



The Size and Movement of the Ritual Barks at the Temple of Karnak¹

Ancient Egyptian temples like Karnak functioned primarily as the home (*per* in the Egyptian language) of the gods on earth. Deep inside the heart of the temple, inside many layers of walls, courts and halls, the statue of the god was kept safe and satisfied through a series of complicated rituals (see **Daily Ritual** video and text for more information on the rituals at the temple). Only the most privileged priests were allowed to offer the god's image food, drink and other goods that would guarantee his beneficence towards Egypt.

During special occasions, however, the statue of the god emerged from his protected space in the center of the temple and traveled to visit the shrines of other gods in a highly ritualized festival cycle. In order to protect the god's image, it was placed in an enclosed shrine and carried on a platform decorated with a model boat (the traditional means of travel in Egypt). In the case of Karnak, the statue of Amun-Re (and sometimes the images of his consort Mut and son Khonsu), was processed out of Karnak and moved over land and via riverboat to the temple of Luxor (south of Karnak) or to other temples on the Nile's west bank. (see **Processional Routes and Festivals** video and text for detailed descriptions of different festival processions that took place at Karnak).

The festival procession on the move

Festivals were a time for great rejoicing in the city of Thebes. The public was included in the great celebrations, and as the bark of the god exited one temple and processed to the next, the local people would watch the splendid parade moving past.

At Luxor temple, relief scenes depicting episodes in the Opet festival show the divine barks of Amun-Re, Mut and Khonsu moving from Karnak to Luxor and back, joined by a bark for the king himself. During the journey, which was made by river boat, people accompanying the procession played musical instruments, clapped, and performed gymnastic feats. Like some modern-day parades, the show was accompanied by a display of the military and officials carrying standards or flags.



Hatshepsut burning incense to the portable bark of Amun-Re, enclosed in a bark shrine along the festival route, shown on the Red Chapel blocks from Karnak



Block from the red chapel of Hatshepsut, with priests carrying and accompanying the bark during the festival journey



Block from the Hypostyle Hall at Karnak, with masked priests carrying the bark, and the king (far left) and priest (center) accompanying the bark in procession

1 Portions of this text are based on a scholarly article entitled "Visualizing the size and movement of the portable festival barks at Karnak temple," written by the author and to be published in the *British Museum Studies in Ancient Egypt and the Sudan (BMSAES)* in 2012: http://www.britishmuseum.org/research/online_journals/bmsaes.aspx

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Ritual Barks at the Temple of Karnak

The form and purpose of ritual barks

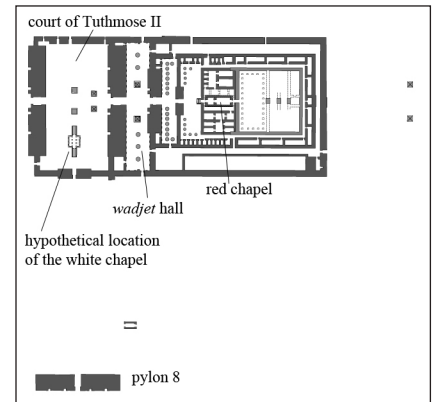
Unfortunately, while many of the temple spaces used in these festival ceremonies still survive, none of the original processional barks remain. However, inscribed relief scenes depicting the ceremonies at Karnak and other Theban temples provide us with information on their original appearance. Stone blocks from Queen Hatshepsut's red chapel (18th Dynasty) and the hypostyle hall of kings Sety I and Ramesses II (19th Dynasty) show that the god's shrine was placed inside a model wooden boat supported by a sled and carrying poles. A pair of ceremonial oars was attached at the stern, and symbols of the ram-headed god Amun-Re decorated both ends of the boat.

Visualizing bark movement within the Digital Karnak model

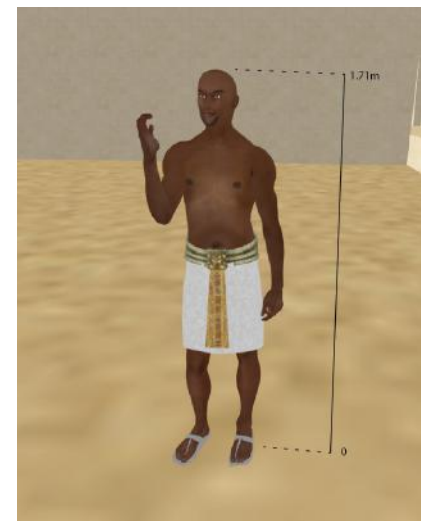
The size and movement of the bark in the early 18th Dynasty

The best evidence for the size and movement of the processional bark in the early 18th-Dynasty comes from the reign of Hatshepsut. Imagery from the queen's red chapel seems to suggest the sled was supported by two poles (one on each side of the shrine), with six priests holding each pole.² However, the processional bark was elaborated and enlarged by the later New Kingdom kings, and it is clear that the divine barks were then supported by three (and sometimes five) poles. The reliefs on the red chapel are not clear, as they only depict one row of carriers, leaving the viewer to fill in the depth of the scene. Thus, Egyptologists are unsure of the size of the bark during the reign of Hatshepsut, and a number of scholars believe it was supported by three poles during this time as well.³

Schematic 3D models of the different versions of the processional bark were created in order to test their movement through the temple space. The carrying poles, platform (or sled), and the model boat are depicted as wood. The interior shrine for protection of the divine statue is textured gold (the actual model boat and shrine would have been decorated with paint or gilding). Rows of priests carrying the shrine were added to replicate the original size of the procession. The length and width of the 3D models are based on estimates used in Egyptology literature for the size of the bark. Commonly, these calculations suggest that each row of priests supporting the carrying poles of the bark would have measured .44m wide.⁴ Each priest was built to stand 1.7m (5'7" tall), and the interior shrine was built 1m high (proportionate to relief imagery). This would be more than large enough to contain the divine statue of Amun-Re, as a surviving example now in the British Museum shows such statuettes would have been quite small.⁵ The combined height of the carriers plus the model boat and shrine (2.7m in the 3D model) cannot be estimated with any accuracy without additional information on the actual size of the original artifacts.



Map of Karnak temple during the reign of Hatshepsut



Digital priests, built to stand 1.7m tall, were arranged in various combinations to test if different versions of the processional bark would have been able to move through Karnak

- 2 Carlotti 2003, 236-238
- 3 Suggested first by LeGrain 1917
- 4 LeGrain 1917:10-13
- 5 The gilded silver statuette from Karnak in the 18th Dynasty at the British Museum (EA 60006) measures 21.3cm high.

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Ritual Barks at the Temple of Karnak

Version A

Length: 4.46m (14.63 feet)

Height: 2.7m (8.86 feet)

Width: .88m (2.89 feet)

Total priests serving as carriers: twelve (six in front of the shrine, six behind)

Number of carrying poles: two (one on each side of the platform),

Version B

Length: 4.46m (14.63 feet)

Height: 2.7m (8.86 feet)

Width: 1.32m (4.33 feet)

Total priests serving as carriers: eighteen (nine in front of the shrine, nine behind)

Number of carrying poles: three (the boat and shrine placed off center)

At certain points during navigation through the temple, the priests may have been forced to change their hold on the carrying poles in order to avoid obstacles in their path.

The exact route of the processional barks during the reign of any given king remains unknown, as the texts referring to these ritual events never designate an exact path. During the reign of Queen Hatshepsut, the evidence suggests that Amun-Re started processions in the central bark shrine,⁶ the queen's famous red chapel (built of reddish colored quartzite blocks).

The red chapel

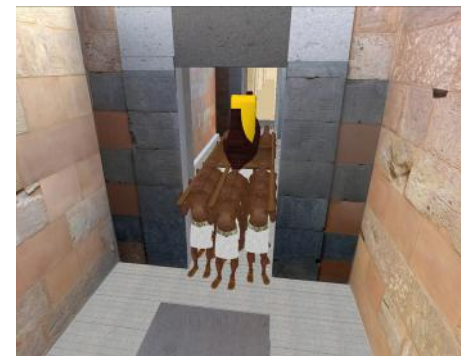
In the first images, the bark with twelve (version A) and eighteen priests (version B) is shown within the red chapel. Both versions of the portable bark can pass through the doorways and halls without trouble.

From the red chapel, priests would have carried the bark along the main axis of the temple, moving westward through the sixth and fifth pylon gateways.⁷ The model visualization demonstrates that the larger, version B bark would have moved easily through the series of monumental doorways.

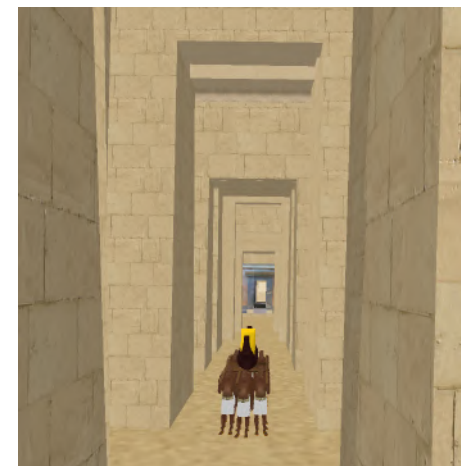
Next, the processional bark would have entered the *wadjet* hall, the site of royal coronation and renewal festivals at Karnak temple. In the reign of Queen Hatshepsut, two rose granite obelisks were added to the center of the hall, a space already ringed by standing and seated stone statues of king Thutmose I. Even with the changes, however, the hall's large size still allowed either form of the bark to move easily within.



Version A bark inside the doorway between the sanctuary and the vestibule of Hatshepsut's red chapel



Version B bark inside the doorway between the sanctuary and the vestibule of Hatshepsut's red chapel



Version B bark moving along the main east-west axis of the temple

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Ritual Barks at the Temple of Karnak

The procession left the *wadjet* hall via the fourth pylon and entered the front court of the temple at that time, built by king Thutmose II.⁸ Some Egyptologists believe that on these special occasions, select members of the community would have been allowed to greet the divine bark on its way out for procession in the temple's first court. Perhaps, then, this area would have been filled with onlookers.

Next, the bark would have turned 90 degrees and exited the court through its southern gate. Perhaps at this point it would have made a stop in the white chapel, a Middle Kingdom shrine built by king Senwosret I to celebrate his *heb sed* festival.⁹ The chapel seems to have remained standing at the temple in the early 18th-Dynasty, and it may have been used as a statue or bark shrine at this time.¹⁰

Attempting to move the version A and version B barks into the white chapel in the model show that although the entrance and exit doors were wide enough to accommodate either bark, the height of the 18th Dynasty barks may have posed a problem in accessing the central area of the chapel. The modeled shrine (1 meter tall, about 39 inches) would have been too tall to clear the lintel of the chapel's door when carried on the platform supported on the shoulders of the priests. It is possible, therefore, that the portable bark and shrine would have been slightly shorter than depicted in the model. Alternatively, the carriers could have changed their grip and lowered the platform before moving the bark into the chapel.

The bark would have exited the open court of Thutmose II (a space later destroyed by Amenhotep III) through its southern gateway, leaving the central core of the temple. Moving south, the *cortege* would have passed through the eighth pylon, also constructed by Queen Hatshepsut.¹¹

Relief scenes on Hatshepsut's red chapel depict the bark of Amun-Re visiting the calcite chapel of Amenhotep I after returning to Karnak temple during the *Opet* festival procession.¹² The model demonstrates that the bark in either form could have fit easily into this chapel, which may have been located between the eighth pylon and the court of Thutmose II.¹³

The expansion of the bark in the 19th Dynasty

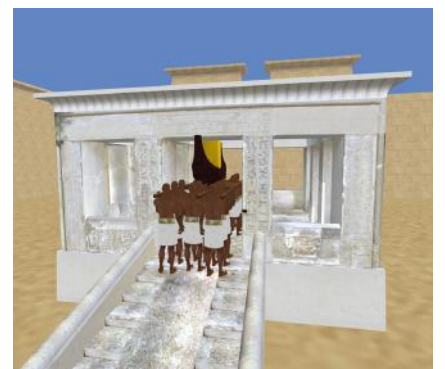
Relief scenes in the hypostyle hall dated to the reigns of Sety I and Ramesses II show vividly the greatly elaborated form of the processional bark by the start of the 19th Dynasty. As the grandeur of the bark increased, so presumably did the size and weight of the load, and these depictions show that thirty priests (the version C bark, see below) now supported the bark of Amun-Re. The goddess Mut and her son Khonsu were carried in their own slightly smaller barks on procession, held by eighteen priests at this time (the version B bark).



Version B bark in the wadjet hall of Hatshepsut, her northern-most obelisk is shown to the right



Version B Bark entering the open festival court of Thutmose II, walking between the standing obelisks of Thutmose I



Version B bark entering the white chapel, note the bark's stern and central shrine as modeled are too tall for the lintel of the entrance

8 Bell 1997:158-160

9 Lacau and Chevrier 1956

10 Kees 1959: 205; Blyth 2006: 16

11 Bell 1997:158-160

12 Larché and Burgos 2006: 63

13 Blyth 2006:36

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Ritual Barks at the Temple of Karnak

Version C

Length: 4.46m (14.63 feet)

Height: 3m (9.84 feet)

Width: 2.2m wide (7.22 feet)

Total priests serving as carriers: thirty (fifteen in front of the shrine, fifteen behind)

Number of carrying poles: five (the boat and shrine placed off center)

**The shrine and model boat have been increased in size to reflect the need for additional carriers

The construction of the great hypostyle hall by Sety I created a new, monumental setting for festival spectacle. The space replaced the *wadjet* hall, now much too small for the large processions, as the site of coronation and *heb sed* celebrations.¹⁴

The hypostyle hall's gigantic size and the wide aisles between its giant columns better suited the expanded size of the Version C bark. The larger procession could move along both the central east-west nave and the north-south axis easily, turning if necessary without hindrance from existing architectural features.

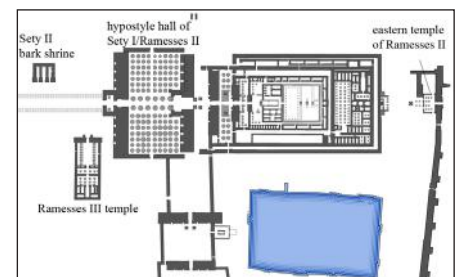
Sety II, a king following after Ramesses II's son Merenptah, commissioned a triple bark shrine for the area west of the 2nd pylon, outside Karnak's entrance. Each chamber was decorated with scenes of the gods Amun-Re, Mut or Khonsu. The shrine's central chamber, inscribed for Amun-Re, was appropriately sized to hold the version C bark. The flanking chambers, for the barks of Mut and Khonsu, are too narrow for the version C bark. The version B bark fits smoothly through these doors, showing that the architecture was specifically constructed to accommodate the design of the Karnak barks at that time.

Ramesses III also built a bark shrine for festival processions at Karnak, designed in this case in the form of a complete temple with pylon, open court, hypostyle (columned) hall, and a triple bark shrine in the rear. The central chamber, designated for the bark of Amun-Re, was larger than the two side-chambers, presumably to accommodate the expanded bark.¹⁵

Ramesses IX was the last New Kingdom pharaoh to add a major structure to Karnak temple, a gate leading out of the southern side of the court between the third and fourth pylons. The decoration of the gate included depictions of the Theban festival processions,¹⁶ and it can be assumed that the grand doorway was used to usher processions to or from the temple's southern axis, defined by the seventh-tenth pylons. The gate's monumentality would clearly have easily accommodated the largest-sized barks.



Relief scene from the Hypostyle Hall of the bark of the god Khonsu, showing three rows of priests carrying the bark, with additional priests walking alongside with one hand raised



Plan of central Karnak in the 19th Dynasty



Version C bark entering the Hypostyle Hall, moving along the temple's main east-west axis

14 Golvin and Goyon 1987:44

15 Carlotti 1995, pl. IV

16 Amer 1999

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Ritual Barks at the Temple of Karnak

Discussion

In the early 18th-Dynasty, during the reign of Hatshepsut, the portable bark of Amun-Re was moved through the temple and along festival routes supported by twelve or eighteen priests. The scale of the existing architecture of Karnak would have allowed either size bark to access the sacred space. Since only one bark is represented in the reliefs on the queen's red chapel, the divine statues of Mut and Khonsu must have traveled together with that of Amun-Re at this time (when these statues took part in a festival procession as well, such as during the *Opet* festival).¹⁷

Relief scenes at Luxor temple dated to the reign of pharaoh Tutankhamun show that by the mid-18th Dynasty, Mut and Khonsu participated in festival processions in their own portable barks, accompanied by barks for images of the king and queen.¹⁸ By this time, the divine processional barks had been enlarged, with the bark of Amun-Re carried by 30 priests (supported on five poles), and barks for Mut and Khonsu supported by 18 priests each (supported on three poles). Images from the hypostyle hall at Karnak show these elaborated bark forms continued to be used by later kings.

In the 19th Dynasty, the increasing size of the processional barks and the number of procession participants impacted the very design of Karnak temple itself, as new temple constructions included triple-shrines and provided expanded doorways for the bark of Amun-Re. The architecture of Karnak was increasingly monumentalized, creating new spaces appropriate for the expanding pageantry. The festival processions clearly maintained their importance, as kings throughout the New Kingdom continued to embellish the temple with architectural features specifically meant to provide settings for the festival spectacle.



Version C bark exiting the central shrine of Amun-Re in the bark shrine of Sety II



Version C bark attempting to enter the eastern shrine of Khonsu in the bark shrine of Sety II, showing the width of the procession is too great



Version C bark entering the central shrine of the Ramesses III temple

17 Bell 1997:293-294

18 Oriental Institute Epigraphic Survey 1994: xviii

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Ritual Barks at the Temple of Karnak

Note on the visualizations of Karnak temple in the Digital Karnak Project model

The Digital Karnak model was built as a teaching tool to make the many chronological changes at the temple more intelligible to university students. For this article, a number of the models were adjusted to reflect the dimensions of each space with greater accuracy. The current state of the model is based on publications dated to 2008 and prior. As new information emerges from the site of Karnak, the model will need to be updated to reflect scholars' evolving knowledge of the temple precinct.

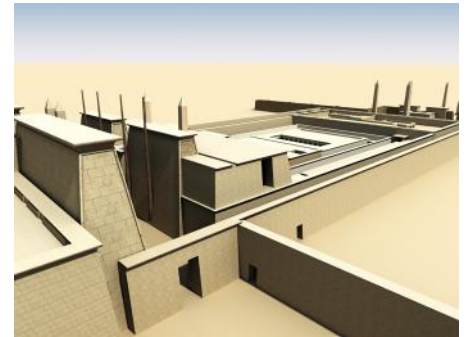
The Digital Karnak Project is directed by UCLA faculty Dr. Willeke Wendrich and Dr. Diane Favro.

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The author would like to thank UCLA's Experiential Technology Center research fellow Itay Zaharovits for adjusting the model and creating the screen shots used in this article.

Images from student projects, UCLA 2011

In spring 2011, Dr. Elaine Sullivan and Dr. Kara Cooney taught a UCLA undergraduate course entitled *the Temples of Ancient Thebes*. For their final projects, a small number of students in this class had the opportunity to create digital projects utilizing the existing UCLA 3D model of the Amun-Re temple of Karnak. Yehudit Schutzman, Sherie Jung and Jennifer Marentes worked with a 3D modeler to test out theories related to the ritual movement of the processional bark of the temple (see the end of this document for images from their work). Their projects examined the size of the bark and processional routes traveled during the annual *Opet* festival, a festival linking the temple of Karnak with the nearby temple of Luxor. A grant from UCLA's Office of Instructional Development funded both student modeling within the Google SketchUp 3D modeling platform and further investigations within the high-resolution model.

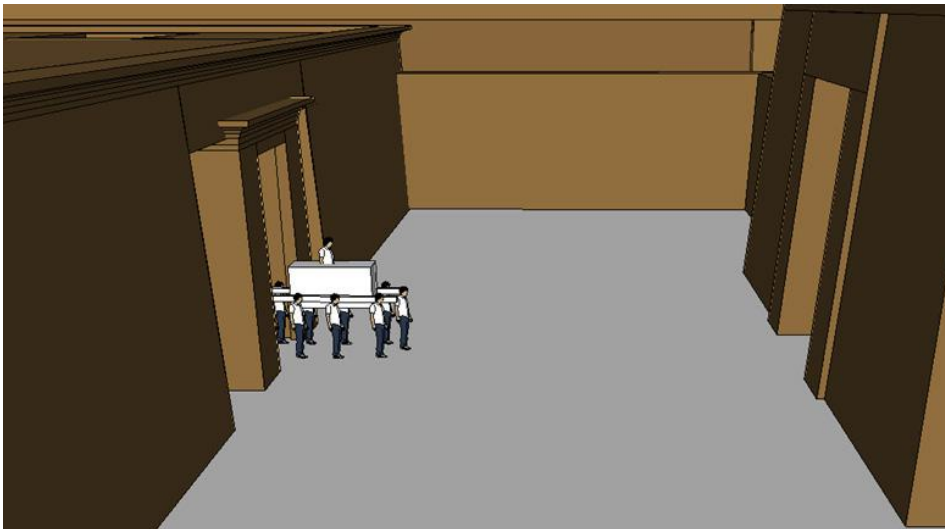


Model reconstruction of the gate of Ramesses IX at Karnak temple, leading to the southern axis and the 7th, 8th, 9th and 10th pylons

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Ritual Barks at the Temple of Karnak

Sherie Jung: Research on the Size of the Bark Shrine through Studying the Procession of the Opet Festival during Hatshepsut's Reign



ABOVE: The Bark moving through Hatshepsut's wadjet hall and entering the 4th Pylon



LEFT: Exiting the 4th Pylon and Entering the Festival Court of Thutmose II

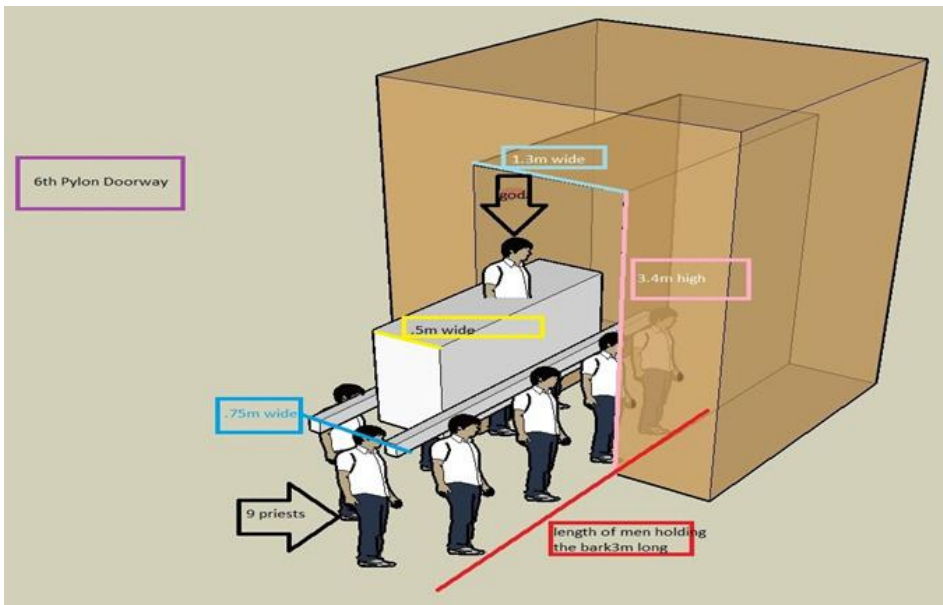
BELOW: Exiting the temple precinct through the 8th Pylon of Hatshepsut



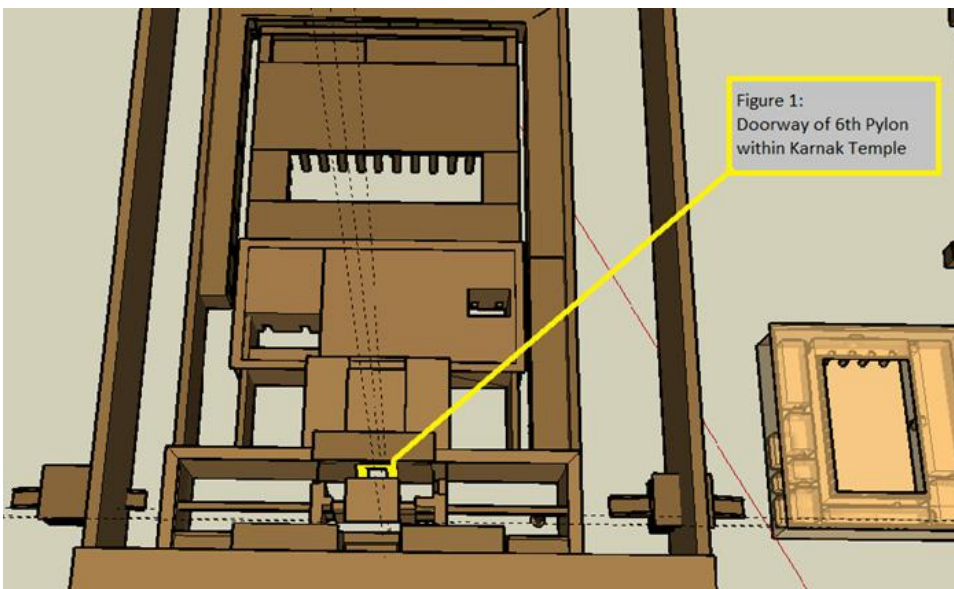
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Ritual Barks at the Temple of Karnak

Yehudit Schutzman: Barks and Karnak



Detailed image of a mock-up bark moving through the 6th Pylon gateway

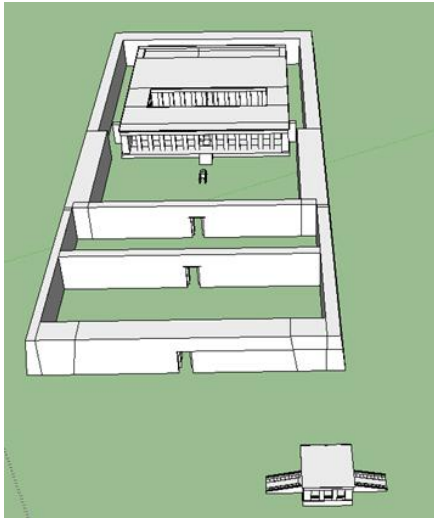


Moving the bark through the 6th Pylon gateway during the reign of Ramesses II

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Ritual Barks at the Temple of Karnak

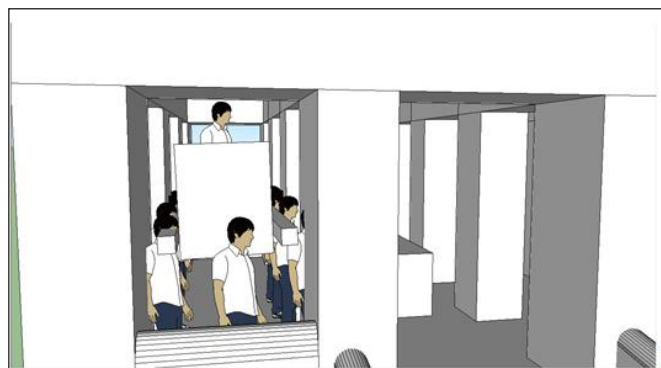
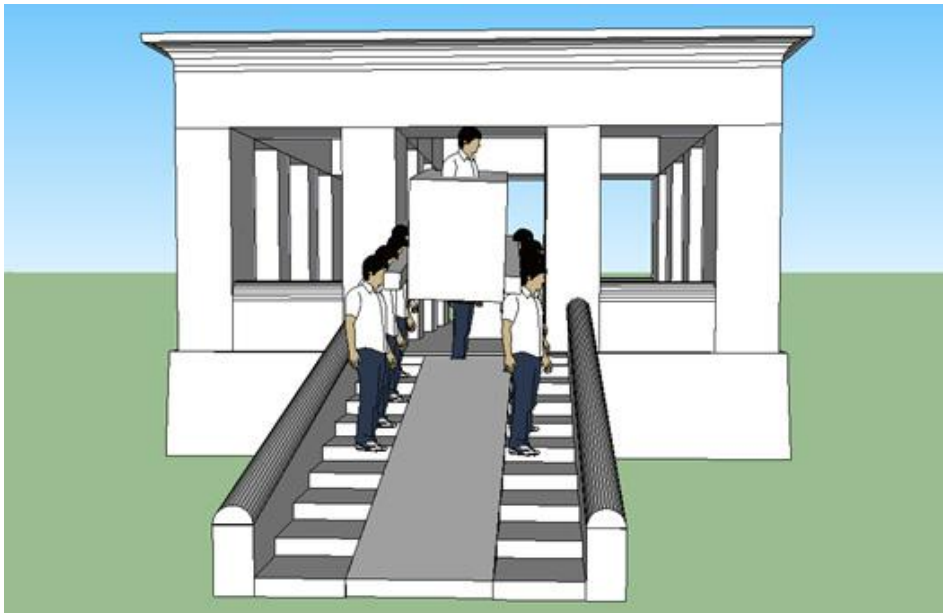
Jennifer Marentes: Middle Kingdom Processions



LEFT: Possible location of the White Chapel during the Middle Kingdom

CENTER: Mock-up of processional bark entering the White Chapel

BOTTOM: Mock-up of processional bark inside the White Chapel



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