

Qin Shi Huang Mausoleum Shouldn'T Be Completely Excavation

Qianqi Sun

Beijing language and culture university, Beijing, 100080, China

*suneureka@163.com

Abstract

This paper mainly discusses whether the current level of archaeology can fully open Qin Shi Huang Mausoleum. It discusses from four aspects: existing technology, resource investment, social influence and relevant policies. Considering that it still lacks the ability for comprehensive archaeological excavation, the partial excavation is still a better choice.

Keywords

Archeology; Technology Archeology; Public Archeology.

1. Introduction

According to CCTV News, the third excavation of the Terracotta Warriors Pit No. 1. unearthed the first shield of the Terracotta Warriors Pit, in which archaeologists further confirmed the shape and historical details of the army during the Qin Dynasty. Since the first terracotta warriors were discovered by chance in 1974, archaeologists have excavated the terracotta pits, the inner and outer walls of the mausoleum, some of the burial pits, and parts of the tomb of Qin Shi Huang [1]. The question of whether or not the tomb should be fully excavated has been debated. The economist Zhang Wuchang posted an article, in which he systematically emphasizes the positive effects of the development of the tomb on the local economy, and also argues that today's technology has no problem in excavating and protecting cultural relics.

There are a lot of arguments about if we should totally open Qin Shi Huang's tomb. The discussion of this topic requires an analysis based on the current level of archaeology in China, and try to give own opinion. The purpose will be supported in three perspectives: existing technology, the cost of full excavation, the social influence.

2. Existing Technology Can Only Support Partial Excavation

In the discussions about whether we should open the whole Qin Shi Huang's tomb or not, people place a lot of hope on technology. To put it bluntly, the present archaeology technology can not support the need for a complete excavation of the Qin Shi Huang's tomb. At the same time, the situation underground is still in an inexact situation, relevant departments cannot provide enough protection to the culture relic if they open the Qin Shi Huang's tomb now.

Firstly, the current technology no longer allows for further exploration of Qin Shi Huang Mausoleum, and there are still many unknowns about the condition of the tomb beneath the Mount Li. Doing a comprehensive archaeological excavation of the imperial tomb now could not ensure that the historical information provided by the tomb can be adequately studied and preserve. Aerial remote sensing technology has ben used in the archaeology work of Qin Shi Huang's tomb, it helps to find out the rough distribution of the tomb, by enhancing processing or extracting spectral information, the spatial location of cultural relics can be reflected through Contouring [2]. There was a massive mercury anomaly during the testing process, and the soil seal buildup had an unusual height, but it could not be studied in depth based on the current technology [3]. This result shows that except doing the traditional excavation work, with the

help of the technology we can finish the exploration of emperor's tomb in a more efficient way while giving the relics a more conservative protection. It also shows that doing the full excavation now could bring terrible harm to the on-site researchers, and irreversible negative impact on the environment around Qin Shi Huang's tomb. In a large number of historical records and folklore about Qin Shi Huang's tomb mentions that when Qin Shi Huang built his tomb, he set up many devices in the tomb that could kill tomb robbers in order to prevent the world after his death from being disturbed [4]. These unknown variables also give a deadly threat to archaeologists during archaeological work. Current technology is no longer able to present more details in the exploration, and these lead to the fact that most of the conditions inside the tomb are still stay in unknown. Based on the vague information, archaeologist can not determine exactly where the excavation should begin, can not give a detailed excavation plan and anticipation plans, the excavation work can not ensure that it won't break up the balance of the environment in the tomb and won't bring an irreversible damaged to the object in the tomb.

Secondly, if fully archaeological excavation work is carried out on the Qin Shi Huang's tomb, the preservation of the archaeological site after the tomb is completely opened is a great challenge, and there is no technology available to ensure that the site of the imperial tomb can be perfectly preserved. Currently, Building Information Modeling technology is generally accepted for the conservation of architectural sites [5]. This technology enables efficient solutions to the problems encountered in the process of architectural heritage conservation. The feasibility of this approach has been demonstrated by the model construction of the Ming and Qing dynasty official architectural heritage in China [6]. But, the thing is, the problem of physical conservation of archaeological sites remains is still unsolved, it could only preserve the relevant data with realistic modeling. In different phases, Qin Shi Huang's tomb will face different environmental mutations. Temperature and humidity changes, moisture and salt migration will all lead to dry shrinkage and cracking, salt flooding, microbial growth, surface peeling, weathering, collapse, and accelerated aging [7] of the Qin Shi Huang's tomb after full excavation.

Although the existing technology provide support for many questions that could not be studied originally, it still can not provide enough power to support the fully excavation. But newest technology replaces traditional archaeological and heritage conservation methods, provide a safe research environment for the partial excavation. At present, partial archaeological work can efficiently push development of the study of Qin Shi Huang's tomb.

3. The Cost of Full Excavation is Prohibitive and Unnecessary

In addition to the lack of technology, the resources needed of the full excavation are enormous, the area and scope of Qin Shi Huang Mausoleum is too large for the current level of comprehensive archaeology to support a full excavation of the tomb.

According to Xu [8]:

Through archaeological exploration and excavation, more than 600 various types of burial pits and accompanying tombs have been discovered in the 56.25 square kilometers of the Qin Shi Huang's tomb, and the scale of the sites and artifacts found is enormous.

There are inferences said, base from the top point of the tomb's grave mound, extending 3750 meters to the east, west, north and south, the mountains, plains and rivers form a natural barrier of 7.5 kilometers in length and width, and within this area, relics of the Qin Dynasty have been found over the years. This area maybe this is the real size of Qin Shi Huang's tomb [9]. It is written in the book *The Records of the First Qin Emperor*(104 BC):

First Emperor first reign, wear the rule of Mount Li, and the world, the world's apprentices sent to more than 700,000 people. Wearing three springs under the copper and to the camphor, the official view of the hundred officials of the strange and exotic weapons migrate Zang full of. The

craftsman made the machine crossbow yarn, some wear close to the readily shot, with the mercury for a hundred rivers, rivers and the sea, the machine phase infusion, above with astronomy, below with geography.

It is clear that the content of the archaeology of the Qin Shi Huang's tomb is very large, and the archaeological directions involved are extensive. Just the broad archaeological directions would include a lot of kind. If the tomb of Qin Shi Huang were to be fully excavated, several archaeological studies would have to be conducted while protecting such a massive tomb, and because the tomb is important, any new archaeological discoveries resulting from a full excavation would have to be fully studied.

Firstly, the resources consumed to fully open the tomb of Qin Shi Huang are too much. According to the current detection, the central part of the Qin Shi Huang Mausoleum is about 500 m x 500 m square underground palace, this part of the excavation must be a large uncovering the top, the sealing soil layer by layer to take off, and then layer by layer to dig towards the underground palace [10]. The project of earth moving is huge. Meanwhile, the water table in the Qinling area is quite high, with water seen at 16 meters from the ground, while the underground palace is below 26 meters [10]. When excavating, if there is no perfect water pumping plan, the whole underground palace will be flooded by big water.

Just fully open Qin Shi Huang's tomb will need to face two such difficult issues. According to the current level of archaeology, removing the soil and pumping water will require a lot of manpower and material resources, as well as detailed plans and contingency plans, which will require a large number of experts to form a team, a long discussion and communication will be taken. Partial archaeological excavations can devote all this power to the specific study of each new discovery, requiring far fewer resources than a full excavation, getting more visualized research results and have a greater efficiency.

Secondly, a full excavation and study of the Qin's tomb would create an impossible workload. According to the second archaeological excavation of the Guanghan Sanxingdui site, which was started in 2020, the archaeological team build six archaeological square cabin for the newly discovered sacrificial pits No. 2-8, and build a bigger lab building which include all of these square cabin in it [11], in order to make sure the environment of the archaeological site is consistent with the environment before the excavation. In 2022, the "Changjiangkou No. 2" Qing Dynasty trading vessel was salvage excavation in a whole part and transported into the laboratory without any change. Laboratory archaeology involves moving relics, that is, moving them to the laboratory for work. And the archaeological shelter is equipped with mobile equipment, which means moving some testing equipment to the construction site for excavation and testing at any time. Both of these are a special measure taken when excavating special key sites, with the aim of extracting as much information as possible from the archaeological site and preserving the survival environment of the objects. The wide area and the complexity of the Qin Shi Huang's tomb required the establishment of many large archaeological square cabin and the transport a huge amounts of objects to the archaeological laboratory which will be especially build for the Qin Shi Huang's tomb. The workload was enormous and difficult to accomplish, which made it difficult to successfully implement the two existing methods that could effectively protect the artifacts and tomb structures.

Although Qin Shi Huang's tomb is important, but China is rich in historical remains for archaeological research, and there are more important historical sites than just the Mausoleum of Qin Shi Huang. Only the major discoveries of the "Archaeological China" project during 2022 have already include Houchengzui Stone City in Hohhot, Inner Mongolia; the site of Bicun in Xingxian, Shanxi; the Erlitou site in Yanshui, Henan; and the Shang dynasty cemetery in Shuyuan Street, Zhengzhou, Henan. All of which have contributed to the development of prehistoric civilization and early state formation in China. It is unnecessary and impossible to

invest such a huge archaeological resources in Qin Shi Huang's tomb. Not to mention that these massive amounts of money, resource consumption and huge amounts of work are inherently unrealistic. Partial excavation is feasible and currently the most effective way to study the tomb of Qin Shi Huang.

4. The Social Influence of the Completely Excavation Work is Still Not Sure

The tomb of Qin Shi Huang is notable. A full excavation of the tomb should not be carried out until the impact of this work have been thoroughly discussed and the appropriate solutions have been provided.

Qin Shi Huang is a very important Chinese historical figure. A full excavation of the tomb of Qin Shi Huang will certainly have an impact on public opinion.

The Qin Empire was crucial in the history of China, setting the basic political pattern for more than 2,000 years to follow and having a direct influence on the cultural development of the country, and Qin Shi Huang was the sovereign of this Empire. All the sovereign of China after him have been called or called themselves emperors, and it was Qin Shi Huang who established this title [12]. The unification of the using language and writing system, the construction of the Great Wall and the Lingqu Canal were all excellent policies of Qin Shi Huang [12], what present here are only part of his policies. His political achievements in the first half of his life were remarkable. However, according to historical records, such a good and outstanding ruler was a great failure in the second half of his life, the reason of it is still a mystery [13]. The rumor that Qin Shi Huang sent children to seek medicine that can make people live for ever has been discuss in China for thousands of years, and this famous rumor even relates to the origin of Japan, but so far, there is no physical object can explain and verify this rumor [13]. Chinese people take history classes in primary, middle and high school, and the Qin dynasty and its emperor will be mentioned repeatedly in the history curriculum, and the importance of them will be emphasized, so every Chinese knows Qin Shi Huang and how important he was. The tomb of Qin Shi Huang is the tomb of this important emperor. On the one hand, people hope to find the answers to these historical mysteries through the archaeology of Qin Shi Huang's tomb. On the other hand, because ancient Chinese concept of "death is like life", this is an opportunity to witness the productivity of ancient China, and may find out some legendary treasures in the tomb. China, and even the world, has expectations for the tomb of Qin Shi Huang. It can be predicted that if a full excavation of Qin Shi Huang's tomb is carried out, then this archaeological work will definitely attract the attention of the Chinese and the whole world.

However, since it is uncertain what new discoveries will be made in the archaeological study of Qin Shi Huang's tomb, it is not a good choice to start a full excavation of the tomb now.

September 28, 2020, President Xi Jinping stressed the need to build an archaeology of Chinese characteristics and Chinese style, in order to build a better understanding of the long-standing and profound Chinese civilization during the twenty-third collective study of the Central Political Bureau [14]. It is impossible to separate archaeological activities from cultural dissemination in China, and it is impossible for archaeologists to be free from political ideology and to assume more social and moral responsibility [15]. The secondary archaeological work at Sanxingdui is the latest famous and important archaeological work in China. The archaeological excavation was broadcast live on authoritative media platforms 24 hours a day [14]. Viewers can access the webcast at any time to watch the archaeological excavation site. At the same time, CCTV also conducted a special live broadcast of the archaeological site. Professional scholars are invited to answer viewers' questions about live excavation in the live room, an interaction of archaeology for all people was realized [14]. Based on the level of interest in Qin Shi Huang's tomb, conducting such a major archaeological work requires a complete feedback to the community. It is sure that the full excavation of the Qin Shi Huang's

tomb will usher in a more comprehensive live coverage of the work than San Xingdui, with each new archaeological discovery being presented. Although historical sources record the internal structure of the tomb of Qin Shi Huang and some of the burial objects. However, there is still no study that can say with certainty that a comprehensive excavation of the tomb of Qin Shi Huang can explain the historical mysteries that people care about and would allow people to visualize the great emperor and his luxurious tomb. People can easily be disappointed if the results of the archaeological work do not meet expectations, this result is not conducive to the advancement of Chinese culture.

Carried out a comprehensive archaeological excavation of the Qin Shi Huang's tomb, it must not only focus on its academic value for archaeology and history, but also on its impact on the development of Chinese culture and the social influence. Qin Shi Huang's tomb is so important, the full excavation should not be taken before the social influence have been studied clear, the damage of a hasty excavation can be enormous if it has a negative impact.

5. Conservation Policy of the Qin Shi Huang Mausoleum

Qin Shi Huang Mausoleum is located in Lintong District, Xi'an, Shaanxi Province. By the end of 2022, Lintong District had a resident population of 684,500, and the gross regional product in 2022 was 26.708 billion yuan, of which the added value of the tertiary industry was 14.798 billion yuan.

The mausoleum area of the Qin Shi Huang emperor is located on the alluvial fan in front of the mountain, facing natural disasters mainly flood intrusion, and the rocks and sand covered in the upper part of the mausoleum area constrains and affects the archaeological exploration work [16]. With the acceleration of urbanisation, there is an increasing contradiction between the protection of cultural heritage and socio-economic development, under the promulgation and implementation of the Regulations on the Protection of Cultural Relics in Shaanxi Province and the Regulations on the Protection of the Qin Shi Huang Mausoleum in Shaanxi Province, the local government gave up its original development plan near the Qin Shi Huang Mausoleum and turned to other directions, which alleviated the contradiction to a certain extent[16].

Table 1. The status of regulations for the protection of some of China's imperial tomb sites

Name of the Imperial Tomb	Qin Shi Huang Mausoleum	Qianling	Ming Tombs
heritage grade	The first batch of national key cultural relics protection units, the world cultural heritage	The first batch of national key cultural relics protection units,	The first batch of national key cultural relics protection units, world cultural heritage (Ming and Qing dynasty royal tombs)
Name of existing regulation	Regulations on the Protection of the Qin Shi Huang Mausoleum in Shanxi Province	Qianling Heritage conservation planning	Measures for the Protection and Management of the Ming Tombs in Beijing
Existing Regulations Issuing Unit	Shanxi Provincial People's Congress Standing Committee	Qian County Cultural Relics and Tourism Bureau	Beijing Municipal People's Government
Year of implementation of existing regulations	2005	2015	2002
Year of latest update of the regulations	2021	2021	None

Nowadays, the protection and development of cultural heritage is still a topic which need to be discussing deeply. The Law of the People's Republic of China on the Protection of Cultural Relics makes it clear that all archaeological excavations must be approved by the State Council's administrative department for cultural relics, and stresses that the principle of protection is the

mainstay of cultural relics work. Regulations for the protection and management of the cultural heritage of the mausoleums of the emperors in China are based on the Law of the People's Republic of China on the Protection of Cultural Relics and other relevant laws.

6. Conclusion (Discussion)

The essay indicates that the Qin Shi Huang's tomb shouldn't be completely excavation, compared to it, partial excavation work is more appropriate. The first paragraph explains that with current archaeological technology, it is impossible to conduct a full excavation of the Qin Shi Huang's tomb or to preserve the objects. The second paragraph makes the point that the workload is huge and difficult to complete because of the size and scope of the Qin Shi Huang's tomb. The third paragraph emphasizes that the social implications of a full excavation of the Qin Shi Huang's tomb are still unknown. There is a heated debate about whether or not a full excavation of Qin Shi Huang's tomb should be conducted, and as technology advances, there is growing concern about this issue. This article discusses this issue and argues that with the current level of archaeology, a full excavation of Qin Shi Huang's tomb lacks conditions in several aspects, and that a partial excavation is the most effective method. This article mainly refers to the reports on the archaeological project by authoritative media, and is also inspired by some history books with information about the Qin Dynasty. However, my references are not perfect because of the lack of access to relevant archaeological records and reports. Due to the lack of specific information, the exposition of some points is not as smooth and strong as I expected. This paper offers its opinion on the topic of the archaeological excavation of the Tomb of Qin Shi Huang. It is intended to give ideas and directions to scholars studying this issue, and to make new breakthroughs in the archaeology of Qin Shi Huang's tomb.

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