

## REVIEW

# British Museum Exhibition Review: The Jericho Skull, Creating an Ancestor

Cara Hirst

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The temporary exhibit at the British Museum, open 15<sup>th</sup> December–19<sup>th</sup> February, and located to the right of the main entrance in the Raymond and Beverly Sackler Gallery (Room 59); is dedicated to a single Neolithic crania from Jericho, known as the Jericho Skull. This exhibit demonstrates the value of relatively recent technologies in archaeological research, highlighting the previously hidden information made possible through CT scanning and the value of these methods in both archaeological research but also in communicating archaeology in a visually stimulating manner which allows an exhibit to take a single item, and create an in depth exhibit featuring both the original material and two cranial 3D prints along with a facial reconstruction.

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**Keywords:** Jericho Skull; Facial reconstruction; CT-scanning; 3D-printing; The British Museum

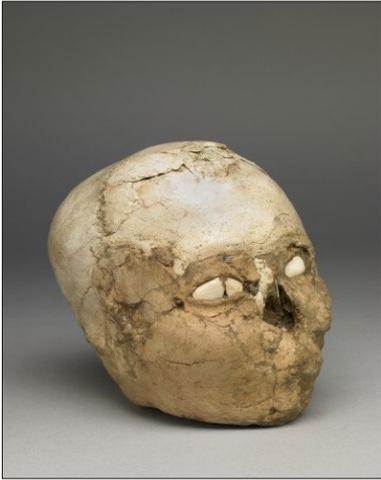
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## Introduction

The Jericho Skull (**Figure 1**) was first exhibited in 1957, and is one of seven plastered skulls excavated by Kathleen Kenyon at Jericho in 1953. Dated to between 8,500 and 9,300 BP the Jericho Skull is amongst the oldest human remains currently curated by the British Museum (The British Museum N.D). The crania of the Jericho Skull was filled with soil, and a thick layer of plaster was applied to the cranium, and shaped as the face. Plaster was also placed at the base of the crania, so that the skull sits upright unsupported, with shells placed in the orbits, resembling eyes (Newitz 2016).

Following the post-mortem treatment of the skull (primarily the application of the plaster layer across the whole of the crania) very little information could be deciphered from osteological analysis, without damaging the plaster layer. Of the limited analysis which could be conducted, visual analysis of the cranial sutures indicated that the individual was a mature adult at time of death, but cranio-facial morphology and dental wear could not be visualised to allow for an estimation of sex and age. Radiographs were taken of the skull but the soil filling the cranial vault preventing clear images (Fletcher 2014).

A number of theories were suggested concerning the seven plastered skulls excavated at Jericho, with consideration that they may have been part of Neolithic rituals. Theories



**Figure 1:** The Jericho Skull excavated by Kathleen Kenyon from the Neolithic site at Jericho (8500–9,300 years old) (© The Trustees of the British Museum) (The British Museum, N.D).



**Figure 2:** Facial reconstruction of the Jericho Skull (© Trustees of the British Museum) (Voon 2017).

ranged from the worship of elder males, individuals with high position or status in society, or that the plaster faces are portraits of revered individuals in the community (Newitz 2016; Fletcher 2014).

While until recently, very little could be learned from the skull due to the post-mortem modification concealing the facial morphology, the increased availability of digital imaging technologies such as CT scans in archaeological research has revealed further information from under the Jericho Skull's plaster face. By micro CT-scanning the Jericho Skull researchers were able to analyse the crania without damaging the exterior plaster face (The British Museum 2016).

The Jericho Skull exhibit details these new discoveries, using 3D printing from the CT scans and facial reconstruction to bring to life these discoveries for museum visitors. The exhibition contains four displays; the original Jericho Skull, two 3D prints from the recent micro-CT scan and a facial reconstruction. One of the 3D prints shows the complete cranium, including the facial features which were previously hidden under layers of plaster. The second 3D print is the

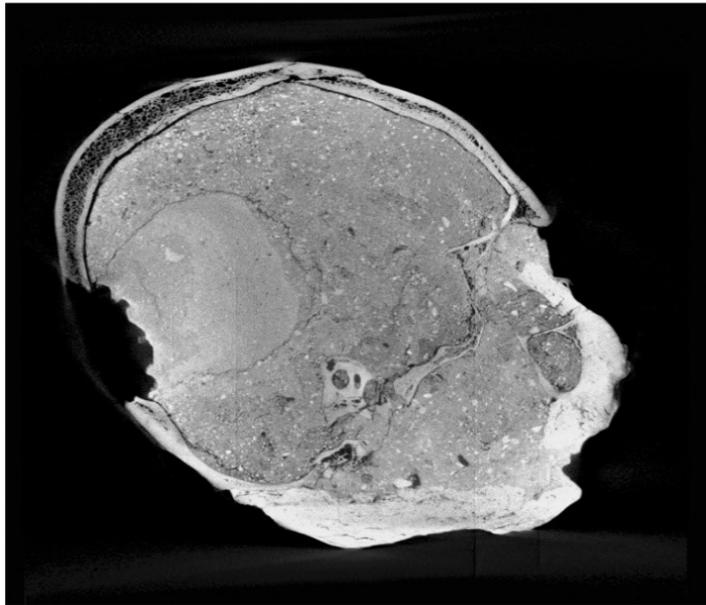
left side of the cranium bisected along the sagittal plane, this illustrates the changes in thickness of the cranial bones which are suggested to result from head binding. The facial reconstruction (**Figure 2**) brings to life the individual for museum visitors, although archaeological researchers may be sceptical of the accuracy of such facial reconstructions and query the exhibits claim that the reconstruction is accurate enough that *'his family would have recognised him'*. With the mandible absent and no previous studies sufficiently investigating the accuracy of facial reconstruction, such a claim is ambitious, however for the purposes a museum displays the facial reconstruction does its job of connecting a the 21<sup>st</sup> century museum visitors to a Neolithic individual.

While the 3D displays are visually stimulating and help to emotionally connect the audience, text displays in the exhibit, as well webpages by the British Museum detail the scientific value of such methods increasing our understanding of the individual behind the Jericho Skull (Fletcher 2014; The British Museum N.D; The British Museum 2016). CT scanning confirmed that the individual



**Figure 3:** The 3D print of the Jericho Skull crania, showing the facial features including a model mandible, added to the crania for the purposes of reconstruction (© Trustees of the British Museum, photo by RN-DS partnership).

was a mature adult, cranial morphology also indicated that the individual was probably male, based on a prominent supraorbital torus, and that they had a healed nasal fracture (**Figure 3**). Examination of the maxillary dentition revealed a number of broken teeth, tooth decay and an abscess. The second and third molars were undeveloped and the second right incisor was missing (Fletcher 2014). CT scans also showed a deformed crania, attributed to cultural head binding. While some evidence of head binding was visible from visual analysis of the skull and from x-rays, CT scans confirmed this showing changes in the thickness of the cranial bones, indicating cranial modification occurring while the crania was forming. These revelations arguably indicate that the individual may have been considered “special” in his community from around birth, indicated by the head binding which can only influence cranial morphology if started during childhood.



**Figure 4:** Sagittal slice from micro-CT image, this shows variation in the thickness of the cranium and the clay ball plugging the hole in the posterior of the crania (© Trustees of the Natural History Museum), (Voon 2017).

In addition to the information that was gained concerning the individual, the CT scan (**Figure 4**) also revealed post-mortem treatment of the crania. It is suggested that the crania was deliberately filled with soil, based on concentric rings of grit within the soil and finer clay sealing the hole at the posterior of the skull. It is argued that filling with soil may have acted to support the crania during the plastering process (Voon 2017). With such little information known about mortuary practices during the Neolithic period, using digital imaging to investigate below the plaster of the Jericho Skull has provided a brilliant opportunity to investigate life and death during the Neolithic period in Jericho. This exhibition therefore demonstrates not only the value of the application of new technology to archaeology, but also how by expanding upon a single artefact a museum can build an entire exhibition providing a detailed, and engaging story relating to both the archaeological material and the availability of technological advancements in expanding upon archaeological research.

### Competing Interests

The author has no competing interests to declare.

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