 马车

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type   Natural sound environment
  Cultural sound environment
  Industrial sound
  Sound event
  Festive sound
  City sound
  Country sound
● Ecological environment sound
  Unique cultural voice
  Sound symbol
  Historical voice
  Oral voice

Title: Dos Carricoches
Sound collector: Josep Cerda
Sound description: Carriage sound
Location: Xingjiang
Date:2019
Weather:Sunny
Sound tag: Urumqi
Key words: Carriage

Urumqi

声音标题: escombrant i remor 2
声音采集者: Josep Cerda
声音描述:
地点: 新疆
日期: 2019
天气: 晴天
声音标签: 乌鲁木齐
关键词:

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type   Natural sound environment
  Cultural sound environment
  Industrial sound
  Sound event
  Festive sound
  City sound
  Country sound
● Ecological environment sound
  Unique cultural voice
  Sound symbol
  Historical voice
  Oral voice

Title: escombrant i remor 2
Sound collector: Josep Cerda
Sound description:
Location: Xingjiang
Date:2019
Weather:Sunny
Sound tag: Urumqi
Key words:

声音标题： escombrant i remor 3
声音采集者： Josep Cerda
声音描述：
地点： 新疆
日期： 2019
天气： 晴天
声音标签： 乌鲁木齐
关键词：

Urumqi

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type Natural sound environment
            Cultural sound environment
            Industrial sound
            Sound event
            Festive sound
            City sound
            Country sound
          ● Ecological environment sound
            Unique cultural voice
            Sound symbol
            Historical voice
            Oral voice

Title： escombrant i remor 3
Sound collector： Josep Cerda
Sound description：
Location： Xingjiang
Date:2019
Weather:Sunny
Sound tag： Urumqi
Key words：

声音标题： escombrant i remor 4
声音采集者： Josep Cerda
声音描述：
地点： 新疆
日期： 2019
天气： 晴天
声音标签： 乌鲁木齐
关键词：

Urumqi

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type Natural sound environment
            Cultural sound environment
            Industrial sound
            Sound event
            Festive sound
            City sound
            Country sound
          ● Ecological environment sound
            Unique cultural voice
            Sound symbol
            Historical voice
            Oral voice

Title： escombrant i remor 4
Sound collector： Josep Cerda
Sound description：
Location： Xingjiang
Date:2019
Weather:Sunny
Sound tag： Urumqi
Key words：

Urumqi

声音标题：escombrant i soroll
声音采集者：Josep Cerda
声音描述：
地点：新疆
日期：2019
天气：晴天
声音标签：乌鲁木齐
关键词：

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
             Sound event
             Festive sound
             City sound
             Country sound
           ●Ecological environment sound
             Unique cultural voice
             Sound symbol
             Historical voice
             Oral voice

Title：escombrant i soroll
Sound collector：Josep Cerda
Sound description：
Location：Xingjiang
Date:2019
Weather:Sunny
Sound tag：Urumqi
Key words：

Urumqi

声音标题：FABRICA DE PAPER
声音采集者：Josep Cerda
声音描述：水声
地点：新疆
日期：2019
天气：晴天
声音标签：乌鲁木齐
关键词：水

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
             Sound event
             Festive sound
             City sound
             Country sound
           ●Ecological environment sound
             Unique cultural voice
             Sound symbol
             Historical voice
             Oral voice

Title：FABRICA DE PAPER
Sound collector：Josep Cerda
Sound description：Water sound
Location：Xingjiang
Date:2019
Weather:Sunny
Sound tag：Urumqi
Key words：Water

Urumqi

声音标题：Gall de Xingjiang sons i silen
声音采集者：Josep Cerda
声音描述：节目声
地点：新疆
日期：2019
天气：晴天
声音标签：乌鲁木齐
关键词：节目声

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Title：Gall de Xingjiang sons i silen
Sound collector：Josep Cerda
Sound description：Program sound
Location：Xingjiang
Date:2019
Weather:Sunny
Sound tag：Urumqi
Key words：Program sound

515

Urumqi

声音标题：Juerga Nocturna a Xingjiang
声音采集者：Josep Cerda
声音描述：游客
地点：新疆
日期：2019
天气：晴天
声音标签：乌鲁木齐
关键词：游客

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Urumqi

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Title：Juerga Nocturna a Xingjiang
Sound collector：Josep Cerda
Sound description：Tourists
Location：Xingjiang
Date:2019
Weather:Sunny
Sound tag：Urumqi
Key words：Tourists

516

Urumqi

声音标题：Mercat Nocturn de Xingjiang　声音类型
声音采集者：Josep Cerda
声音描述：游客　　　　　　　　自然的声音环境
地点：新疆　　　　　　　　　　文化的声音环境
日期：2019　　　　　　　　　　工业的声音
天气：晴天　　　　　　　　● 声音事件
声音标签：乌鲁木齐　　　　　　节日声音
关键词：游客　　　　　　　　　城市的声音
　　　　　　　　　　　　　　　乡下的声音
　　　　　　　　　　　　　　　生态环境声音
　　　　　　　　　　　　　　　特有文化声音
　　　　　　　　　　　　　　　声音符号
　　　　　　　　　　　　　　　历史的声音
　　　　　　　　　　　　　　　口述声音

Image Urumqi

Sound Type　Natural sound environment
　　　　　　　Cultural sound environment
　　　　　　　Industrial sound
　　　　　● Sound event
　　　　　　　Festive sound
　　　　　　　City sound
　　　　　　　Country sound
　　　　　　　Ecological environment sound
　　　　　　　Unique cultural voice
　　　　　　　Sound symbol
　　　　　　　Historical voice
　　　　　　　Oral voice

Title：Mercat Nocturn de Xingjiang
Sound collector：Josep Cerda
Sound description：Tourists
Location：Xingjiang
Date:2019
Weather:Sunny
Sound tag：Urumqi
Key words：Tourists

517

Urumqi

声音标题：Mercat Nocturn de Xingjiang　声音类型
声音采集者：Josep Cerda
声音描述：维吾尔族语言　　　　　自然的声音环境
地点：新疆　　　　　　　　　　文化的声音环境
日期：2019　　　　　　　　　　工业的声音
天气：晴天　　　　　　　　　　声音事件
声音标签：乌鲁木齐　　　　　　节日声音
关键词：维吾尔族语言　　　　　城市的声音
　　　　　　　　　　　　　　　乡下的声音
　　　　　　　　　　　　　　　生态环境声音
　　　　　　　　　　　　● 特有文化声音
　　　　　　　　　　　　　　　声音符号
　　　　　　　　　　　　　　　历史的声音
　　　　　　　　　　　　　　　口述声音

Image Urumqi

Sound Type　Natural sound environment
　　　　　　　Cultural sound environment
　　　　　　　Industrial sound
　　　　　　　Sound event
　　　　　　　Festive sound
　　　　　　　City sound
　　　　　　　Country sound
　　　　　　　Ecological environment sound
　　　　　● Unique cultural voice
　　　　　　　Sound symbol
　　　　　　　Historical voice
　　　　　　　Oral voice

Title：Mercat Nocturn de Xingjiang
Sound collector：Josep Cerda
Sound description：Uyghur language
Location：Xingjiang
Date:2019
Weather:Sunny
Sound tag：Urumqi
Key words：Uyghur language

518

Taer temple
16 July 2018

声音标题：TASR001XY
声音采集者：王林林
声音描述：909路公交车报站
地点：塔尔寺
日期：2018.7.13
时间：下午
天气：晴天
声音标签：青海塔尔寺
声音采集仪器：ZOOM H2n
关键词：公交

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Bus 909

Title：TASR001XY
Sound collector：Linlin Wang
Sound description：Bus station 909
Location：Taer Temple
Date:13.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Taer Temple
Sound collection instrument：ZOOM H2n
Key words：Bus

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
           ● Sound event
             Festive sound
             City sound
             Country sound
             Ecological environment sound
             Unique cultural voice
             Sound symbol
             Historical voice
             Oral voice

No.60

Taer temple
16 July 2018

声音标题：TASR002XY
声音采集者：王林林
声音描述：响铃声
地点：塔尔寺
日期：2018.7.16
时间：下午
天气：晴天
声音标签：青海塔尔寺
声音采集仪器：ZOOM H2n
关键词：铃声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Image Taer Temple

Title：TASR002XY
Sound collector：Linlin Wang
Sound description：Ringing
Location：Taer Temple
Date:16.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Taer Temple
Sound collection instrument：ZOOM H2n
Key words：Ringing

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
             Sound event
             Festive sound
             City sound
             Country sound
             Ecological environment sound
           ● Unique cultural voice
             Sound symbol
             Historical voice
             Oral voice

No.61

Taer temple
16 July 2018

声音标题：TASR004XY
声音采集者：王林林
声音描述：室内人群参观的声音
地点：塔尔寺
日期：2018.7.16
时间：下午
天气：晴天
声音标签：青海塔尔寺
声音采集仪器：ZOOM H2n
关键词：游客

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Taer Temple

Title：TASR004XY
Sound collector：Linlin Wang
Sound description：Sound of indoor crowd visit
Location：Taer Temple
Date:16.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Taer Temple
Sound collection instrument：ZOOM H2n
Key words：Tourists

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.62

Taer temple
16 July 2018

声音标题：TASR007MS
声音采集者：王林林
声音描述：转经筒现场声音采集
地点：塔尔寺
日期：2018.7.16
时间：下午
天气：晴天
声音标签：青海塔尔寺
声音采集仪器：ZOOM H2n
关键词：转经筒

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
● 声音符号
历史的声音
口述声音

Image Prayer wheel

Title：TASR007MS
Sound collector：Linlin Wang
Sound description：Warp cone live sound collection
Location：Taer Temple
Date:16.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Taer Temple
Sound collection instrument：ZOOM H2n
Key words：Prayer wheel

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
● Sound symbol
Historical voice
Oral voice

No.63

Taer temple
16 July 2018

声音标题：TASR009MS
声音采集者：王林林
声音描述：塔尔寺壁画介绍
地点：塔尔寺
日期：2018.7.16
时间：下午
天气：晴天
声音标签：青海塔尔寺
声音采集仪器：ZOOM H2n
关键词：介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Image Mural

Title：TASR009MS
Sound collector：Linlin Wang
Sound description：Mural introduction
Location：Taer Temple
Date:16.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Taer Temple
Sound collection instrument：ZOOM H2n
Key words：Introduction

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
● Oral voice

No.64

Taer temple
16 July 2018

声音标题：TASR0010XY
声音采集者：王林林
声音描述：塔尔寺财神殿介绍
地点：财神殿
日期：2018.7.16
时间：下午
天气：晴天
声音标签：青海塔尔寺
声音采集仪器：ZOOM H2n
关键词：介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Image Monk

Title：TASR0010XY
Sound collector：Linlin Wang
Sound description：Temple of Wealth
Location：Temple of fortune
Date:16.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Taer Temple
Sound collection instrument：ZOOM H2n
Key words：Introduction

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
● Oral voice

No.65

Taer Temple
16 July 2018

声音标题：TASR0012MS
声音采集者：王林林
声音描述：寺内鸟鸣声
地点：塔尔寺
日期：2018.7.16
时间：下午
天气：晴天
声音标签：青海塔尔寺
声音采集仪器：ZOOM H2n
关键词：介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：TASR0012MS
Sound collector：Linlin Wang
Sound description：Bird song in temple
Location：Taer Temple
Date:16.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Taer Temple
Sound collection instrument：ZOOM H2n
Key words：Bird song

Image Monk

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
             Sound event
             Festive sound
             City sound
             Country sound
             ● Ecological environment sound
             Unique cultural voice
             Sound symbol
             Historical voice
             Oral voice

No.66

525

XI'AN
17 January 2017

声音标题：XIANSR002
声音采集者：王林林
声音描述：化觉寺化雪
地点：西安
日期：2017.1.17
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
● 乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR002
Sound collector：Linlin Wang
Sound description：melt snow in the temple
Location：XI'AN
Date:17.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
             Sound event
             Festive sound
             City sound
             ● Country sound
             Ecological environment sound
             Unique cultural voice
             Sound symbol
             Historical voice
             Oral voice

No.12

526

XI'AN
18 January 2017

声音标题：XIANSR009
声音采集者：王林林
声音描述：大雁塔北广场喷泉
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR009
Sound collector：Linlin Wang
Sound description：the fountain in the north
square in DAYAN Tower
Location：XI'AN
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.19

527

XI'AN
18 January 2017

声音标题：XIANSR010
声音采集者：王林林
声音描述：大雁塔北广场喷泉
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR010
Sound collector：Linlin Wang
Sound description：the fountain in the north
square in DAYAN Tower
Location：XI'AN
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.20

528

XI'AN
18 January 2017

声音标题：XIANSR011
声音采集者：王林林
声音描述：大雁塔公园
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR011
Sound collector：Linlin Wang
Sound description：the park near the DAYAN Tower
Location：XI'AN
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.21

XI'AN
18 January 2017

声音标题：XIANSR012
声音采集者：王林林
声音描述：大雁塔里面登楼
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
● 文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR012
Sound collector：Linlin Wang
Sound description：climb the DAYAN Tower
Location：XI'AN
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
● Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.22

XI'AN
18 January 2017

声音标题：XIANSR014
声音采集者：王林林
声音描述：塔外鸟声
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR014
Sound collector：Linlin Wang
Sound description：birds singing outside the tower
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.24

XI'AN
18 January 2017

声音标题：XIANSR015
声音采集者：王林林
声音描述：塔外群房化雪
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR015
Sound collector：Linlin Wang
Sound description：melting snow of huge building
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.25

XI'AN
18 January 2017

声音标题：XIANSR019
声音采集者：王林林
声音描述：小雁塔
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR019
Sound collector：Linlin Wang
Sound description：XIAOYAN Tower
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.29

XI'AN
18 January 2017

声音标题：XIANSR020
声音采集者：王林林
声音描述：小雁塔老伯化雪
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR020
Sound collector：Linlin Wang
Sound description：an old man melt the snow in XIAOYAN Tower
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.30

XI'AN
18 January 2017

声音标题：XIANSR021
声音采集者：王林林
声音描述：小雁塔钟声
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR021
Sound collector：Linlin Wang
Sound description： the pell in XIAOYAN Tower
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.31

XI'AN
17 January 2017

声音标题：XIANSR031
声音采集者：王林林
声音描述：大皮院清真寺
地点：西安
日期：2017.1.17
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR031
Sound collector：Linlin Wang
Sound description：QINGZHEN Temple DAPI Courtyard
Date:17.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
● Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.41

XI'AN
17 January 2017

声音标题：XIANSR033
声音采集者：王林林
声音描述：化觉寺化雪
地点：西安
日期：2017.1.17
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR033
Sound collector：Linlin Wang
Sound description：melt snow in HUAJUE
Temple
Date:17.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.43

537

XI'AN
18 January 2017

声音标题：XIANSR034
声音采集者：王林林
声音描述：大雁塔北广场喷泉
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR034
Sound collector：Linlin Wang
Sound description：north square fountain in
DAYAN Tower
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.44

538

XI'AN
18 January 2017

声音标题：XIANSR036
声音采集者：王林林
声音描述：大雁塔北广场
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR036
Sound collector：Linlin Wang
Sound description：north square in DAYAN Tower
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.46

XI'AN
18 January 2017

声音标题：XIANSR039
声音采集者：王林林
声音描述：大雁塔塔外鸟声
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR039
Sound collector：Linlin Wang
Sound description：brids out the DAYAN TOWER
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
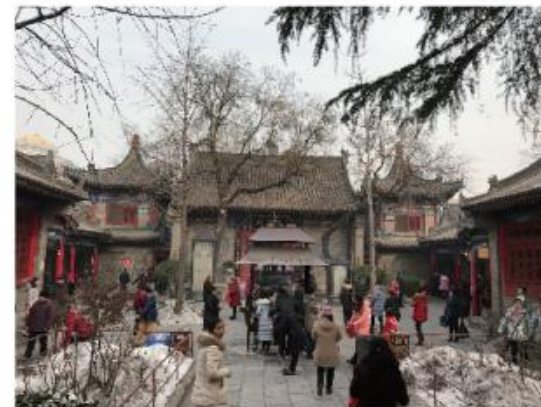Sound symbol
Historical voice
Oral voice

No.49

XI'AN
18 January 2017

声音标题：XIANSR041
声音采集者：王林林
声音描述：大雁塔塔外群房化雪
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR041
Sound collector：Linlin Wang
Sound description：snow been melted out the DAYAN TOWER
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.51

541

XI'AN
18 January 2017

声音标题：XIANSR042
声音采集者：王林林
声音描述：小雁塔和西安博物馆
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR042
Sound collector：Linlin Wang
Sound description：XIAOYAN Tower and XI'AN Museum
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.52

542

XI'AN
18 January 2017

声音标题：XIANSR056
声音采集者：王林林
声音描述：夜景钟楼广场
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR056
Sound collector：Linlin Wang
Sound description：ZHONGLOU square in night
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.66

XI'AN
18 January 2017

声音标题：XIANSR059
声音采集者：王林林
声音描述：钟楼地下通道
地点：西安
日期：2017.1.18
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANSR059
Sound collector：Linlin Wang
Sound description：ZHONGLOU underroad
Date:18.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.69

XI'AN
16 January 2017

声音标题：XIANTSR002
声音采集者：王林林
声音描述：火车内的声音
地点：西安
日期：2017.1.16
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
● 文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANTSR002
Sound collector：Linlin Wang
Sound description：sound in train
Location：XI'AN
Date:16.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
● Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
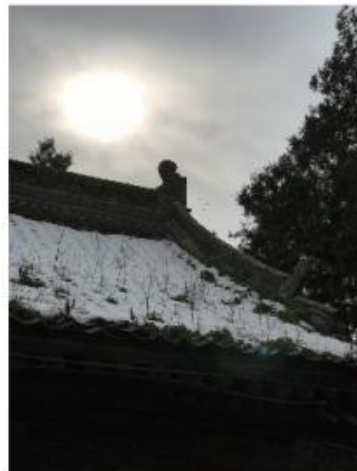Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.1

XI'AN
16 January 2017

声音标题：XIANTSR003
声音采集者：王林林
声音描述：火车内的声音
地点：西安
日期：2017.1.16
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
● 文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANTSR003
Sound collector：Linlin Wang
Sound description：sound in train
Location：XI'AN
Date:16.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type   Natural sound environment
● Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.2

XI'AN
16 January 2017

声音标题：XIANTSR004
声音采集者：王林林
声音描述：火车内的声音
地点：西安
日期：2017.1.16
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
● 文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANTSR004
Sound collector：Linlin Wang
Sound description：sound in train
Location：XI'AN
Date:16.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
● Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.3

XI'AN
16 January 2017

声音标题：XIANTSR005
声音采集者：王林林
声音描述：火车内的声音
地点：西安
日期：2017.1.16
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词　：环境声

声音类型

自然的声音环境
● 文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANTSR005
Sound collector：Linlin Wang
Sound description：sound in train
Location：XI'AN
Date:16.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
● Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.4

XI'AN
16 January 2017

声音标题：XIANZLSR003
声音采集者：王林林
声音描述：晚上广场
地点：西安
日期：2017.1.16
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANZLSR003
Sound collector：Linlin Wang
Sound description：sound in square in night
Location：XI'AN
Date:16.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.9

549

XI'AN
16 January 2017

声音标题：XIANZLSR004
声音采集者：王林林
声音描述：马路边声音
地点：西安
日期：2017.1.16
时间：下午
天气：晴天
声音标签：西安
声音采集仪器：ZOOM H2n
关键词 ：环境声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
● 城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：XIANZLSR004
Sound collector：Linlin Wang
Sound description：sound near the road
Location：XI'AN
Date:16.01.2017
Time：afternoon
The weather：clear day
Sound tag：XI'AN
Sound collection instrument：ZOOM H2n
Key words：environment

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
● City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.10

550

Dunhuang Yadan
Geopark
19 July 2018

声音标题：YADANSR003MS
声音采集者：王林林
声音描述：风之音，有12级大风
地点：敦煌雅丹地质公园
日期：2018.7.19
时间：上午
天气：小雨转阴 大风
声音标签：敦煌
声音采集仪器：ZOOM H2n
关键词：风声

声音类型

● 自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Dunhuang Yadan
Geopark
19 July 2018

声音标题：YADANSR004MS
声音采集者：王林林
声音描述：游客声，大巴碾过沙子
地点：敦煌雅丹地质公园
日期：2018.7.19
时间：上午
天气：小雨转阴 大风
声音标签：敦煌
声音采集仪器：ZOOM H2n
关键词：游客声

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Yadan Geopark

Title：YADANSR003MS
Sound collector：Linlin Wang
Sound description：Voice of the wind, with a gale of 12
Location：Dunhuang Yadan Geoparks
Date:19.7.2018
Time：Morning
The weather：Light rain turns overcast and strong wind
Sound tag：Dunhuang
Sound collection instrument：ZOOM H2n
Key words：Wind

Image Yadan Geopark

Title：YADANSR004MS
Sound collector：Linlin Wang
Sound description：Tourists, buses run over the sand
Location：Dunhuang Yadan Geoparks
Date:19.7.2018
Time：Morning
The weather：Light rain turns overcast and strong wind
Sound tag：Dunhuang
Sound collection instrument：ZOOM H2n
Key words：Touristsvv

Sound Type ● Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.84

No.85

Dunhuang Yadan
Geopark
19 July 2018

声音标题：YADANSR005MS
声音采集者：王林林
声音描述：游客声
地点：敦煌雅丹地质公园
日期：2018.7.19
时间：上午
天气：小雨转阴 大风
声音标签：敦煌
声音采集仪器：ZOOM H2n
关键词：游客声

声音类型

自然的声音环境
文化的声音环境
工业的声音
●声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Yadan Geopark

Title：YADANSR005MS
Sound collector：Linlin Wang
Sound description：Tourists
Location：Dunhuang Yadan Geoparks
Date:19.7.2018
Time：Morning
The weather：Light rain turns overcast and strong wind
Sound tag：Dunhuang
Sound collection instrument：ZOOM H2n
Key words：Touristsvv

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
●Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.86

Dunhuang Yadan
Geopark
19 July 2018

声音标题：YADANSR006MS
声音采集者：王林林
声音描述：大风呼啸而过的声音
地点：敦煌雅丹地质公园
日期：2018.7.19
时间：上午
天气：由阴转晴
声音标签：敦煌
声音采集仪器：ZOOM H2n
关键词：风声

声音类型

●自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Yadan Geopark

Title：YADANSR006MS
Sound collector：Linlin Wang
Sound description：The sound of howling winds
Location：Dunhuang Yadan Geoparks
Date:19.7.2018
Time：Morning
The weather：From overcast to sunny
Sound tag：Dunhuang
Sound collection instrument：ZOOM H2n
Key words：Wind

Sound Type ●Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.87

Dunhuang Yadan
Geopark
19 July 2018

声音标题：YADANSR007
声音采集者：王林林
声音描述：导游介绍
地点：敦煌雅丹地质公园
日期：2018.7.19
时间：上午
天气：由阴转晴
声音标签：敦煌
声音采集仪器：ZOOM H2n
关键词：导游介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
●口述声音

Title：YADANSR007
Sound collector：Linlin Wang
Sound description：Tour guide introduction
Location：Dunhuang Yadan Geoparks
Date:19.7.2018
Time：Morning
The weather：From overcast to sunny
Sound tag：Dunhuang
Sound collection instrument：ZOOM H2n
Key words：Tour guide introduction

Image Yadan Geopark

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
●Oral voice

Dunhuang Yadan
Geopark
19 July 2018

声音标题：YADANSR008MS
声音采集者：王林林
声音描述：风声
地点：敦煌雅丹地质公园
日期：2018.7.19
时间：上午
天气：由阴转晴
声音标签：敦煌
声音采集仪器：ZOOM H2n
关键词：风声

声音类型

●自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：YADANSR008MS
Sound collector：Linlin Wang
Sound description：Wind
Location：Dunhuang Yadan Geoparks
Date:19.7.2018
Time：Morning
The weather：From overcast to sunny
Sound tag：Dunhuang
Sound collection instrument：ZOOM H2n
Key words：Wind

Image Yadan Geopark

Sound Type ●Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Dunhuang Yadan
Geopark
19 July 2018

声音标题：YADANSR009MS
声音采集者：王林林
声音描述：踩沙和风声
地点：敦煌雅丹地质公园
日期：2018.7.19
时间：上午
天气：由阴转晴
声音标签：敦煌
声音采集仪器：ZOOM H2n
关键词：风声

声音类型

● 自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Yadan Geopark

Title：YADANSR009MS
Sound collector：Linlin Wang
Sound description：Sounds of sand and wind
Location：Dunhuang Yadan Geoparks
Date:19.7.2018
Time：Morning
The weather：From overcast to sunny
Sound tag：Dunhuang
Sound collection instrument：ZOOM H2n
Key words：Wind

Sound Type ● Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Dunhuang Yadan
Geopark
19 July 2018

声音标题：YADANSR010MS
声音采集者：王林林
声音描述：游客声
地点：敦煌雅丹地质公园
日期：2018.7.19
时间：下午
天气：阴天
声音标签：敦煌雅丹地质公园
声音采集仪器：ZOOM H2n
关键词：游客声

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Xiaofangpancheng Ruins

Title：YADANSR010MS
Sound collector：Linlin Wang
Sound description：Tourists
Location：Dunhuang Yadan Geoparks
Date:19.7.2018
Time：Afternoon
The weather：cloudy day
Sound tag：Dunhuang Yadan Geoparks
Sound collection instrument：ZOOM H2n
Key words：Tourists

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Guazhou Ancient
City Ruins
19 July 2018

声音标题：YULINR003XY
声音采集者：王林林
声音描述：燕子声,环境音域广阔
地点：瓜州
日期：2018.7.19
时间：下午
天气：大风加日照强烈
声音标签：瓜州古城遗址
声音采集仪器：ZOOM H2n
关键词：燕子声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：YULINR003XY
Sound collector：Linlin Wang
Sound description：Swallow sound, wide range
Location：Guazhou
Date:19.7.2018
Time：Afternoon
The weather：Strong wind and strong sunshine
Sound tag：Guazhou Ancient City Ruins
Sound collection instrument：ZOOM H2n
Key words：Swallows

Image Guazhou Ancient City Ruins

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
            ● Ecological environment sound
              Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.92

Guazhou Ancient
City Ruins
19 July 2018

声音标题：YULINR004MS
声音采集者：王林林
声音描述：记录燕子
地点：瓜州
日期：2018.7.19
时间：下午
天气：大风加日照强烈
声音标签：瓜州古城遗址
声音采集仪器：ZOOM H2n
关键词：燕子声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：YULINR004MS
Sound collector：Linlin Wang
Sound description：Record swallow
Location：Guazhou
Date:19.7.2018
Time：Afternoon
The weather：Strong wind and strong sunshine
Sound tag：Guazhou Ancient City Ruins
Sound collection instrument：ZOOM H2n
Key words：Swallows

Image Guazhou Ancient City Ruins

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
            ● Ecological environment sound
              Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.93

Guazhou Ancient
City Ruins
19 July 2018

声音标题：YULINR005MS
声音采集者：王林林
声音描述：记录大雁和多种鸟鸣声
地点：瓜州
日期：2018.7.19
时间：下午
天气：大风加日照强烈
声音标签：瓜州古城遗址
声音采集仪器：ZOOM H2n
关键词：鸟叫

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：YULINR005MS
Sound collector：Linlin Wang
Sound description：Recording Geese and Various Bird Songs
Location：Guazhou
Date:19.7.2018
Time：Afternoon
The weather：Strong wind and strong sunshine
Sound tag：Guazhou Ancient City Ruins
Sound collection instrument：ZOOM H2n
Key words：Birdsong

Image Guazhou Ancient City Ruins

Sound Type
Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Guazhou Ancient
City Ruins
19 July 2018

声音标题：YULINR006MS
声音采集者：王林林
声音描述：清晰短促的麻雀声
地点：瓜州
日期：2018.7.19
时间：下午
天气：大风加日照强烈
声音标签：瓜州古城遗址
声音采集仪器：ZOOM H2n
关键词：麻雀

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：YULINR006MS
Sound collector：Linlin Wang
Sound description：Clear and short sparrow sound
Location：Guazhou
Date:19.7.2018
Time：Afternoon
The weather：Strong wind and strong sunshine
Sound tag：Guazhou Ancient City Ruins
Sound collection instrument：ZOOM H2n
Key words：Sparrow

Image Guazhou Ancient City Ruins

Sound Type
Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Guazhou Ancient City Ruins
19 July 2018

声音标题：YULINR007MS
声音采集者：王林林
声音描述：发现城内有汉代陶片碎片
地点：瓜州
日期：2018.7.19
时间：下午
天气：大风加日照强烈
声音标签：瓜州古城遗址
声音采集仪器：ZOOM H2n
关键词：对话

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：YULINR007MS
Sound collector：Linlin Wang
Sound description：Discovery of Han Dynasty Pottery Shards
Location：Guazhou
Date:19.7.2018
Time：Afternoon
The weather：Strong wind and strong sunshine
Sound tag：Guazhou Ancient City Ruins
Sound collection instrument：ZOOM H2n
Key words：Dialogue

Image Guazhou Ancient City Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　● Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.96

563

Dunhuang Suoyang City Ruins
20 July 2018

声音标题：YULINR0024MS
声音采集者：王林林
声音描述：锁阳城遗址-导游部分介绍
地点：敦煌锁阳城遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：敦煌锁阳城遗址
声音采集仪器：ZOOM H2n
关键词：导游介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：YULINR0024MS
Sound collector：Linlin Wang
Sound description：Tour guide introduction
Location：Dunhuang Suoyang City Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Dunhuang Suoyang City Ruins
Sound collection instrument：ZOOM H2n
Key words：Tour guide introduction

Image Dunhuang Suoyang City Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　● Oral voice

No.97

564

Guazhou Ancient
City Ruins
19 July 2018

声音标题：YULINSR001MS
声音采集者：王林林
声音描述：大风日照声音景观
地点：瓜州
日期：2018.7.19
时间：下午
天气：大风加日照强烈
声音标签：瓜州古城遗址
声音采集仪器：ZOOM H2n
关键词：大风日照

声音类型

● 自然的声音环境
  文化的声音环境
  工业的声音
  声音事件
  节日声音
  城市的声音
  乡下的声音
  生态环境声音
  特有文化声音
  声音符号
  历史的声音
  口述声音

Title：YULINSR001MS
Sound collector：Linlin Wang
Sound description：Windy Sunshine Sound Landscape
Location：Guazhou
Date:19.7.2018
Time：Afternoon
The weather：Strong wind and strong sunshine
Sound tag：Guazhou Ancient City Ruins
Sound collection instrument：ZOOM H2n
Key words：Windy sunshine

Image Guazhou Ancient City Ruins

Sound Type ● Natural sound environment
            Cultural sound environment
            Industrial sound
            Sound event
            Festive sound
            City sound
            Country sound
            Ecological environment sound
            Unique cultural voice
            Sound symbol
            Historical voice
            ● Oral voice

No.98

Guazhou Ancient
City Ruins
19 July 2018

声音标题：YULINSR002XY
声音采集者：王林林
声音描述：采访当地司机讲解山体
地点：瓜州
日期：2018.7.19
时间：下午
天气：大风加日照强烈
声音标签：瓜州古城遗址
声音采集仪器：ZOOM H2n
关键词：采访

声音类型

  自然的声音环境
  文化的声音环境
  工业的声音
  声音事件
  节日声音
  城市的声音
  乡下的声音
  生态环境声音
  特有文化声音
  声音符号
  历史的声音
● 口述声音

Title：YULINSR002XY
Sound collector：Linlin Wang
Sound description：Local driver explaining mountain body
Location：Guazhou
Date:19.7.2018
Time：Afternoon
The weather：Strong wind and strong sunshine
Sound tag：Guazhou Ancient City Ruins
Sound collection instrument：ZOOM H2n
Key words：Interview

Image Guazhou Ancient City Ruins

Sound Type   Natural sound environment
            Cultural sound environment
            Industrial sound
            Sound event
            Festive sound
            City sound
            Country sound
            Ecological environment sound
            Unique cultural voice
            Sound symbol
            Historical voice
            ● Oral voice

No.99

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR008MS
声音采集者：王林林
声音描述：
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：YULINSR008MS
Sound collector：Linlin Wang
Sound description：
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：

Image Yulin Cave Ruins

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.100

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR009MS
声音采集者：王林林
声音描述：水、风声
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：水、风声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：YULINSR009MS
Sound collector：Linlin Wang
Sound description：Water, wind
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Water, wind

Image Yulin Cave Ruins

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
● Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.101

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR009XY
声音采集者：王林林
声音描述：导游讲解
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
●口述声音

Title：YULINSR009XY
Sound collector：Linlin Wang
Sound description：Guided tour
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Image Yulin Cave Ruins

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
●Oral voice

No.102

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0011XY
声音采集者：王林林
声音描述：导游讲解
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
●口述声音

Title：YULINSR0011XY
Sound collector：Linlin Wang
Sound description：Guided tour
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Image Yulin Cave Ruins

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
●Oral voice

No.103

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0012XY
声音采集者：王林林
声音描述：导游讲解
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
●口述声音

Image Yulin Cave Ruins

Title：YULINSR0012XY
Sound collector：Linlin Wang
Sound description：Guided tour
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
●Oral voice

No.104

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0013XY
声音采集者：王林林
声音描述：物质文化遗产修复原理
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
●口述声音

Image Yulin Cave Ruins

Title：YULINSR0013XY
Sound collector：Linlin Wang
Sound description：Principles of Restoration of Material
Cultural Heritage
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
●Oral voice

No.105

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0013XY
声音采集者：王林林
声音描述：唐代菩萨造像意义
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：YULINSR0013XY
Sound collector：Linlin Wang
Sound description：Significance of Tang Dynasty Buddha
                  Statues
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Image Yulin Cave Ruins

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
              Unique cultural voice
              Sound symbol
              Historical voice
              ● Oral voice

No.106

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0014MS
声音采集者：王林林
声音描述：文殊菩萨氧化变黑
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：YULINSR0014MS
Sound collector：Linlin Wang
Sound description：Buddha oxidation black
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Image Yulin Cave Ruins

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
              Unique cultural voice
              Sound symbol
              Historical voice
              ● Oral voice

No.107

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0015MS
声音采集者：王林林
声音描述：初唐时期洞窟
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：YULINSR0015MS
Sound collector：Linlin Wang
Sound description：Caves in the Early Tang Dynasty
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Image Yulin Cave Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　● Oral voice

No.108

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0016MS
声音采集者：王林林
声音描述：19号洞窟介绍
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：YULINSR0016MS
Sound collector：Linlin Wang
Sound description：Cave 19 Introduction
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Image Yulin Cave Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　● Oral voice

No.109

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0018MS
声音采集者：王林林
声音描述：25窟开凿介绍
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
●口述声音

Title：YULINSR0018MS
Sound collector：Linlin Wang
Sound description：Introduction to 25-hole excavation
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Image Yulin Cave Ruins

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
●Oral voice

No.110

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0019MS
声音采集者：王林林
声音描述：经变画介绍
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游讲解

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
●口述声音

Title：YULINSR0019MS
Sound collector：Linlin Wang
Sound description：Introduction to Jinghua Painting
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Image Yulin Cave Ruins

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
●Oral voice

No.111

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0020MS
声音采集者：王林林
声音描述：导游介绍
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：YULINSR0020MS
Sound collector：Linlin Wang
Sound description：Guided tour
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Guided tour

Image Yulin Cave Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　● Oral voice

No.112

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0021MS
声音采集者：王林林
声音描述：密教绘画
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：密教绘画

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：YULINSR0021MS
Sound collector：Linlin Wang
Sound description：Tantra Painting
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Tantra Painting

Image Yulin Cave Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　● Oral voice

No.113

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0022M
声音采集者：王林林
声音描述：佛像代表介绍
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
●口述声音

Title：YULINSR0022M
Sound collector：Linlin Wang
Sound description：Buddha Representative Introduction
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Tour guide introduction

Image Yulin Cave Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　●Oral voice

No.114

Yulin Cave Ruins
20 July 2018

声音标题：YULINSR0023M
声音采集者：王林林
声音描述：导游介绍
地点：榆林窟遗址
日期：2018.7.20
时间：下午
天气：晴天
声音标签：榆林窟遗址
声音采集仪器：ZOOM H2n
关键词：导游介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
●口述声音

Title：YULINSR0023M
Sound collector：Linlin Wang
Sound description：Tour guide introduction
Location：Yulin Cave Ruins
Date:20.7.2018
Time：Afternoon
The weather：Sunny day
Sound tag：Yulin Cave Ruins
Sound collection instrument：ZOOM H2n
Key words：Tour guide introduction

Image Yulin Cave Ruins

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　●Oral voice

No.115

Yumenguan Museum
19 July 2018

声音标题：YUMENSR0011MS
声音采集者：王林林
声音描述：导游介绍敦煌及唱歌
地点：玉门关博物馆
日期：2018.7.19
时间：下午
天气：室内
声音标签：玉门关博物馆
声音采集仪器：ZOOM H2n
关键词：导游介绍声音

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Image Yumenguan Museum

Title：YUMENSR0011MS
Sound collector：Linlin Wang
Sound description：Tour guide introduces Dunhuang
Location：Yumenguan Museum
Date:19.7.2018
Time：Afternoon
The weather：Indoor
Sound tag：Yumenguan Museum
Sound collection instrument：ZOOM H2n
Key words：Tour guide introduces sound

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
             Sound event
             Festive sound
             City sound
             Country sound
             Ecological environment sound
             Unique cultural voice
             Sound symbol
             Historical voice
          ● Oral voice

Yongren County
Yunnan
18 February 2018

声音标题：YUNSR003MS
声音采集者：王林林
声音描述：月亮琴弹奏
地点：云南永仁县县城
日期：2018.2.18
时间：下午
天气：晴天
声音标签：云南永仁县县城
声音采集仪器：ZOOM H2n
关键词：月亮琴

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Image Moon piano

Title：YUNSR003MS
Sound collector：Linlin Wang
Sound description：Moon piano playing
Location：Yongren County, Yunnan
Date:18.2.2018
Time：Afternoon
The weather：Sunny Day
Sound tag：Yongren County, Yunnan
Sound collection instrument：ZOOM H2n
Key words：Moon piano

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
             Sound event
             Festive sound
             City sound
             Country sound
             Ecological environment sound
          ● Unique cultural voice
             Sound symbol
             Historical voice
             Oral voice

Yongren County
Yunnan
18 February 2018

声音标题：YUNSR004MS
声音采集者：王林林
声音描述：传统服饰穿搭方式
地点：云南永仁县县城
日期：2018.2.18
时间：下午
天气：晴天
声音标签：云南永仁县县城
声音采集仪器：ZOOM H2n
关键词：对话

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：YUNSR004MS
Sound collector：Linlin Wang
Sound description：How to wear traditional clothing
Location：Yongren County, Yunnan
Date:18.2.2018
Time：Afternoon
The weather：Sunny Day
Sound tag：Yongren County, Yunnan
Sound collection instrument：ZOOM H2n
Key words：Dialogue

Image Moon piano

Sound Type
Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
● Oral voice

No.118

585

Yongren County
Yunnan
18 February 2018

声音标题：YUNSR005MS
声音采集者：王林林
声音描述：龙头月琴试弹
地点：云南永仁县县城
日期：2018.2.18
时间：下午
天气：晴天
声音标签：云南永仁县县城
声音采集仪器：ZOOM H2n
关键词：龙头月琴

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Title：YUNSR005MS
Sound collector：Linlin Wang
Sound description：Dragon head moon piano test
Location：Yongren County, Yunnan
Date:18.2.2018
Time：Afternoon
The weather：Sunny Day
Sound tag：Yongren County, Yunnan
Sound collection instrument：ZOOM H2n
Key words：Dragon head moon paino test

Image Moon piano

Sound Type
Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
● Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.119

586

Yongren County
Yunnan
18 February 2018

声音标题：YUNSR006MS
声音采集者：王林林
声音描述：赛装节时装秀
地点：云南永仁县县城
日期：2018.2.18
时间：夜晚
天气：晴天
声音标签：云南永仁县县城
声音采集仪器：ZOOM H2n
关键词：赛装节时装秀

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
●特有文化声音
声音符号
历史的声音
口述声音

Title：YUNSR006MS
Sound collector：Linlin Wang
Sound description：Costume Festival Fashion Show
Location：Yongren County, Yunnan
Date:18.2.2018
Time：Night
The weather：Sunny Day
Sound tag：Yongren County, Yunnan
Sound collection instrument：ZOOM H2n
Key words：Costume Festival Fashion Show

Image Costume Festival Fashion Show

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
            ● Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.120

587

Yongren County
Yunnan
18 February 2018

声音标题：YUNSR007MS
声音采集者：王林林
声音描述：赛装节时装秀
地点：云南永仁县县城
日期：2018.2.18
时间：夜晚
天气：晴天
声音标签：云南永仁县县城
声音采集仪器：ZOOM H2n
关键词：赛装节时装秀

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
●特有文化声音
声音符号
历史的声音
口述声音

Title：YUNSR007MS
Sound collector：Linlin Wang
Sound description：Costume Festival Fashion Show
Location：Yongren County, Yunnan
Date:18.2.2018
Time：Night
The weather：Sunny Day
Sound tag：Yongren County, Yunnan
Sound collection instrument：ZOOM H2n
Key words：Costume Festival Fashion Show

Image Costume Festival Fashion Show

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
            ● Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.121

588

Yongren County
Yunnan
18 February 2018

声音标题：YUNSR008MS
声音采集者：王林林
声音描述：赛装节时装秀
地点：云南永仁县县城
日期：2018.2.18
时间：夜晚
天气：晴天
声音标签：云南永仁县县城
声音采集仪器：ZOOM H2n
关键词：赛装节时装秀

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Title：YUNSR008MS
Sound collector：Linlin Wang
Sound description：Costume Festival Fashion Show
Location：Yongren County, Yunnan
Date:18.2.2018
Time：Night
The weather：Sunny Day
Sound tag：Yongren County, Yunnan
Sound collection instrument：ZOOM H2n
Key words：Costume Festival Fashion Show

Image Costume Festival Fashion Show

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
              ● Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.122

Yongren County
Yunnan
18 February 2018

声音标题：YUNSR009MS
声音采集者：王林林
声音描述：赛装节时装秀
地点：云南永仁县县城
日期：2018.2.18
时间：夜晚
天气：晴天
声音标签：云南永仁县县城
声音采集仪器：ZOOM H2n
关键词：赛装节时装秀

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Title：YUNSR009MS
Sound collector：Linlin Wang
Sound description：Costume Festival Fashion Show
Location：Yongren County, Yunnan
Date:18.2.2018
Time：Night
The weather：Sunny Day
Sound tag：Yongren County, Yunnan
Sound collection instrument：ZOOM H2n
Key words：Costume Festival Fashion Show

Image Costume Festival Fashion Show

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
              ● Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.123

Yongren County
Yunnan
18 February 2018

声音标题：YUNSR0010MS
声音采集者：王林林
声音描述：赛装节时装秀
地点：云南永仁县县城
日期：2018.2.18
时间：夜晚
天气：晴天
声音标签：云南永仁县县城
声音采集仪器：ZOOM H2n
关键词：赛装节时装秀

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Title：YUNSR0010MS
Sound collector：Linlin Wang
Sound description：Costume Festival Fashion Show
Location：Yongren County, Yunnan
Date:18.2.2018
Time：Night
The weather：Sunny Day
Sound tag：Yongren County, Yunnan
Sound collection instrument：ZOOM H2n
Key words：Costume Festival Fashion Show

Image Costume Festival Fashion Show

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
● Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.124

Yongren County
Yunnan
18 February 2018

声音标题：YUNSR0011MS
声音采集者：王林林
声音描述：赛装节时装秀
地点：云南永仁县县城
日期：2018.2.18
时间：夜晚
天气：晴天
声音标签：云南永仁县县城
声音采集仪器：ZOOM H2n
关键词：赛装节时装秀

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Title：YUNSR0011MS
Sound collector：Linlin Wang
Sound description：Costume Festival Fashion Show
Location：Yongren County, Yunnan
Date:18.2.2018
Time：Night
The weather：Sunny Day
Sound tag：Yongren County, Yunnan
Sound collection instrument：ZOOM H2n
Key words：Costume Festival Fashion Show

Image Costume Festival Fashion Show

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
● Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.125

Zhizuo Village
19 February 2019

声音标题：ZHISR003MS
声音采集者：王林林
声音描述：山里鸟鸣
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：鸟鸣

声音类型

● 自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR003MS
Sound collector：Linlin Wang
Sound description：Bird song in the mountains
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Birdsong

Image Zhizuo Village

Sound Type ● Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No。129

593

Zhizuo Village
19 February 2019

声音标题：ZHISR004XY
声音采集者：王林林
声音描述：手工艺传承人讲金沙江
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：对话

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：ZHISR004XY
Sound collector：Linlin Wang
Sound description：Handicraft Inheritor on Jinsha River
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Dialogue

Image Zhizuo Village

Sound Type　Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
● Oral voice

No.130

594

Zhizuo Village
19 February 2019

声音标题：ZHISR005MS
声音采集者：王林林
声音描述：唢呐小调
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：唢呐

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR005MS
Sound collector：Linlin Wang
Sound description：Suona minor
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Suona

Image Zhizuo Village

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
              ● Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.131

Zhizuo Village
19 February 2019

声音标题：ZHISR007MS
声音采集者：王林林
声音描述：主持人介绍
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：主持人介绍

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：ZHISR007MS
Sound collector：Linlin Wang
Sound description：Moderator introduction
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Moderator introduction

Image Zhizuo Village

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
              Unique cultural voice
              Sound symbol
              Historical voice
              ● Oral voice

No.132

595

596

Zhizuo Village
19 February 2019

声音标题：ZHISR008MS
声音采集者：王林林
声音描述：彝语
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：彝语

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
●特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR008MS
Sound collector：Linlin Wang
Sound description：Yi language
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Yi language

Image Zhizuo Village

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　●Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.133

597

Zhizuo Village
19 February 2019

声音标题：ZHISR009MS
声音采集者：王林林
声音描述：空旷山野里小调
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：山野

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR009MS
Sound collector：Linlin Wang
Sound description：Empty Mountain in Minor
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Yamano

Image Zhizuo Village

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　●Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.134

598

Zhizuo Village
19 February 2019

声音标题：ZHISR0010MS
声音采集者：王林林
声音描述：彝语
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：彝语

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

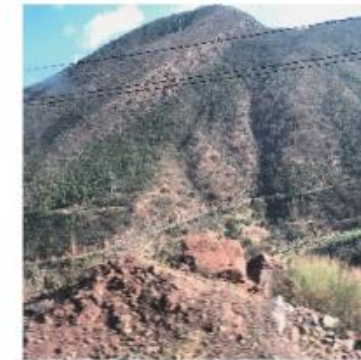Title：ZHISR0010MS
Sound collector：Linlin Wang
Sound description：Yi language
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Yi language

Image Zhizuo Village

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
            ● Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.135

Zhizuo Village
19 February 2019

声音标题：ZHISR0012MS
声音采集者：王林林
声音描述：赛装节开始介绍
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：赛装节

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0012MS
Sound collector：Linlin Wang
Sound description：Introducing the costume festival
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Dress Festival

Image Zhizuo Village

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              Ecological environment sound
            ● Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.136

声音标题：ZHISR0013MS
声音采集者：王林林
声音描述：赛装节开始介绍
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：赛装节

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Zhizuo Village
19 February 2019

Title：ZHISR0013MS
Sound collector：Linlin Wang
Sound description：Introducing the costume festival
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Dress Festival

Image Zhizuo Village

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
● Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.137

声音标题：ZHISR0014MS
声音采集者：王林林
声音描述：赛装节开始介绍
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：上午
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：赛装节

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Zhizuo Village
19 February 2019

苴却古砚
朦眼线石的砚雕艺术

Title：ZHISR0014MS
Sound collector：Linlin Wang
Sound description：Introducing the costume festival
Location：Zhizuo Village
Date:19.2.2019
Time：Morning
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Dress Festival

Image Zhizuo Village

Sound Type   Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
● Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.138

Zhizuo Village
19 February 2019

声音标题：ZHISR0015MS
声音采集者：王林林
声音描述：风中鼓声
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：夜晚
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：鼓声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
● 特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0015MS
Sound collector：Linlin Wang
Sound description：Drums in the wind
Location：Zhizuo Village
Date:19.2.2019
Time：Night
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Drum

Image Zhizuo Village

Sound Type
Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
● Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.139

Zhizuo Village
19 February 2019

声音标题：ZHISR0016MS
声音采集者：王林林
声音描述：节目表演过程
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：夜晚
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：节目表演

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0016MS
Sound collector：Linlin Wang
Sound description：Show performance
Location：Zhizuo Village
Date:19.2.2019
Time：Night
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Performance

Image Zhizuo Village

Sound Type
Natural sound environment
Cultural sound environment
Industrial sound
● Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.140

Zhizuo Village
19 February 2019

声音标题：ZHISR0017MS
声音采集者：王林林
声音描述：节目表演过程
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：夜晚
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：节目表演

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0017MS
Sound collector：Linlin Wang
Sound description：Show performance
Location：Zhizuo Village
Date:19.2.2019
Time：Night
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Performance

Image Zhizuo Village

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　● Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.141

Zhizuo Village
19 February 2019

声音标题：ZHISR0018MS
声音采集者：王林林
声音描述：节目表演过程
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：夜晚
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：节目表演

声音类型

自然的声音环境
文化的声音环境
工业的声音
● 声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0018MS
Sound collector：Linlin Wang
Sound description：Show performance
Location：Zhizuo Village
Date:19.2.2019
Time：Night
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Performance

Image Zhizuo Village

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　● Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.142

Zhizuo Village
19 February 2019

声音标题：ZHISR0019MS
声音采集者：王林林
声音描述：节目表演过程
地点：楚雄彝族自治州直苴村
日期：2019.2.19
时间：夜晚
天气：晴天
声音标签：直苴村
声音采集仪器：ZOOM H2n
关键词：节目表演

声音类型

自然的声音环境
文化的声音环境
工业的声音
●声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0019MS
Sound collector：Linlin Wang
Sound description：Show performance
Location：Zhizuo Village
Date:19.2.2019
Time：Night
The weather：Sunny Day
Sound tag：Zhizuo Village
Sound collection instrument：ZOOM H2n
Key words：Performance

Image Zhizuo Village

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　●Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.143

Erhai
20 February 2019

声音标题：ZHISR0020MS
声音采集者：王林林
声音描述：浪打岸边声音
地点：大理市区下关洱海
日期：2019.2.20
时间：下午
天气：多云
声音标签：海浪
声音采集仪器：ZOOM H2n
关键词：海

声音类型

●自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0020MS
Sound collector：Linlin Wang
Sound description：sea wave
Location：Erhai
Date:20.02.2019
Time：afternoon
The weather：partly cloudy
Sound tag：sea wave
Sound collection instrument：ZOOM H2n
Key words：sea

Image Erhai

Sound Type ●Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　　Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.144

Erhai
20 February 2019

声音标题：ZHISR0021MS
声音采集者：王林林
声音描述：洱海湿地的鸟鸣声
地点：洱海公共公园
日期：2019.2.20
时间：下午
天气：多云
声音标签：鸟鸣声
声音采集仪器：ZOOM H2n
关键词：自然

声音类型

●自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Erhai

Title：ZHISR0021MS
Sound collector：Linlin Wang
Sound description：warble of the park
Location：Erhai public park
Date:20.02.2019
Time：afternoon
The weather：partly cloudy
Sound tag：warble
Sound collection instrument：ZOOM H2n
Key words：nature

Sound Type ●Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No。145

Erhai
20 February 2019

声音标题：ZHISR0022MS
声音采集者：王林林
声音描述：洱海湿地的鸟鸣声
地点：洱海公共公园
日期：2019.2.20
时间：下午
天气：多云
声音标签：云南
声音采集仪器：ZOOM H2n
关键词：鸟鸣

声音类型

●自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Image Erhai

Title：ZHISR0022MS
Sound collector：Linlin Wang
Sound description：Birdsongs in Erhai Wetland
Location：Erhai Public Park
Date:20.2.2019
Time：Afternoon
The weather：partly cloudy
Sound tag：Yunnan
Sound collection instrument：ZOOM H2n
Key words：Birdsongs

Sound Type ●Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

No.146

Erhai
20 February 2019

声音标题：ZHISR0023MS
声音采集者：王林林
声音描述：鸟叫和海鸥叫
地点：洱海公共公园
日期：2019.2.20
时间：下午
天气：多云
声音标签：云南
声音采集仪器：ZOOM H2n
关键词：鸟鸣

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0023MS
Sound collector：Linlin Wang
Sound description：Bird calls and seagull calls
Location：Erhai Public Park
Date:20.2.2019
Time：Afternoon
The weather：partly cloudy
Sound tag：Yunnan
Sound collection instrument：ZOOM H2n
Key words：Birdsongs

Image Erhai

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              ●Ecological environment sound
              Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.147

Erhai
20 February 2019

声音标题：ZHISR0024MS
声音采集者：王林林
声音描述：海鸥叫
地点：洱海公共公园
日期：2019.2.20
时间：下午
天气：多云
声音标签：云南
声音采集仪器：ZOOM H2n
关键词：鸟鸣

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0024MS
Sound collector：Linlin Wang
Sound description：Seagull calls
Location：Erhai Public Park
Date:20.2.2019
Time：Afternoon
The weather：partly cloudy
Sound tag：Yunnan
Sound collection instrument：ZOOM H2n
Key words：Birdsongs

Image Erhai

Sound Type   Natural sound environment
              Cultural sound environment
              Industrial sound
              Sound event
              Festive sound
              City sound
              Country sound
              ●Ecological environment sound
              Unique cultural voice
              Sound symbol
              Historical voice
              Oral voice

No.148

Erhai
20 February 2019

声音标题：ZHISR0025MS
声音采集者：王林林
声音描述：海浪和海鸥嬉戏声
地点：洱海公共公园
日期：2019.2.20
时间：下午
天气：多云
声音标签：云南
声音采集仪器：ZOOM H2n
关键词：鸟鸣

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0025MS
Sound collector：Linlin Wang
Sound description：Waves and seagulls frolic
Location：Erhai Public Park
Date:20.2.2019
Time：Afternoon
The weather：partly cloudy
Sound tag：Yunnan
Sound collection instrument：ZOOM H2n
Key words：Birdsongs

Image Erhai

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　●Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.149

Erhai
20 February 2019

声音标题：ZHISR0026MS
声音采集者：王林林
声音描述：海浪和海鸥嬉戏声
地点：洱海边大桥
日期：2019.2.20
时间：下午
天气：多云
声音标签：云南
声音采集仪器：ZOOM H2n
关键词：鸟鸣

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
● 生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0026MS
Sound collector：Linlin Wang
Sound description：Waves and seagulls frolic
Location：Erhai Bridge
Date:20.2.2019
Time：Afternoon
The weather：partly cloudy
Sound tag：Yunnan
Sound collection instrument：ZOOM H2n
Key words：Birdsongs

Image Erhai

Sound Type　Natural sound environment
　　　　　　Cultural sound environment
　　　　　　Industrial sound
　　　　　　Sound event
　　　　　　Festive sound
　　　　　　City sound
　　　　　　Country sound
　　　　　●Ecological environment sound
　　　　　　Unique cultural voice
　　　　　　Sound symbol
　　　　　　Historical voice
　　　　　　Oral voice

No.150

Erhai
20 February 2019

声音标题：ZHISR0028MS
声音采集者：王林林
声音描述：介绍大理地质和两种鸟
地点：洱海边大桥
日期：2019.2.20
时间：下午
天气：多云
声音标签：云南
声音采集仪器：ZOOM H2n
关键词：鸟鸣

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0028MS
Sound collector：Linlin Wang
Sound description：Introducing Dali Geology and Two Bird
Location：Erhai Bridge
Date:20.2.2019
Time：Afternoon
The weather：partly cloudy
Sound tag：Yunnan
Sound collection instrument：ZOOM H2n
Key words：Birdsongs

Image Erhai

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
             Sound event
             Festive sound
             City sound
             Country sound
           ●Ecological environment sound
             Unique cultural voice
             Sound symbol
             Historical voice
             Oral voice

No.151

Erhai
20 February 2019

声音标题：ZHISR0030MS
声音采集者：王林林
声音描述：洱海边风声
地点：洱海边大桥
日期：2019.2.20
时间：下午
天气：多云
声音采集仪器：ZOOM H2n
关键词：风

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
●生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0030MS
Sound collector：Linlin Wang
Sound description：The wind of the sea
Location：Erhai Bridge
Date:20.2.2019
Time：Afternoon
The weather：partly cloudy
Sound tag：Yunnan
Sound collection instrument：ZOOM H2n
Key words：Wind

Image Erhai

Sound Type   Natural sound environment
             Cultural sound environment
             Industrial sound
             Sound event
             Festive sound
             City sound
             Country sound
           ●Ecological environment sound
             Unique cultural voice
             Sound symbol
             Historical voice
             Oral voice

No.152

Shuanglang
Autonomous
Prefecture
20 February 2019

声音标题：ZHISR0038MS
声音采集者：王林林
声音描述：双廊
地点：双廊
日期：2019.2.20
时间：下午
天气：多云
声音标签：城市
声音采集仪器：ZOOM H2n
关键词：城市

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
● 乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
口述声音

Title：ZHISR0038MS
Sound collector：Linlin Wang
Sound description：the sound of country
Location：Shuanglang
Date:20.02.2019
Time：afternoon
The weather：partly cloudy
Sound tag：wind
Sound collection instrument：ZOOM H2n
Key words：city

Image Shuanglang

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
● Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
Oral voice

Shuanglang
Autonomous
Prefecture
20 February 2019

声音标题：ZHISR0039MS
声音采集者：王林林
声音描述：双廊的广播声
地点：双廊
日期：2019.2.20
时间：下午
天气：多云
声音标签：广播
声音采集仪器：ZOOM H2n
关键词：人声

声音类型

自然的声音环境
文化的声音环境
工业的声音
声音事件
节日声音
城市的声音
乡下的声音
生态环境声音
特有文化声音
声音符号
历史的声音
● 口述声音

Title：ZHISR0039MS
Sound collector：Linlin Wang
Sound description：broadcast
Date:20.02.2019
Time：afternoon
The weather：partly cloudy
Sound tag：broadcast
Sound collection instrument：ZOOM H2n
Key words：people

Image Shuanglang

Sound Type Natural sound environment
Cultural sound environment
Industrial sound
Sound event
Festive sound
City sound
Country sound
Ecological environment sound
Unique cultural voice
Sound symbol
Historical voice
● Oral voice